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Capital Structure and Financial Performance of State-Owned Enterprises in South Africa: Does Corporate Governance matter?

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School of Economics and Finance
Faculty of Commerce, Law, and Management

Capital Structure and Financial Performance of State-Owned Enterprises in South Africa: Does Corporate Governance matter?

Master of Commerce (50% Research) in Finance

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Declaration

I, Khumalo Nomathemba, declare that this thesis is my original work. It is being submitted in fulfilment of the requirements for the degree of Master of Commerce in Finance to the University of the Witwatersrand, Johannesburg. This work has not been submitted for any other degree or examination, neither at this university nor any other institution of higher education.

Date submitted: 29 February 2024

Signature : 

Dedication

Dedicated to my beloved husband, Nqabezulu Khumalo, whose unwavering support and love have been the cornerstone of my academic journey.

Acknowledgements

First and foremost, I express my gratitude to God, whose enduring mercy sustained me and whose strength was most evident in my moments of weakness.

I extend heartfelt thanks to my husband, Nqabezulu Khumalo, for his support in every aspect, his numerous sacrifices, and his caring presence throughout my academic journey.

My profound appreciation goes to my entire family, the Mpofu and Khumalo families, for their prayers and steadfast support that kept me motivated. I am also indebted to my work colleagues; whose constant support was instrumental during challenging times in the course of this research.

Lastly, I am deeply thankful to my supervisors, Professor Chimwemwe Chipeta and Ms. Lerato Mapela, for their unwavering guidance and support. Their mentorship gave me invaluable knowledge and insights in my research area, contributing significantly to my academic growth.

Abstract

The study examines the relationship between capital structure and financial performance of South African State-Owned Enterprises (SOEs) considering corporate governance factors. Using empirical data derived from financial reports and audited statements of 21 major SOEs listed in the Public Finance Management Act (PFMA) of South Africa, this study employs a quantitative methodology, specifically employing Fixed Effect (FE) and Generalized Methods of Moments (GMM) regression models on annual data from 2010 to 2022 to examine variables that affect financial performance of the South African SOEs.The research reveals mixed relationships between capital structure factors and financial performance, yet these relationships lack significance. Similarly, corporate governance demonstrates diverse relationships with financial performance, however, a significant negative correlation exists between board composition and return on assets. When examining the effect of corporate governance on capital structure in influencing financial performance, the study indicates an insignificant impact on financial performance. The policy implications of the study suggest that enhancing corporate governance practices, combating corruption, promoting strategic investments, efficient resource allocation, and government support for SOEs as drivers of economic growth should be guided by a clearly defined funding policy to enhance the financial performance of SOEs.

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ACRONYMS

ANC	African National Congress
ATA	Air Transport Association
ACSA	Airport Corporation of South Africa
CEF	Central Energy Fund
CEO	Chief Executive Officer
DPE	Department of Public Enterprises
FIs	Financial Intermediaries
FE	Fixed Effect
GDP	Gross Domestic Product
GMM	Generalised Methods of Moments
IoD	Institute of Directors
IMF	International Monetary Fund
LM	Langrange Multiplier
LTDTA	Long-Term Debt to Total Assets
M&M	Modigliani-Miller
NPM	Net Profit Margin
OM	Operating Margin
OLS	Ordinary Least Squares
OECD	Organisation for Economic Co-operation and Development
PMG	Parliamentary Monitoring Group
PRC	Presidential Review Commission
PwC	Price Waterhouse Coopers
PFMA	Public Finance Management Act
RE	Random Effect
ROA	Return On Assets
ROE	Return On Equity

STDTA	Short-Term Debt to Total Assets
SAA	South African Airways
SABC	South African Broadcasting Corporation
SAFCOL	South African Forestry Company Limited
SAPO	South African Post Office
SICs	State Interest Companies
SOCs	State-Owned Companies
SOEs	State-Owned Enterprises
SCs	Statutory Corporations
TDTA	Total Debt -to Total Assets
VIF	Variance Inflation Factor

CHAPTER 1: INTRODUCTION TO THE STUDY

1.1. Background and motivation

State-owned enterprises (SOEs) are entities the government creates to engage in commercial activities. The government usually acquires either full or partial ownership of these entities. The SOEs in South Africa were established during the apartheid era to counteract the impact of international sanctions (Clark, 1994). As of May 2012, there were approximately 715 SOEs in South Africa at different government levels, with 21 major SOEs at the national level (Schedule 2 of the 1999 PFMA).

SOEs have played a vital role in the country's economic growth and poverty reduction by providing essential infrastructure services like energy, transport, and water (OECD, 2014; United Nations Economic Commission for Africa, 2021; Som, 2022; Globe Newswire, 2021). Globally, SOEs' assets amounted to $45 trillion as of 2020, with emerging markets driving their growth, and South Africa's SOE assets constituted 34% of the country's GDP by the end of fiscal year 2019/2020 (IMF, 2022). These assets belong to nonfinancial manufacturing, energy, telecommunications, and transportation SOEs. In contrast, financial SOEs, including government-run banks and insurance firms, hold the remaining 14%. However, the Presidential Review Commission (PRC) identified several challenges facing SOEs, including excessive politicisation, inadequate financing policies, lack of oversight, weak board composition, and transparency issues. Furthermore, a significant challenge arises from the substantial reliance on government support through guarantees or subsidies (Ntuli & Nzuza, 2022; Organization for Economic Co-operation and Development (OECD) Report, 2014). Globe Newswire (2021) report the substantial debt of R692.9 billion by some SOEs and the risk of potential defaults, which strain the government's finances. These factors have contributed to poor financial performance within South African SOEs, which can be attributed to deteriorating infrastructure, inconsistent leadership, corruption, and wasteful spending.

These concerns have attracted significant public attention in recent years, given the utilisation of taxpayers' money to support these struggling SOEs (Auditor-General Report,2012). Government bailout and recapitalisation of SOEs have cost more than R308 billion over the

past two decades (Auditor-General Report,2022). Major SOEs like Eskom, South African Airways (SAA), and Transnet have underperformed (IMF, 2022). Eskom's struggles in managing energy supply, financial instability, and governance issues have led to power outages, impacting households and businesses (Reuters, 2019). Eskom's debt of R440 billion is primarily addressed through loans, contributing to its financial challenges. Concurrently, executive turnover weakens governance at Eskom. Similarly, Transnet, while striving to sustain a competitive freight system, faces financial, corruption, and governance issues (Neethling, 2023; PMG, 2018; Thabane & van Deventer, 2018). SAA, contributing 3.5% to the GDP, relies on government bailouts due to profitability struggles (ATA Report, 2017). These persistent financial struggles experienced by SOEs, allegations of insufficient governance, mismanagement, fraudulent activities, and corruption, along with concerns regarding the financial sustainability of specific SOEs, serve as motivation for this study.

Capital structure, the combination of debt and equity a company uses to finance its operations (Modigliani & Miller, 1963; Myers, 2001), has long been a subject of interest in finance literature. While Modigliani and Miller initially argued that capital structure does not affect a firm's value, subsequent studies by Harris and Raviv (1991) and Jensen (1986) suggested that it can influence a company's cost of capital by altering its risk profile.

The relationship between capital structure and financial performance has been extensively explored, and the focus has now shifted to SOEs in emerging economies, such as South Africa, where the government holds a significant stake in firms across various industries (Marimuthu, 2019; Marotholi, 2018). To bridge the literature gap, this study aims to investigate the link between capital structure and the financial performance of SOEs in South Africa incorporating corporate governance. The financial performance is evaluated using indicators such as return on assets (ROA), return on equity (ROE), net profit margin (NPM) and operating margin (OM). Moreover, the study aims to provide empirical evidence on the relationship between capital structure and financial performance of SOEs in South Africa and the role of corporate governance in influencing this link.

1.2 *Research problem statement*

The significance of capital structure and its impact on the financial performance of SOEs in South Africa is a topic of great importance. Capital structure, defined as the composition of debt and equity financing within a firm, is a critical determinant of a company's risk profile, cost of capital, and overall financial performance. It is crucial to incorporate corporate governance, which substantially influences the decision-making processes and governance practices within SOEs.

Previous studies have explored the relationship between capital structure and financial performance across various industries and countries (Adesina et al., 2015; Assagaf & Ali, 2017; El-Sayed Ebaid, 2009; Hermanto et al., 2021; Pratheepkanth, 2011). Mutize and Tefera (2020) examined the feasibility of establishing effective governance mechanisms in SOEs in selected African countries and explored the associated costs of governance failures. The study suggests that the central government's response to these entities' issues is critical in determining the performance of SOEs in Africa. The authors propose that privatisation could be a feasible course of action for corrective action in addressing governance concerns in African SOEs. They also advocate clear objectives, assertive decision-making, effective governance practices, and structural reforms to solve governance challenges. Okiro, Aduda, and Omoro (2015) explore the effects of corporate governance and capital structure on the performance of companies listed on the East African Community securities exchange. The research findings indicate a significant positive relationship between corporate governance and firm performance. In a separate study, Ferriswara, Sayidah, and Buniarto (2022) explore the relationship between corporate governance, capital structure, financial performance, and firm value on the Jakarta Islamic Index. Meanwhile, Gakpo (2021) assesses the influence of corporate governance practices on the financial performance of SOEs in Ghana. Both studies indicate that corporate governance has a mixed impact on financial performance, exhibiting both positive and negative effects.

In a much closer study to what this research aims to investigate, Marotholi (2018) examines South Africa's Schedule 2 SOEs, revealing a positive and significant relationship between long-term debt to total assets and return on assets, alongside a negative and significant association

with Tobin's Q. In contrast, Marimuthu (2019) explores the relationship between capital structure and financial performance in South African SOEs, uncovering a significant negative correlation between the debt-to-equity ratio and return on assets, as well as a significant positive correlation between the debt-to-assets ratio and return on assets. However, there remains a gap in research explicitly addressing the relationship between capital structure and financial performance in South African SOEs while also considering the aspect of corporate governance.

In the context of South Africa where corruption and the misappropriation of funds are one of the main reasons why SOEs fail, there is considerable interest in incorporating corporate governance as a factor that influences the performance of SOEs. Likewise, the Institute of Directors (2009) King report on corporate governance for South Africa emphasises the importance of governance in SOEs and urges the adoption of clear governance structures, competent board appointments, and transparent decision-making processes.

1.3. Research objectives

The main aim of the study is to examine the relationship between capital structure and financial performance of South African SOEs and consider the role of corporate governance in influencing this link.

The sub-objectives of the study are as follows:

1. To determine the current capital structure composition of South African SOEs.
2. To evaluate the financial performance of South African SOEs in terms of profitability, liquidity, and solvency.
3. To investigate the correlation between capital structure and financial performance of South African SOEs.
4. To examine the interaction between corporate governance and capital structure factors, and their combined impact on the financial performance of South African SOEs.

1.4. Research questions

The research questions that will be addressed are:

1. What is the current composition of capital structure in South African SOEs?

2. How do South African SOEs perform regarding profitability, liquidity, and solvency?
3. Is there a significant correlation between capital structure and the financial performance of South African SOEs?
4. How does the interaction between capital structure and corporate governance factors influence the financial performance of South African State-Owned Enterprises?

To accomplish these objectives, the study will utilise empirical analysis, examining financial data obtained from a selected sample of South African SOEs and considering the influence of corporate governance factors.

1.5. Hypothesis

The proposed hypotheses are formulated based on the agency theory and existing literature. According to the agency theory developed by Jensen and Meckling (1976), there are two types of company conflicts of interest: the cost of equity agency caused by conflicts of interest between managers and shareholders and the cost of debt agency caused by conflicts of interests between creditors and shareholders. Agency theory suggests that the relationship between capital structure and financial performance is influenced by the alignment of interests between shareholders and management. When corporate governance mechanisms are in place to align the interests of shareholders and management, the relationship between capital structure and financial performance is expected to be positive (See, Affes & Jarboui, 2023; Ahmed et al., 2023; Shahzad, 2022).

Examining interrelationships and interdependencies between corporate governance, capital structure, and firm performance of companies on the Mauritius Stock Exchange, Ronoowah and Seetanah (2023) find capital structure to affect financial performance positively and significantly. A positive effect of corporate governance on capital structure is on non-financial firms and financial firms, a strong negative impact of corporate governance on capital structure, and a significant positive effect of capital structure on corporate governance. In a similar line of study, Shazad et al. (2022) find that capital structure proxies, namely debt to assets and equity, negatively influence financial performance.

To investigate how corporate governance effects, differ with company size, Detthamrong et al. (2017) split non-financial firms in Thailand into small and large firm sub-samples and observed a negative effect of audit committee size on financial performance in large firms and the effect of audit reputation on financial performance was evident in small firms. In light of ownership, Zhang (2013) finds that the state owners positively relate to capital structure. On the other hand, Wang et al. (2023) state that non-state shareholders can contribute to a company's capital structure by speeding up adjustments and reducing deviations. This leads to better capital structure management, particularly in local and competitive state-owned enterprises.

From the preceding lines of arguments, the hypotheses are formulated as follows:

Hypothesis 1

Null hypothesis: There is no statistically significant relationship between capital structure and financial performance of South African SOEs.

Alternative hypothesis: A statistically significant relationship exists between South African SOEs' capital structure and financial performance.

Hypothesis 2

Null hypothesis: There is no statistically significant relationship between corporate governance and the financial performance of South African SOEs.

Alternative hypothesis: There is a statistically significant relationship between corporate governance and the financial performance of South African SOEs.

Hypothesis 3

Null hypothesis: Corporate governance does not have a statistically significant effect on capital structure in influencing financial performance of SOEs.

Alternative hypothesis: Corporate governance has a statistically significant effect on capital structure in influencing financial performance of SOEs.

The research aims to validate or reject these hypotheses through empirical analysis, providing insights into the relevance of capital structure and corporate governance in determining the financial performance of South African SOEs.

1.6. Potential benefits of the study

The study on the relationship between capital structure and financial performance provides valuable insights into how the capital structure of South African SOEs impacts their financial outcomes. This research is a valuable guide for decision-makers in SOEs and other organisations within South Africa, helping them make informed capital structure choices. It offers evidence-based insights, which can assist in identifying the optimal balance between debt and equity financing that has the potential to enhance financial performance (Edim, 2014; Marotholi, 2018).

Incorporating corporate governance into the analysis highlights the importance of good governance in shaping the relationship between capital structure and financial performance.

Luo and Jiang (2022) stress that enhancing the corporate governance framework of listed companies, refining the adjustment of their financing structure, and reinforcing operating risk management can improve the company's capital structure. Consequently, this can promote a sustainable and healthy financial position for the organisation. The study emphasises the need for effective oversight, transparency, and accountability within SOEs, which can ultimately lead to improved financial outcomes. It can contribute to developing appropriate policies and regulations regarding capital structure and corporate governance practices in SOEs. This can promote financial stability, efficient resource allocation, and overall growth.

The study adds to the existing literature on the relationship between capital structure, financial performance, and corporate governance. It contributes to the academic discourse by presenting empirical evidence specific to South African SOEs and considering corporate governance, thereby enriching the knowledge in this field.

1.7 Structure of the study

This study comprises six chapters. Chapter One introduces the research. Chapter Two explores the SOE environment in South Africa. Chapter Three critically reviews capital structure, financial performance, and corporate governance literature. Chapter Four details the empirical part, describing and justifying the research methodology. Chapter Five presents the empirical results. Finally, Chapter Six concludes the thesis by revisiting research questions, making policy recommendations, and suggesting future research.

CHAPTER 2: SOE ENVIRONMENT IN SOUTH AFRICA

2.1 Introduction

This chapter on the South African SOE environment covers critical aspects. It defines and classifies SOEs, provides a historical overview dating back to the 19th century and the apartheid era, and examines the legal framework, capital structure, financial performance, and corporate governance issues. The chapter emphasises the challenges SOEs face, including weak governance, outdated business models, and a need for legislative improvements.

2.2 Definition and classification of SOEs

The International Monetary Fund (IMF) (2020) characterises SOEs based on shareholdings, thresholds, direct and indirect ownership and control, and involvement of foreign entities, states, and interests. These enterprises play a significant role in shaping the economy and impacting people's lives by providing goods and services distinct from the direct actions of governments. In numerous countries, SOEs deliver essential services like water, electricity, and transportation and extend business loans. The diversity of SOEs is evident in variations in size, operational sector, complexity, sophistication, and the degree of government ownership and control. While some function essentially as government arms, others exhibit mixed ownership, involving public and private stakeholders, with a heightened commercial focus.

According to the OECD Report (2015), SOEs are organisations established by a government for commercial purposes, varying in ownership from total government control to a blend of public and private ownership. The Report specifies that SOEs are subject to state influence by the government holding the majority of voting shares or possessing a substantial minority stake. These entities operate within the framework of private business regulations and are structured to pursue financial profitability and developmental objectives.

Examining the classification of SOEs in South Africa, Kikeri (2018) conducts a comprehensive analysis. As of May 2012, approximately 715 SOEs were operating across different government levels, encompassing commercial and non-commercial entities and their subsidiaries. Commercial SOEs are subcategorised into state-owned companies (SOCs), state-interest

companies (SICs), statutory corporations (SCs), and financial intermediaries (FIs). Non-commercial SOEs involved in public functions such as research and regulation are also part of this landscape. The collective asset base of all SOEs surpasses R1 trillion, equivalent to approximately 27% of the GDP.

Significantly, major commercial SOEs, including 20+ SOCs at the national level and 14 water boards, contribute more than 8.5% to the GDP. They play crucial roles in infrastructure, finance, national security, and social services. Notable infrastructure SOEs mentioned in the report are Eskom, Transnet, water boards, Airport Corporation of South Africa (ACSA), South African Airways (SAA), and SANRAL. Other categories encompass financial SOEs like the Development Bank and the Land and Agricultural Bank, entities in national economic security such as Denel, Central Energy Fund (CEF), PetroSA, and social/developmental SOEs like the South African Post Office (SAPO), Post Bank, SABC, and South African Forestry Company Limited (SAFCOL). Table 6 in the Appendix outlines major public entities classified as Schedule 2 entities according to PFMA(2019).

2.3 Brief history of SOEs in South Africa

Clark (2009) outlines the historical development of SOEs in South Africa, dating back to the 19th century. During that period, the government aimed to foster local industries to resist British control, implementing high tariffs on various imports. The apartheid era saw the establishment of numerous SOEs as a response to international sanctions. The African National Congress (ANC) government initially sold stakes in these enterprises and reduced import tariffs. However, by the end of 2018, corruption within these SOEs resulted in severe financial difficulties. Issues such as financial troubles, mismanagement, maladministration, and government bailouts, particularly in entities like the South African Broadcasting Corporation, South African Airways, Eskom, Denel, PRASA, and Transnet, generated significant public controversy (IMF, 2022; Kikeri, 2018; Mutize & Gossel, 2017).

2.4 Legal and regulatory framework of SOEs in South Africa

Various essential documents and laws shape the legal and regulatory framework governing SOEs in South Africa. These include the Public Finance Management Act (PFMA), OECD

guidelines, the King Report, and South Africa's Companies Act (Price Waterhouse Coopers [PwC], 2012). Enacted in 1999, the PFMA is a pivotal legislation overseeing the financial management of SOEs, aligning with the constitutional provisions to ensure transparent and accountable public finance management (OECD, 2015). The OECD guidelines, established in 2015, stress the importance of an efficient and transparent SOE sector. They advocate for simplifying, streamlining, and harmonising legal frameworks governing SOEs to ensure fairness and transparency, treating SOEs, private companies, and other economic entities equally (Wandrag, 2018).

Playing a significant role in the corporate governance of SOEs in South Africa, the King Report on Corporate Governance for South Africa, in conjunction with the Companies Act, provides principles and practices for sound corporate governance. The Companies Act of 2008 is a pivotal piece of legislation regulating the incorporation, registration, organisation, and management of companies in South Africa. It outlines relationships between companies and their shareholders or members and facilitates equitable amalgamations, mergers, and takeovers of companies (South African Government, 2008). Notably, the Companies Act, PFMA, and King III converge on many principles of good governance applicable to state-owned companies. According to PwC (2012), exploring alignment possibilities among these legal frameworks should adhere to fundamental governance principles such as fairness, transparency, and responsibility.

2.5 Capital structure of South African SOEs

The establishment of SOEs by the government does not automatically imply a necessity for state funding. SOEs have various financing options, including generating revenue through operations and borrowing from local and international capital markets while adhering to PFMA regulations (Parliamentary Monitoring Group [PMG], 2015). The ability to borrow is influenced by the assets and expected future revenue flows of the SOCs. Additionally, SOCs may raise funds by issuing shares to private investors or, with state shareholder approval, sell assets or divest subsidiaries. Apart from these self-financing methods, the state can provide further financial support to SOEs. This support can occur in two main ways: enhancing the SOC's capacity to obtain its financing or providing direct financial support (PMG, 2015).

The financial challenges confronting state-owned companies have become evident, impeding their access to capital markets and resulting in reduced capital spending and weakened cash flows. This has led to delays in delivering essential social and economic infrastructure, affecting their capacity to meet debt commitments (National Treasury, 2018). According to the Public Finance Management Act, state-owned companies listed in Schedule 2 must generate sufficient financial resources internally to meet obligations to employees, the public, creditors, and debt holders. Despite this requirement, there is a growing dependence on external funding, government-guaranteed debt, and bailouts to sustain SOC operations. From 2012/13 to 2021/22, state-owned companies received approximately R266.6 billion in bailouts from the government (National Treasury, 2023). The repeated bailouts for entities like Eskom, SAA, the South African Broadcasting Corporation (SABC), and the SAPO, among others, have emerged as a fiscal burden. These bailouts have elevated fiscal risk to unacceptable levels, crowding out essential social and other expenditures (PMG, 2023).

2.6 Financial performance of South African SOEs

National Treasury reports from 2015, 2017, and 2022 highlight SOEs' crucial role in economic activity, constituting 20% of gross capital formation. Well-managed public assets contribute to economic growth while underperforming SOEs can negatively impact public finances. Despite increased infrastructure investments enhancing the asset base of SOEs, persistent financial challenges have prompted calls for government intervention. The financial decline of major SOEs is attributed to weak corporate governance and outdated business models. Several SOEs missed investment targets in the 2022/23 fiscal year, lacking sustainable business models and relying on state support. Investors are cautious about providing capital without government guarantees, and the financial strain has intensified due to the COVID-19 pandemic.

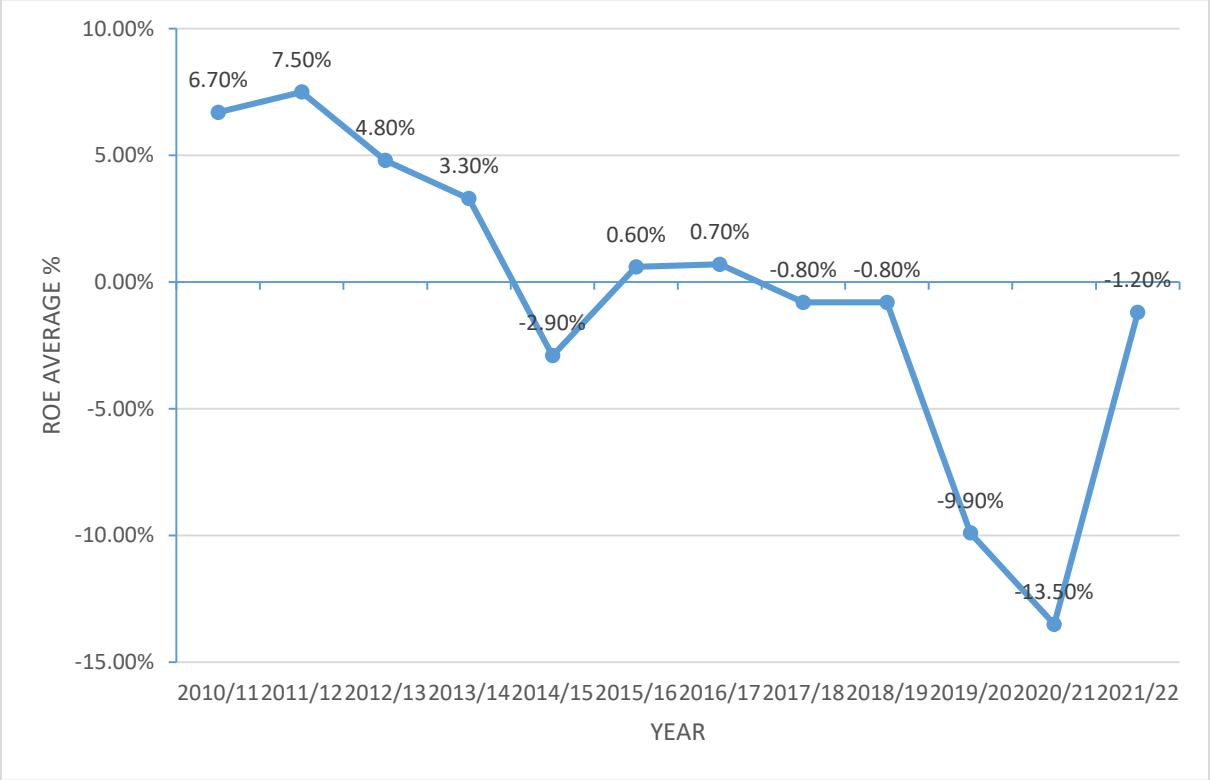
Referring to Table 8 in the Appendix, which presents the consolidated balance sheets of major State-Owned Enterprises (SOEs) spanning from the fiscal year 2010/11 to 2021/22, it is observed that during the period from 2010/11 to the conclusion of 2014/15, the aggregated net asset value within state-owned entities increased by R88.4 billion. A substantial portion of this growth, amounting to R68.95 billion, can be attributed to Eskom and Transnet. Despite the imperative for state-owned enterprises to generate returns conducive to strategic development,

there was a collective decrease in the return on equity in 2014/15, primarily attributed to noteworthy losses incurred by CEF and SAA.

Over six fiscal years, from 2016 to 2021, state-owned companies faced deteriorating average returns on equity, reaching a low of -13.5%. National Treasury reports for 2021-2023 identified obstacles to profitability, including high debt service costs and employee compensation, compounded by reduced revenue growth due to the pandemic. In the fiscal year 2021/22, total assets increased, but higher average costs of new debt led to a rise in total liabilities. Despite some major state-owned companies witnessing growth in net asset value, the overall challenge of achieving long-term profitability persists, as reflected in the negative return on equity. (National Treasury, 2023).

As shown in Figure 1, the ROE for SOEs saw a sharp decline in profitability between 2010/11 and 2021/22. Starting at 6.7% in 2010/11, ROE peaked at 7.5% in 2011/12 before entering a downward trend, eventually dropping to -13.5% by 2020/21. Although ROE improved slightly to -1.2% in 2021/22, the overall pattern emphasizes the need for significant reforms in governance and operational efficiency to strengthen the financial performance of SOEs.

Figure 1:Profitability of major SOEs



Source: Author's construction

2.7 Corporate governance of SOEs in South Africa

As articulated by Ehikioya (2009) and the OECD Principles of Corporate Governance (2015), corporate governance is centred on the processes and structures implemented by stakeholders within a company to protect the interests of all parties involved. It establishes a framework for setting objectives, determining means of attainment, and monitoring overall performance, involving complex relationships among management, the board, shareholders, and other stakeholders.

In the South African context, the PFMA of 1999 serves as a fundamental piece of financial legislation. Enacted by the first democratic government, the PFMA is crucial for promoting effective financial management to optimise service delivery within the constraints of limited resources. The responsibility for proper management of these resources lies with both public officials and SOE management. However, according to the IMF (2022), public finances are

increasingly constrained, and the growing burden of SOEs on the budget is a significant concern. Deficiencies in SOEs' service delivery, particularly in electricity provision, combined with corruption scandals in procurement and administration, have fueled discontent and calls for reform.

The Presidential Review Committee [PRC] Report (2014) identifies inadequacies in the legislative framework for SOEs, revealing evidence of conflict, duplication, and unclear roles. Governance, ownership policies, and oversight systems are considered inadequate, and the recruitment of board members and executives is lacking in quality. The executive authority, boards, and Chief Executive roles in governance and operational management lack clarity.

Moreover, remuneration frameworks and practices are flagged as inconsistent and need urgent reconsideration. These inconsistencies directly impact SOE performance and affect the supply and demand for skilled personnel. Many SOEs require substantial capital injection, and finance policies need careful reassessment. The funding models for the social and economic development mandates of SOEs are described as blurred and confusing, leading to instances of undercapitalisation that hinder their ability to address national challenges effectively.

King III emphasises the importance of an effective board comprising a balance of executive and non-executive directors, with a majority being independent non-executive directors to mitigate conflicts of interest (Institute of Directors [IoD], 2009). The relationship between board composition and firm performance is subject to ongoing research and debate, with some studies suggesting a positive correlation, highlighting the monitoring role of non-executive directors in controlling executive actions (Alam, 2016). Conversely, other studies argue against a clear relationship, contending that reducing insider directors could deprive boards of valuable firm-specific knowledge (Merendino & Melville, 2019; Van Ness, Miesing & Kang, 2010).

Collaboration and coordination among SOEs and their oversight are reported as poor, reducing their impact on service delivery and increasing operational costs. Standard & Poor's downgrade of South Africa to 'junk' status in 2017 cited poor governance of SOEs as a contributing factor (Wandrag, 2018). The International Monetary Fund (2022) reports that several nonfinancial

SOEs, including Eskom, SABC, Denel, and SAA, have received transfers from the government, posing significant fiscal risks.

Regarding executive remuneration, the IMF Report indicates a need for adherence to the remuneration model developed by the Department of Public Enterprises (DPE) to eliminate excessive and unjustified executive pay. However, it is noted that many SOEs have not adopted these guidelines (Bezuidenhout et al., 2018). There has been a growing demand to cap the salaries, bonuses, and incentive programs for executives and board members of SOEs in South Africa. This came as a response to reports indicating that these individuals receive significant compensation, even in cases where certain SOEs exhibit poor performance (Cachalia, 2023; Gumede, 2020).

The IMF Report (2022) highlights an inconsistent legislative framework, with differences in CEO and SOE board appointments, remuneration policies, checks and balances, and reporting obligations. Enforcement challenges, particularly the lack of adherence to provisions like the PFMA, are also longstanding issues in the governance landscape of SOEs. In South Africa, the Department of Public Enterprises functions as the representative shareholder on behalf of the South African Government, playing a crucial role in overseeing SOEs operating in critical sectors. Notably, while the Department of Public Enterprises may not directly control specific companies, they are within the purview of various other government departments. The IMF report highlights that SOEs with partial private ownership, such as Telkom, consistently demonstrate superior financial indicators to fully government-owned entities. This improved performance is attributed to better outcomes in profitability and solvency. In conclusion, the outlined issues collectively underscore the urgent need for comprehensive reforms in the governance, financial management, and performance evaluation of SOEs in South Africa to enhance overall effectiveness in the sector.

2.8 Chapter summary

This chapter provides a comprehensive overview of South African SOEs. It commences by delving into the definition and classification of SOEs as outlined by the PFMA of 2009. The historical context traces the roots of SOEs in South Africa back to the 19th century, driven by

the goal of fortifying local industries against British influence. The apartheid era further witnessed the establishment of SOEs as a response to international sanctions. The legal and regulatory framework governing SOEs includes key documents and laws such as the PFMA, OECD guidelines, the King Report, and the Companies Act. The chapter also explores the capital structure of South African SOEs, emphasising financing options and compliance with PFMA regulations. Turning to financial performance, the discussion highlights the decline of major SOEs attributed to weak corporate governance and outdated business models, resulting in several falling short of investment targets in the 2022/23 fiscal year. The final section critically assesses the corporate governance of SOEs in South Africa, drawing attention to inadequacies identified in the 2014 Presidential Review Committee Report. These include legislative flaws, conflicts, duplication, unclear roles, deficiencies in governance and ownership policies, shortcomings in oversight systems, and lapses in recruiting board members and executives.

CHAPTER 3: LITERATURE REVIEW

3.1. Introduction

This section provides a comprehensive review of the literature on the relationship between capital structure and financial performance of SOEs with a specific focus on incorporating corporate governance. The theoretical framework underpinning this review includes the irrelevance, pecking order, agency, signalling, and trade-off theories. Empirical studies that have been conducted on the relationship between capital structure and financial performance are examined, offering insights into how corporate governance interacts with decisions on capital structure and impact the financial performance of South African SOEs. Various facets of corporate governance are examined, including board diversity and independence, executive remuneration incentives, internal control frameworks, transparency, and legal requirements.

3.2 Theoretical framework

3.2.1 Capital structure theories

Capital structure irrelevance proposition

The irrelevance hypothesis, proposed by Modigliani and Miller (1958), is the first theory that aimed to explain the concept of capital structure. The relevance of the composition of the corporate capital structure has been the subject of debate since the publication of this seminal paper. According to the Modigliani-Miller (M&M) theorem, a company's capital structure does not affect its overall value. Regardless of what proportion of equity or debt a company has, the value of that company is based on its assets and projected future earnings. In other words, any debt-to-equity ratio has no bearing on a company's value. The M&M theory, however, is based on several assumptions, including the existence of a perfectly efficient market, the absence of all risks associated with bankruptcy, taxation, and information asymmetry, and the assumption that all managers share the goal of maximising profits.

The pecking order theory

Myers and Majluf (1984) popularised the pecking order theory of capital structure, which contends that businesses should prioritise their sources of funding based on the cost of financing and reserve the use of equity financing as a last option.

In accordance with the theory, managers think about funding sources hierarchically. According to the pecking order theory, managers prefer the following forms of funding for investment opportunities: first, retained earnings of the company, then debt, and, as a last resort, equity financing. Financing costs increase as information becomes more asymmetric. Equity is a less preferred method of capital raising since investors assume that when managers issue new equity, they take advantage of the company's overvaluation. Investors will, therefore, give the newly issued equity less value.

Trade-off theory

A company chooses how much debt and equity financing to use by balancing the costs and benefits according to the trade-off theory. The traditional version of the hypothesis was developed by Kraus and Litzenberger (1973). Myers and Maljuf (1984) expanded the trade-off theory by adding the "dynamic trade-off theory" concept. According to the dynamic trade-off theory, companies should modify their capital structures over time to account for changes in their business risk and other factors. Additionally, the theory acknowledges that the advantages and disadvantages of debt and equity financing can change over time and that businesses should modify their capital structures accordingly.

The signalling theory

The signalling theory contends that companies use their capital structure to signal investors about their potential performance. The theory, developed by Ross (1977), is based on the notion that a company's choice to pursue debt or equity financing might give investors insight into its growth potential. The fundamental principles of signalling theory are that not all participants in a market have equal access to information about a company's financial health and that businesses can use their capital structure choices to signal to investors how they will perform in the future.

3.2.2. Corporate governance theories

The fundamental pillars of corporate governance, according to Abid and Ahmed (2014), are transparency, accountability, fairness, and disclosure. Examining corporate governance can

provide insight into how agency problems are handled within these organisations, including the independence and composition of the board of directors, executive remuneration incentives, and internal control systems. The practice of corporate governance is supported by the agency theory which is the most widely used conceptual framework to analyse corporate governance.

Agency theory

Early in the 1970s, Barry Mitnick and Stephen Ross proposed the development of the agency theory (Mitnick, 2019). The theory was further developed by (Fama & Jensen, 1983; Jensen & Meckling,1976). The central concept was to model the relationship between owners and managers as between a principal and an agent. According to the agency theory, a principal-agent relationship exists between shareholders and managers. The theory suggests that managers may prioritise their self-interest over the interests of shareholders, and corporate governance systems are necessary to balance the interests of both parties.

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3.3 Empirical framework

A review of empirical research on capital structure, corporate governance, and financial performance of enterprises that have been done globally and in South African non-SOE firms will be presented first in this section. The researcher then narrows the focus to studies explicitly conducted in South Africa, with a specific emphasis on SOEs. The study explores the roles and significance of SOEs, examines the relationship between capital structure and financial performance, and investigates how corporate governance factors influence these entities' capital structure decisions and subsequent financial performance.

3.3.1. Capital structure, financial performance and corporate governance

The extensive exploration of the relationship between capital structure and financial performance has yielded diverse findings, leading to inconsistent conclusions. Scholars such as El-Sayed Ebaid (2009), Edim (2014), Garaba (2017), Riaz (2015), and Titman & Wessels (1988) assert the pivotal role of capital structure in determining a firm’s overall performance. In contrast, Sheikh and Wang (2013) argue for a weak impact of capital structure on financial performance, and Usman (2019) highlights explicitly the influence of equity while dismissing the significance of debt. Vavatu's (2015) research on Romanian companies suggests that

optimal performance is achieved when steering clear of debt and relying on equity. In examining the determinants of capital structure decision-making, Rajan and Zingales (1995) find a correlation between a company's performance and its leverage, identifying an ideal level of debt that enhances performance. However, surpassing this optimal level has a detrimental effect.

The ambiguity persists as some studies reveal a positive association between capital structure and firm performance. For instance, Seyed and Pejman (2013) establish a positive link on the Tehran Stock Exchange. Conversely, Rao et al. (2007) demonstrate a negative correlation between debt levels and financial performance in Omani firms. Ullah et al. (2020) uncover a negative and significant relationship between the debt-to-equity variable and financial performance in Pakistani textile firms. Ahmed et al. (2023) observe a negative relationship among Iranian manufacturing firms on the Tehran Stock Exchange. Mutegi (2016) provides evidence of financial enterprises at the Nairobi Securities Exchange being adversely affected by capital structure, indicating a significant negative association with all performance metrics. Maina and Ishmail (2014) echo this sentiment in South Africa, showcasing a substantial negative association between capital structure and various performance measures. Opoku-Asante et al. (2022) extend this pattern to Ghana and Nigeria, establishing a significant negative relationship between capital structure and the financial performance of firms. Abata et al. (2017) delve into South African listed firms, revealing an inverse relationship between total debt to equity and total debt to total assets with Tobin's Q and return on assets. Meanwhile, long-term debt to total assets shows a positive correlation with Tobin's Q but a negative one with return on assets. Mukaddam and Sibindi (2020) contribute to the discourse by reporting a negative relationship between capital structure and financial performance. The collective body of research thus leaves the relationship between capital structure and financial performance open to interpretation and dependent on various contextual factors.

The impact of corporate governance on capital structure and subsequent financial performance also yields varied results in the existing literature. Numerous studies utilise board size, ownership structure, board composition, and skill to assess corporate governance (Boone et al., 2007; Merendino & Melville,2019; Muchemwa et al.,2017). While some studies, including

those by Meyer (2013), Serobe (2018), and Tshipa (2015), find limited evidence supporting the significant influence of board structure on firm performance, others (Abor & Biekpe, 2006; Okiro et al., 2015; Shahzad, 2022) report a substantial impact of corporate governance on both capital structure and financial performance.

Ronoowah and Seetanah (2023) suggest that well-governed companies are better positioned to take on more debt, potentially fueling profitable projects and increasing overall profits. In line with this, Affes and Jarboui (2023) argue that excellent corporate governance enhances financial performance, as evidenced by higher return on equity. However, Merendino and Melville (2019) caution that ownership structure and composition may have little effect on firm performance, challenging the notion that increased monitoring through concentrated ownership necessarily translates into more robust company performance.

Exploring the impact of corporate governance mechanisms on the efficiency of SOEs in transitioning economies, Curi, Gedvilas, and Lozano-Vivas (2016) indicate that fully government-owned companies can be more efficient, particularly with effective corporate governance practices like a strong board and strategic planning. Conversely, Kaunda and Pelser (2023) investigate the relationship between corporate governance and the performance of SOEs in a least-developed economy, revealing that governance characteristics play a crucial role. Positive influences include favourable board structures, director tenure, reduced government ownership, and lower leverage, while increased state ownership is associated with poorer performance.

The relationship between board composition and financial performance is complex and varied. Studies such as those by Baysinger and Butler (1985) and Mura (2007) suggest a positive correlation between firm performance and board composition, particularly the presence of outside directors. However, Chaganti, Mahajan, and Sharma (1985) find an insignificant relationship, and Bhagat and Black (1999) conclude that the uncertain nature of this relationship is rooted in the differences between boards with a majority of independent directors and those without, which can either increase or decrease firm value.

3.3.2. Capital structure, financial performance, and corporate governance of South African SOEs

In a study on Schedule 2 SOEs consisting of major public entities, Marotholi (2018) finds evidence of the trade-off theory of the advantages of employing debt within a company. According to the report, SOEs can use debt to their advantage. However, they must be cautious not to expand their leverage to the point where their earned value is lost. The report suggests that SOEs should rebalance their debt and equity to maintain an ideal capital structure to ensure that the advantages of employing debt are not diminished. This will help maximise financial performance and efficiently use financial resources. According to Marimuthu (2019), capital structure significantly impacts the financial performance of South African SOEs. Likewise, the study concludes that South African SOEs make financing decisions by the predictions of the trade-off theory.

In a comprehensive examination of corporate governance within South African SOEs, Kikeri (2018) illuminates prevalent challenges in their management and proposes viable enhancements. The study underscores the need to well-articulate SOEs' objectives, ensuring their alignment with national development plans and preventing deviations from their intended focus. It advocates the establishment of robust rules and regulations elucidating the roles, responsibilities, and mechanisms for holding SOEs accountable. Furthermore, the study recommends a paradigm shift in government ownership and control mechanisms, prescribing explicit guidelines for selecting and removing board members. The goal is to foster independence from political interference, a crucial factor in bolstering effective governance. Another key proposal is the requirement for board SOEs' board members and managerial personnel to possess requisite skills and knowledge, subject to regular performance evaluations.

Financial sustainability is critical, urging exploration of avenues such as private investment to ensure adequate funding while emphasising practices. Lastly, the study underscores the crucial need for heightened transparency and accountability in SOE management, encompassing regular reporting, disclosure of financial information, and independent audits. The overarching implication is that adherence to these recommendations can propel South African SOEs toward

improved governance, enhanced performance, and more impactful contributions to the nation's development objectives.

The correlation between executive remuneration and company financial performance remains inconclusive, as Bussin and Carlson (2020) highlighted. Some studies assert a significant relationship, while others negate such a correlation. This uncertainty underscores an agency problem within South African SOEs, where CEOs may receive compensation not commensurate with their performance. Chilenga (2016) further posits that government-appointed members to various SOE boards may not be selected based on merit and expertise but on political considerations. This undue political influence poses a significant threat to the governance of SOEs, potentially impeding their effective performance. The assertion is that addressing these issues is imperative for fostering a governance framework that ensures alignment with performance and minimises external interference, ultimately promoting the success of South African SOEs.

3.4 Chapter summary

The chapter provided an overview of the literature on the relationship between capital structure and financial performance of firms, with a focus on the influence of corporate governance. It explores various theoretical frameworks, including irrelevance theory, pecking order theory, agency theory, signalling theory, and trade-off theory. Empirical studies on this relationship reveal mixed results, with some showing a positive correlation between capital structure and financial performance while others demonstrate a negative relationship. The impact of corporate governance on capital structure and financial performance also varies across studies. Recommendations include the need for South African SOEs to rebalance debt and equity for an optimal capital structure, ensuring clear guidelines for board member selection and independence from political interference.

CHAPTER 4: DESCRIPTION OF DATA AND RESEARCH METHODOLOGY

4.1. Introduction

This chapter thoroughly examines the study's methodology to offer readers a clear understanding of the research design and analytical framework. The key elements include sampling, data collection methods, and the definitions and notations of variables related to capital structure, corporate governance, and financial performance. The chapter also explores the addition of independent control variables to strengthen the robustness of the study. The estimation model, specification of tests for data analysis, and the regression models that were used are all covered in detail in the following sections. In Section 4.2, sampling and data collection techniques are discussed in detail. The definitions and notations of variables are covered in detail in Section 4.3, addressing the use of independent control variables. The research estimation model is described in great length in Section 4.4, providing an overview of the selected data analysis methodology. The test specifications are covered in detail in Section 4.5, which also clarifies the testing process. Finally, Section 4.6 presents a summary of the chapter.

4.2. Sampling and data collection

The study focuses on a sample period from 2010 to 2022. This timeframe was chosen to capture both the aftermath of the global financial crisis of 2008 and the effects of the COVID-19 pandemic. This period was carefully selected to also account for significant economic and political transformations within South Africa; it is expected that these changes could have impacted the financial decisions and performance of SOEs. South African SOEs encountered multiple challenges, including financial mismanagement, corruption, governance erosion, labour disputes, and infrastructure deficiencies, profoundly affecting their performance and reputation.

The study sample comprises 21 SOEs classified as major public entities as listed in the PFMA of South Africa. The availability of financial data for SOEs in South Africa can differ from one entity to another. Nevertheless, certain SOEs, notably those categorised as major entities,

consistently release their financial statements and relevant information. These statements were accessed through the official websites of the SOEs, government reports and databases like Bloomberg and IRESS. The study aims to determine ratios that evaluate the capital structure and performance of the firms using this raw data. Non-financial data was also be gathered, including details on board composition, ownership structure, and executive compensation to incorporate corporate governance factors. This data was sourced from corporate governance reports and company websites.

4.3. Variables

It is feasible to evaluate how financing decisions and corporate governance structures impact the financial performance of SOEs by comparing financial performance indicators across various capital structures and corporate governance scenarios. The independent variables in this study include capital structure and corporate governance, while firm performance is the dependent variable. The capital structure is represented by ratios such as short-term debt to total assets, long-term debt to total assets, and total debt to total assets. Financial performance is measured using proxies such as return on total assets, return on equity, net profit margin, and operating margin. Corporate governance is defined by board composition, executive compensation and ownership structure. In addition, independent control variables include firm size, growth, asset tangibility and government financial assistance. The study also controls the impact of Covid-19. Definitions for these variables are detailed in Table 1.

Table 1:Definition of variables

VARIABLES	DEFINITIONS	SOURCE
Dependent Variables:		
Return on Assets (ROA)	This ratio measures a company's ability to generate income relative to its total assets. It is calculated by dividing the net income by the total assets.	Salim and Yadav (2012)
Return on Equity (ROE)	This ratio measures a company's ability to generate income relative to its shareholder equity. It is calculated by dividing the net income by the shareholder equity.	Kajola (2008)
Net Profit Margin (NPM)	This ratio measures a company's profitability by calculating the revenue percentage after deducting all expenses, including taxes and interest. It is calculated by dividing the net profit by the revenue.	Kusmayadi, Rahman, and Abdullah (2018)
Operating Margin (OM)	This ratio measures a company's operating efficiency by calculating the revenue percentage after deducting only operating expenses. It is calculated by dividing the operating income by the revenue.	Ahmed and Bhuyan (2020)

VARIABLES	DEFINITIONS	SOURCE
Independent Variables:		
Short Term Debt to Total Assets (STDTA)	This ratio calculates the proportion of a company's assets financed by short-term debt. It measures the percentage of total assets financed through loans lasting one year or less.	Mboi et al. (2018); Sheikh & Wang (2013)
Long-Term Debt to Total Assets (LTDTA)	The ratio of the total amount of long-term debt to total assets.	Riaz (2015); Usman (2019)
Total Debt to Total Assets (TDTA)	The ratio of the total amount of debt to total assets.	Tauseef, Lohano, and Khan (2015)
Executive Compensation (EXCOM)	The logarithm of the total remuneration paid to all directors in an accounting year.	Soni and Singh (2020)
Board Composition (BDCOMP)	The ratio of non-executive directors to the total number of directors.	Muchemwa, Padia, and Callaghan (2016)

VARIABLES	DEFINITIONS	SOURCE
Ownership Structure (OS)	The ratio of government's ownership to total ownership of a specific State-Owned Enterprise.	Tran and Dang (2021)
Control Variables:		
Firm Size (SIZE)	The natural logarithm of total assets.	Saraswati and Bernawati (2020)
Growth (GROWTH)	The percentage change in total assets.	Cooper, Gulen, & Schill (2008); Marimuthu (2019)
Asset Tangibility (TANG)	The ratio of fixed assets to total assets.	Marimuthu (2019); Xu, Sun, & Shang (2021)
Government Financial Assistance (GOV)	A dummy variable assigned a value of one when the SOE has received financial support from the South African government; otherwise, it is set to zero.	Marimuthu (2020); PMG (2015)
COVID-19 (COVID)	A dummy variable assigned a value of one for the years 2020, 2021, and 2022; otherwise, it is set to zero.	Deviyanti et al. (2023); Muthu & Wesson (2023)

4.4. Estimation model

The study employs a panel regression approach utilising Pooled OLS, FE, RE and GMM techniques. Pooled OLS is utilised to estimate the connection between financial performance (the dependent variable) and capital structure (the independent variable) while also considering the potential impact of corporate governance factors on the dependent variable. Moreover, the study integrates FE and RE methodologies to address the heterogeneity in the panel data. FE focuses on specific differences for each SOE to understand better how these traits affect the results. At the same time, RE treats these differences as unpredictable and assumes no specific pattern related to the factors being studied, such as capital structure or corporate governance.

However, it is acknowledged that the Pooled OLS, FE, and RE methods might exhibit inconsistency in the presence of endogeneity within the data, as Barros et al. (2020) noted. Therefore, the study employs the GMM approach to tackle these endogeneity concerns. The issue of endogeneity may arise when examining how capital structure affects financial performance, primarily due to the possibility of reverse causality or omitted variable bias. Utilising the GMM methodology helps mitigate these concerns and results in more reliable parameter estimates.

The equations to represent the relationship between the variables are:

$$1.\ ROA_{i,t} = \alpha + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}TDTA_{i,t} + \beta_{i4}BDCOMP_{i,t} + \beta_{i5}EXCOM_{i,t} + \beta_{i6}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$$2.\ ROE_{i,t} = \alpha + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}TDTA_{i,t} + \beta_{i4}BDCOMP_{it} + \beta_{i5}EXCOM_{i,t} + \beta_{i6}OS_{it} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$$3.\ NPM_{i,t} = \alpha + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}TDTA_{i,t} + \beta_{i4}BDCOMP_{i,t} + \beta_{i5}EXCOM_{i,t} + \beta_{i6}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$$4.\ OM_{i,t} = \alpha + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}TDTA_{i,t} + \beta_{i4}BDCOMP_{i,t} + \beta_{i5}EXCOM_{i,t} + \beta_{i6}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

The estimations are carried out in EViews and STATA software versions. This allows for a more thorough investigation, performs relevant diagnostic tests, and reaches reliable results.

4.5. Specification tests

Multicollinearity test:

The Variance Inflation Factor (VIF) evaluates the correlation and strength of relationships among independent variables in a regression model. It quantifies how collinearity contributes to increased variance of estimated regression coefficients. An elevated VIF, notably exceeding 10, signals substantial multicollinearity, indicating a high degree of correlation among variables. In such cases, it becomes essential to consider excluding one variable from the model.

Hausman test:

The Hausman test assesses whether the RE or FE model is more suitable for analysis, specifically focusing on identifying endogeneity within the random effects model. The test entails formulating two hypotheses:

Null Hypothesis: The random effects model does not exhibit endogeneity.
Alternative Hypothesis: Endogeneity is present in the random effects model.

If the computed p-value from the Hausman test is below the selected significance level, typically set at 5%, we reject the null hypothesis that there is no endogeneity. This rejection suggests the presence of endogeneity in the random effects model. Consequently, it implies that opting for the Fixed Effects model is a more fitting approach for addressing endogeneity concerns in panel data analysis.

Breusch–Pagan heteroskedasticity test:

The Breusch-Pagan test examines whether the variability of errors in a regression model changes with different values of independent variables. The existence of heteroskedasticity can introduce bias into standard errors, affecting the reliability of regression results. The test scrutinises the correlation between squared residuals of a regression model and predictor variables, indicating heteroskedasticity if a relationship is observed.

***Null Hypothesis*:** The presence of homoscedasticity (constant variance).
***Alternative Hypothesis*:** The presence of heteroskedasticity (varying variance).
If the p-value falls below a selected significance level (e.g., 0.05), we reject the null hypothesis, signalling the presence of heteroskedasticity.

Sargan tests:

In addressing endogeneity issues in panel data analysis, the two-step GMM model instruments potentially endogenous variables. Sargan tests are employed to assess instrument validity. A significant Sargan test result indicates violations in over-identifying restrictions, signalling concerns about instrument validity. This prompts the need to address potential endogeneity issues in the model.

Arellano-Bond tests:

The Arellano-Bond test detects autocorrelation in panel data models, specifically targeting serial correlation in error terms. Rejecting the null hypothesis of no autocorrelation implies the presence of serial correlation, prompting consideration of appropriate adjustments or alternative models to ensure unbiased coefficient estimates.

4.6 Chapter summary

The chapter offers a thorough overview of the research methodology used in the study, focusing on the analysis of capital structure, corporate governance, and financial performance of SOEs from 2010 to 2022. It outlines the sampling and data collection methods, while also addressing challenges faced by SOEs, including financial mismanagement and corruption. The chapter defines key variables, distinguishing independent variables such as capital structure ratios and

corporate governance factors, with financial performance identified as the dependent variable. Various estimation models, including panel regression techniques like Pooled OLS and GMM, are employed to tackle endogeneity issues. Furthermore, specification tests, such as the Hausman test and Breusch-Pagan test, are applied to confirm the robustness of the findings, ensuring that the analysis accurately represents the relationships among the variables studied.

CHAPTER 5: DATA ANALYSIS AND INTERPRETATION

5.1 Introduction

In this chapter, the primary study objective, initially examined in Chapter 1, is revisited along with a discussion on the anticipated results. The chapter will then present descriptive statistics and regression model findings, analysing the data and assessing the suitability of the models used. Ultimately, the chapter will conclude with a discussion connecting the results to the study's objectives.

5.2 Study objectives and result expectations

The primary objective of this study is to examine the relationship between the capital structure and financial performance of South African SOEs, considering the influence of corporate governance. In light of the PFMA, which mandates SOEs to generate ample financial resources internally, the study confronts prevailing challenges such as an escalating reliance on external funding, government-guaranteed debt, and bailouts. The decline in the financial health of major SOEs is attributed to deficient corporate governance and outdated business models, evident in inadequate governance structures and suboptimal recruitment processes for board members and executives (Halstead et al., 2021). Anticipated are negative correlations between capital structure indicators (STDTA, LTDTA) and financial performance proxies (ROA, ROE, NPM, OM). This implies that an increased dependence on external financing mechanisms may correspond with diminished financial performance indicators. Corporate governance factors are expected to have a positive correlation with financial performance. This indicates that sound governance positively influences a company's financial performance, while poor corporate governance will likely result in a decline in financial performance. Furthermore, sound corporate governance practices are expected to offset the negative impact of capital structure on financial performance. The results section is structured as follows: Section 5.3.1 discusses descriptive statistics. Section 5.3.2 presents the correlation matrix, illustrating the relationships between dependent and independent variables. The results of the regression models evaluating the first and second hypothesis are detailed in Section 5.3.3, while Section 5.3.4 presents the outcomes of the interaction terms, specifically assessing the third hypothesis. Section 5.4 discusses the results, followed by a chapter summary in Section 5.5.

5.3 Results

5.3.1 Descriptive statistics

Table 2 summarises key statistics related to South African SOEs' financial performance, capital structure, and control variables. Notably, the data highlights the debt composition, with a mean STDTA of 0.0870, indicating a relatively small reliance on short-term debt. In contrast, the mean LTDTA is 0.1762, suggesting a higher dependence on long-term debt. The mean TDTA at 0.2633 implies that, on average, approximately 26.33% of SOEs' assets are financed through debt, emphasising a preference for long-term financing, which may have implications for financial stability and risk management. However, the financial performance metrics reveal challenges faced by the SOEs. The mean ROA is -0.0175, indicating insufficient returns to cover costs. Although the mean ROE is 0.2837, a high standard deviation suggests significant variability in performance within the sample, signifying an inconsistency in generating income relative to assets and shareholder equity.

Further emphasising financial difficulties, profitability metrics highlight a mean NPM of -0.0557, indicating that, on average, SOEs struggle to generate sufficient profit from their revenue. This could be attributed to high operating costs, inefficient management practices, or poor financial performance. Moreover, the mean OM of -0.00970 suggests that, on average, SOEs are not effectively managing their operating expenses.

On a positive note, the analysis of BDCOMP indicates a relatively stable and diverse average board. This aligns with expectations for effective decision-making, robust oversight, and reduced conflicts of interest. A balanced board, including a mix of executive and non-executive directors, is crucial for maintaining transparent governance structures.

Turning attention to executive compensation, the mean value of EXCOM is 9,6099, with a skewed distribution as indicated by the lower median (9,5762) compared to the mean. This suggests considerable variability in executive compensation among SOEs, raising potential concerns regarding income inequality, morale, and alignment of executive interests with organisational goals. Such distribution patterns may signal governance and oversight issues, impacting capital structure decisions and financial performance. Addressing these disparities

and governance concerns is essential for ensuring the stability and success of South African SOEs.

Table 2:Summary statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
ROA	-0.0175	-0.0071	0.8149	-0.5528	0.1276	254
ROE	0.2837	0.0373	43.9699	-4.7569	3.215	254
NPM	-0.0557	0	3.8792	-8.6381	0.7095	254
OM	-0.097	0	1.1427	-10.278	0.7454	254
STDTA	0.087	0.0297	0.6656	0	0.1487	254
LTDTA	0.1762	0.0691	0.9966	0	0.2288	254
TDTA	0.2633	0.1912	1.117	0	0.282	254
BDCOMP	0.162	0.1667	1	0	0.0869	254
EXCOM	9.6099	9.5762	11.744	0	1.0751	254
OS	0.943	1	1	0.393	0.1484	254
TANG	0.3443	0.2582	0.9375	0.0001	0.3024	254
SIZE	16.4055	16.3951	20.5284	12.6215	1.8811	254
GROWTH	6.3809	3.6806	210.1598	-33.1859	25.8023	254

5.3.2 *Correlation matrix*

The matrix indicates a substantial correlation of 0.8507 between TDTA and LTDTA. Hence, TDTA will be excluded from the regression models to alleviate the impact of multicollinearity, and only STDA and LTDA will be considered. The correlation matrix highlights significant correlations that warrant attention. A significant positive correlation of 0.1642 exists between LTDTA and ROA. Similarly, a notable positive correlation is found between STDTA and NPM, as well as between LTDTA and OM. Additionally, EXCOM demonstrates a strong positive relationship with NPM, OM and LTDTA. Furthermore, the control variables illustrate a strong positive relationship with both ROA and OM. Conversely, the matrix indicates a strong negative correlation between OS and ROA, while SIZE also shows a significant negative correlation with BDCOMP.

Table 3: Correlation matrix

Correlation	ROA	ROE	NPM	OM	STDTA	LTDTA	TDTA	BCOMP	EXCOM	OS	TANG	SIZE	GROWTH
ROA	1												
ROE	-0.0269	1											
NPM	0.5039***	0.034	1										
OM	0.5864***	0.0135	0.8591***	1									
STDTA	-0.077	0.0191	0.0528***	0.0483	1								
LTDTA	0.1642***	-0.0512	0.1436**	0.1690***	0.0742	1							
TDTA	0.0927	-0.0315	0.1444**	0.1626***	0.5874	0.8507***	1						
BDCOMP	-0.1085*	0.0308	0.0709	0.096	0.0267	-0.1489**	-0.1068*	1					
EXCOM	0.1350	-0.0427	0.1570**	0.1687**	0.0380	0.2113***	0.1916**	-0.1121	1				
OS	-0.2307***	-0.0294	-0.0204	-0.075	0.1356**	0.0445	0.1076*	-0.0323	-0.1136*	1			
TANG	0.2515***	-0.0069	0.0322	0.1623***	-0.2591***	0.022	-0.1187*	0.1225*	0.1669***	-0.4535***	1		
SIZE	0.2423***	-0.0881	0.1904***	0.2051***	0.1452**	0.5952***	0.5596***	-0.1673***	0.5125	-0.0814	0.2524***	1	
GROWTH	0.2474***	0.0400	0.1772***	0.1929***	-0.0161	0.0347	0.0197	-0.1398**	-0.008	0.1045*	-0.0563	0.0276	1

*** 1% level of significance, ** 5 % level of significance, *10% level of significance

5.3.3 Regression models

To ensure data quality reliability, the Durbin-Watson test detected autocorrelation, which was corrected by introducing a one-period lag of the dependent variable to the independent variables. After addressing multicollinearity and autocorrelation, the final equations used in the regression models are presented below:

$$5.\ ROA_{i,t} = \alpha + ROA_{i,t}(-1) + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}BDCOMP_{i,t} + \beta_{i4}EXCOM_{i,t} + \beta_{i5}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$$6.\ ROE_{i,t} = \alpha + ROE_{i,t}(-1) + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}BDCOMP_{i,t} + \beta_{i4}EXCOM_{i,t} + \beta_{i5}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$$7.\ NPM_{i,t} = \alpha + NPM_{i,t}\,(-1) + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}BDCOMP_{i,t} + \beta_{i4}EXCOM_{i,t} + \beta_{i5}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$$8.\ OM_{i,t} = \alpha + OM_{i,t}(-1) + \beta_{i1}STDTA_{i,t} + \beta_{i2}LTDTA_{i,t} + \beta_{i3}BDCOMP_{i,t} + \beta_{i4}EXCOM_{i,t} + \beta_{i5}OS_{i,t} + SIZE_{i,t} + GROWTH_{i,t} + TANG_{i,t} + COVIDi + GOVi,t + \delta i + \varepsilon_{i,t}$$

$ROA_{i,t}(-1), ROE_{i,t}(-1)\ , NPM_{i,t}\ (-1)\ and\ OM_{i,t}(-1)$ are lagged dependent variables added to the regression model to correct for autocorrelation.

The findings from the FE model in Table 4 indicate that lagged dependent variables demonstrate statistically significant relationships with financial performance indicators. Specifically, the persistence of past performance is evident, as indicated by the statistically significant positive effect of lagged NPM, highlighting the enduring influence of historical net profit margin on current profitability. Similarly, OM exhibits statistical significance at the 1% level, underlining

the lasting impact of past operational efficiency on current SOE performance. Consequently, SOEs with a robust historical net profit margin are more likely to maintain favourable margins in the present period. However, the results regarding the relationship between capital structure and financial performance are mixed. Despite expecting a negative relationship, the study observes both positive and negative relationships that are statistically insignificant, suggesting that STDTA and LTDTA do not significantly affect financial performance.

Shifting focus to corporate governance factors, BDCOMP shows a positive yet insignificant relationship with financial performance, indicating that board composition may not directly influence SOE performance. Conversely, executive compensation demonstrates a significant positive relationship with ROA, NPM, and OM at a 1% significance level. A 1% increase in EXCOM leads to an increase of 0.0104, 0.0300 and 0.0529 in ROA, NPM and OM, respectively, while OS shows a statistically significant negative relationship with ROA and OM.

Additionally, examining control variables, SIZE exhibits a negative relationship with ROA; specifically, a 1% increase in SIZE leads to a -0.0473 decrease in ROA, implying that larger SOEs may have invested excessively in unprofitable assets. Similarly, the negative relationship between GROWTH and ROE is potentially attributed to SOEs with higher growth rates having more assets involved in revenue generation, leading to lower efficiency in managing shareholder investments for profit. TANG shows a 10% statistically significant association with ROA. Government financial assistance displays a significant negative relationship with ROA, indicating that reliance on government financial support may adversely affect SOE profitability and efficiency. The impact of the COVID-19 pandemic demonstrates a significant effect on ROA.

The GMM model exclusively focuses on ROA, providing insight into how effectively a company utilises debt and equity financing. The results of the GMM model indicate a negative relationship between STDTA and ROA, while LTDTA reveals a positive relationship with ROA. The FE model also observes this positive relationship between LTDTA and ROA. However, the relationships between capital structure variables and financial performance are insignificant. Turning to corporate governance variables, the GMM model presents contrasting results. Board

composition shows a negative significant relationship with ROA; positive insignificant relationships are noted in ownership structure and executive compensation with ROA.

Addressing the study objectives, the findings regarding the relationship between capital structure and financial performance are varied and lack statistical significance contradicting the expected outcome of a negative significant relationship. Mixed results are observed in the relationship between corporate governance and financial performance, with only board composition indicating a significant negative relationship with ROA. These results contradict the expected outcome of a positive relationship between corporate governance and financial performance.Table 4 presents results from the regression models.

Table 4: Regression results: Relationship between capital structure, corporate governance and financial performance

	FE MODEL				**GMM MODEL**
Variable	ROA	ROE	NPM	OM	ROA
ROA (-1)	0.1647 (0.1498)				-0.1429* (0.0732)
ROE (-1)		-0.1250* (0.0609)			
NPM (-1)			0.3229*** (0.0280)		
OM (-1)				0.2799*** (0.0191)	
STDTA	0.0165 (0.1436)	0.9464 (0.8876)	-0.0326 (0.3054)	0.0347 (0.2611)	-0.0579 (0.2215)
LTDTA	0.1066 (0.0874)	0.4947 (0.7807)	-0.4541 (0.2899)	0.1941 (0.2085)	0.2416 (0.1794)
SIZE	-0.0473** (0.0166)	-0.0955 (0.0814)	0.0290 (0.0397)	0.0034 (0.0315)	0.0122 (0.0185)
GROWTH	0.0001 (0.0003)	-0.0025** (0.0011)	-0.0001 (0.0011)	0.0007 (0.0007)	0.0013*** (0.0004)
TANG	0.1813* (0.1039)	-0.9828 (1.1053)	0.1521 (0.2438)	0.4354 (0.2741)	0.1341 (0.1378)
BDCOMP	0.1155 (0.1110)	0.0369 (1.2494)	0.2878 (0.3128)	0.1143 (0.1669)	-0.1437* (0.0855)
OS	-3.6982** (1.5416)	-8.7949 (9.4819)	0.4578 (7.2839)	-8.1308* (4.1341)	0.0067 (0.1555)

EXCOM	0.0104***	0.0128	0.0300***	0.0529***	0.0133
	(0.0035)	(0.0704)	(0.0066)	(0.0069)	(0.0121)
GOV	-0.0166**	0.2248	0.0690	0.0226	-0.0068
	(0.0069)	(0.2111)	(0.0688)	(0.0672)	(0.0178)
COVID	0.0218*	-0.0583	0.0055	0.0610	-0.0437**
	(0.0108)	(0.0636)	(0.0804)	(0.0437)	(0.0210)
_CONS	4.1188**	10.4540	-1.0927	7.0004*	-0.4170
	(1.4707)	(8.9480)	(7.2324)	(3.8479)	(0.3933)
No. of observations	233	233	233	233	233
Prob	0.0000***	0.0000***		0.0000***	0.0000***
R-squared:					
within	0.1991	0.0228	0.3120	0.5013	
between	0.0362	0.0454	0.1033	0.0311	
overall	0.0214	0.0004	0.2368	0.0331	
Hausman Test:					
Prob	0.0000***	0.0000***	0.0144**	0.4196	
Chi-Sq statistic	53.1430	43.6472	23.6310	11.2857	
Sargan Test:					
Prob					0.0000***
Chi-Sq					136.5548
Arellano-Bond Test(autocorrelation):					
z					0.7998
Prob>z					0.4238

Standard errors are in parentheses: ***1% significance level; ** 5% significance level; *10% significance level.

5.3.4 Interaction terms

The study incorporates interaction terms in the regression analysis to examine the role of corporate governance in the relationship between capital structure and the financial performance of SOEs. The FE model indicates that STDTA interaction with board composition (STDTA*BDCOMP) positively affects ROA and OM at a 1% significance level. In contrast, interaction with executive compensation and ownership structure show no significant impact on financial performance. LTDTA interaction with corporate variables does not significantly impact financial performance. The GMM model presents an insignificant impact on financial performance when capital structure variables are interacted with corporate governance variables. However, it is noted that both models indicate that board composition positively affects financial performance when interacting with short and long-term debt ratios. Table 5 shows the regression results with the interaction terms.

Table 5: Regression results: Interaction of corporate governance and capital structure factors on financial performance

	FE MODEL				GMM MODEL
Variable	ROA	ROE	NPM	OM	ROA
ROA (-1)	0.2547** (0.1024)				-0.1008 (0.0873)
ROE (-1)		-0.1642** (0.0616)			
NPM (-1)			0.2911*** (0.0131)		
OM (-1)				0.2931*** (0.0140)	
STDTA*BDCOMP	1.5118*** (0.5116)	-13.0447 (12.6822)	-3.2535 (5.8446)	2.5950*** (0.9025)	0.6288 (0.6311)
STDTA*EXCOM	-0.0290 (0.0463)	1.0033 (0.7485)	0.0035 (0.1786)	0.0093 (0.1191)	-0.0646 (0.0457)
STDTA*OS	0.1004 (0.5505)	-6.9551 (5.8966)	0.6515 (1.7196)	-0.2402 (1.1170)	0.4891 (0.4742)
LTDTA*BDCOMP	0.0690 (0.3583)	9.4903 (8.3563)	10.0583 (8.0068)	0.0611 (0.7768)	0.0268 (0.3837)
LTDTA*EXCOM	0.0196	0.4848	0.1029	-0.0020	0.0435

	(0.0114)	(0.5564)	(0.1239)	(0.0271)	(0.0294)
LTDTA*OS	-0.2020	-6.8140	-3.0762	0.1567	-0.1856
	(0.1962)	(5.4406)	(2.3218)	(0.2840)	(0.2787)
SIZE	-0.0088	-0.2007*	-0.0140	-0.0534	0.0202
	(0.0159)	(0.0963)	(0.0556)	(0.0455)	(0.0150)
GROWTH	0.0010*	0.0055	0.0019**	0.0018	0.0012***
	(0.0005)	(0.0031)	(0.0009)	(0.0011)	(0.0004)
TANG	0.1264	-0.3798	0.0378	0.3706	0.1545
	(0.1265)	(1.4860)	(0.2571)	(0.3250)	(0.1226)
GOV	-0.0280*	0.1286	-0.1381*	-0.1287	-0.0147
	(0.0154)	(0.3049)	(0.0728)	(0.1097)	(0.0211)
COVID	-0.0293**	-0.1403	-0.1489	-0.1012*	-0.0485**
	(0.0125)	(0.1158)	(0.0910)	(0.0521)	(0.0202)
_CONS	0.0781	3.6490*	0.3094	0.6875	-0.4455*
	(0.2839)	(1.9609)	(0.9449)	(0.8067)	(0.2401)
No. of observations	233	233	233	233	233
Prob	0.0000***	0.0073***	0.0000***	0.0000***	0.0001***
R-squared:					
within	0.2510	0.0435	0.3552	0.5011	
between	0.1848	0.0784	0.0379	0.3798	
	0.2277	0.0115	0.1370	0.4544	
overall					

Hausman Test: Prob Chi-Sq statistic	 0.1855 14.9300	 0.0168** 23.1600	 0.0248** 21.9400	 0.8785 5.9200	
Sargan Test: Prob Chi-Sq					 0.0000*** 129.7835
Arellano-Bond Test(autocorrelation): z Prob>z					 0.8885 0.3743

standard errors are in parentheses; ***1% significance level; ** 5% significance level; * 10% level of significance.

5.4 Discussion of results

5.4.1 Capital structure and financial performance

Determining determinants influencing South African SOEs' financial performance has been a critical focus in research, particularly examining factors shaping their financial performance (Marimuthu et al., 2023). The study reveals contrasting results. The FE model shows that short- and long-term debt use is associated with improved overall financial performance, as ROA, ROE, and OM indicate. However, the negative correlation between STDTA and LTDTA with NPM implies that higher levels of debt, both short and long-term, may lead to reduced profitability in the long term. Previous research supports this notion by suggesting that judicious use of debt can positively impact performance, while excessive reliance on debt may lead to reduced profitability in the long run (Rajan & Zingales, 1995). The GMM model suggests that an increase in STDTA results in a decrease in ROA, while LTDTA shows a positive influence on ROA, albeit with insignificant relationships. The contrasting relationships between capital structure proxies and financial performance measures imply that South African SOEs must delicately manage debt utilisation to attain short-term performance objectives while considering the potential long-term repercussions on profitability and financial stability. Notably, STDTA and LTDTA do not attain statistical significance at all levels in both the FE and GMM models, thereby failing to reject the null hypothesis of the first hypothesis.

Various studies also present contrasting findings. Seyed and Pejman (2013) find a significant positive relationship between capital structure and firm performance on the Tehran Stock Exchange. Conversely, research on South African listed firms by Abata et al. (2017) reveals a negative relationship between debt/equity ratio and firm performance. A study on Pakistani non-financial sector firms by Aziz and Abbas (2019) discovers a negative correlation between company performance and both short-term and long-term debt, indicating a significant and adverse impact. Sibindi (2020) on South African retail firms identifies a negative relationship between capital structure and financial performance. Previous research trends consistently highlight a negative correlation between capital structure and financial performance (Mutegi,2016; Rao et al.,2007; Ullah et al.,2020). These findings suggest that higher debt levels in a company's capital structure may lead to decreased profitability and performance due to increased financial constraints and associated costs. The research findings underscore the

intricate relationship between capital structure and financial performance of South African SOEs. The evidence suggests that the capital structure of SOEs can yield both positive and negative implications for their financial performance.

The findings in this study can be viewed through both the pecking order theory and the trade-off theory. The pecking order theory suggests that firms prioritize internal financing over external debt, while the trade-off theory argues that companies should maintain a balance between debt and equity to optimize their financial structure. However, SOEs frequently rely on government bailouts during financial challenges instead of strategically managing debt and equity. This reliance on government support often leads to suboptimal capital structures and inefficient financial management, which may explain the absence of a clear relationship between financial performance and capital structure. Consequently, these findings highlight the necessity of integrating corporate governance factors for a more comprehensive understanding of the factors influencing the capital structure and financial performance of SOEs in South Africa.

5.4.2 Corporate governance and financial performance

For enhanced corporate governance in SOEs, Kikeri (2018) recommends a board composition predominantly consisting of non-executive directors, emphasising a majority being independent. According to early research by Fama and Jensen (1983), independent directors are pivotal in overseeing corporate decision-making, especially monitoring managerial actions and aligning them with shareholder interests. They argued that independent directors could effectively scrutinise managers and enhance firm value. Lee, Rosenstein and Rangan (1992) support this perspective, presenting evidence that boards primarily composed of outside/independent directors yield better returns than those dominated by internal/executive directors. Non-executive directors are expected to grasp the company's interests objectively and can critically challenge its direction and performance (Siladi, 2006). However, in this study, the FE model indicates that the correlation between board composition and financial performance is insignificant in South African SOEs. In contrast, the GMM model presents a negative significant result suggesting that executive directors might hold too much power relative to

non-executive directors, and there may be reduced oversight, leading to potential misconduct, corruption, or inefficient use of resources.

The significant negative correlation between board composition and ROA is in line with the agency theory, which suggests that conflicts of interest between management and stakeholders can lead to inefficiencies. Weak governance structures may limit SOEs' ability to optimize capital structure, ultimately negatively impacting financial performance. The findings indicate that improving corporate governance practices could help address these issues, reinforcing recommendations from the King Report on Corporate Governance in South Africa.

The results of the FE model reveal a positive and significant relationship between EXCOM and financial performance, particularly with ROA, ROE, and OM. While there may be a positive trend, the impact of executive remuneration on return on assets is not statistically significant in the GMM model. This positive relationship aligns with the agency theory and supports prior research, suggesting that when managers prioritise higher income, they also tend to prioritise the overall interests of the firm. This, in turn, helps reduce agency costs and foster a commitment to the company's benefit. The idea here is consistent with the notion that managers focused on achieving high financial performance are likely to act in the best interests of the organisation (Bebchuk & Fried, 2003; Wang et al., 2021). These findings contrast with Marimuthu (2019), who finds an inverse relationship between executive remuneration and financial performance.

Additionally, the FE model uncovers a significant negative relationship between OS and ROA. This suggests that increased government ownership is associated with reduced profitability and efficiency. Kaunda and Pelser (2023) argue that the performance of SOEs is positively affected by factors such as board structures, director tenure, reduced government ownership, and lower leverage. Conversely, an increase in state ownership is associated with below-average performance. The research also emphasises that the presence of civil servants and directors with political affiliations in government-controlled companies has a detrimental impact on enterprise value. Chilenga (2016) supports this perspective, suggesting that the selection of government shareholders for SOE boards may be influenced more by political connections than by skills,

potentially leading to political interference that compromises essential board functions such as audit, risk management, and remuneration. The research underscores that appointments based on political affiliations can perpetuate a system of patronage within SOE operations, creating an environment conducive to corruption. The appointment of boards in wholly owned government entities may contribute to the deterioration of financial performance in SOEs.Chilenga (2016) also highlights the importance of merit-based appointments and the independence of SOE boards from political influence as essential factors for ensuring effective governance and performance. However, the GMM model in the present study showcases an insignificant relationship between OS and ROA, suggesting that higher government ownership in SOEs does not necessarily lead to higher financial performance.

The mixed findings between corporate governance and financial performance variables invalidate the second hypothesis, it underscores the complexity of factors influencing financial performance beyond just board composition, executive compensation and ownership structure.

5.4.3 Control variables

SIZE shows a significant negative correlation with ROA and lacks significant correlations with other financial performance indicators. This inverse relationship might suggest mismanagement and prioritisation of self-interest over firm value optimisation. This has been observed particularly within South African SOEs, where concerns about mismanagement have emerged, especially in the context of State Capture allegations. Several studies and reports, such as those by the IMF (2022), Marimuthu (2021; 2023), and PMG (2015), shed light on this relationship and its potential implications. The findings suggest that mismanagement and potential diversion of resources by SOEs' board and executive management might compromise their financial sustainability and intended resource utilisation.

In the FE model, there is a notable adverse correlation between GROWTH and ROE, while in the GMM model, a substantial negative association is observed between GROWTH and ROA. Inadequate corporate governance may give rise to inefficiencies, a lack of transparency, and insufficient oversight, affecting the SOEs' capacity to utilise assets and efficiently generate profits. Consequently, a substantial unfavourable link between GROWTH and ROE may

emerge, prompting concerns about the SOE's financial efficacy. The World Bank Group (2020) emphasises that deficient oversight and regulations can result in mismanagement, corruption, and underperformance in SOEs, leading to substantial public fiscal losses and impeding the attraction of private investment. Additionally, as the World Bank Group noted, poor corporate governance can erode shareholder trust, diminish stock value, and trigger heightened government scrutiny, further impacting the company's performance and reputation. Such a trend might suggest that SOEs face challenges in managing growth efficiently, potentially due to issues related to resource allocation, management capabilities, or the misalignment of goals between growth and profitability. Conversely, a strong focus on growth without adequate attention to profitability could lead to suboptimal outcomes for SOEs, particularly given their role in driving national development and economic progress.

Numerous studies present conflicting findings regarding the association between asset tangibility and financial performance. For instance, Irungu, Muturi, Nasieku, and Ngumi (2018) identify a positive and substantial link between asset tangibility and financial performance in listed firms on the Nairobi Securities Exchange. In contrast, Marimuthu et al. (2023) demonstrate a negative relationship between asset tangibility and financial performance. This study reveals a positive correlation between TANG and ROA, NPM, and OM in the FE model and a positive relationship between TANG and ROA in the GMM model, suggesting that a higher proportion of tangible assets may enhance operational efficiency and profitability. However, the FE model shows an adverse association of TANG with ROE, implying that an increase in asset tangibility is linked to a decrease in ROE, suggesting that while tangible assets may improve certain aspects of financial performance, they might adversely impact shareholder returns. Nonetheless, regression model results indicate that TANG exerts no significant impact on the financial performance of SOEs, highlighting the overall lack of statistical significance in the influence of asset tangibility on the financial performance of SOEs in South Africa.

SOEs often receive government guarantees and subsidies, which can distort their financial performance and lead to inefficiencies (Harris et al., 2020). This study indicates a negative correlation between GOV and ROA, suggesting that government assistance in the form of guarantees and subsidies adversely affects the financial performance of SOEs, as emphasised

by the International Monetary Fund (2022). Marimuthu (2021) further highlights that government support, in the form of guarantees and subsidies, significantly impairs the financial performance of SOEs in South Africa. This underscores the notion that continuous government bailouts exacerbate poor financial performance among SOEs, fostering dependency on government assistance and burdening the national treasury. The adverse impact of government financial assistance on firm performance is corroborated by Assagaf and Ali (2017), who find that Indonesian SOEs' financial performance heavily relies on government subsidies. However, this support negatively affects performance, as management focuses more on meeting government targets to improve services, neglecting financial considerations.

The impact of the COVID-19 pandemic on the financial performance of South African SOEs appears insignificant in the FE model, suggesting that the pandemic did not significantly affect their performance. However, other factors played a more substantial role. Harris et al. (2020) also highlight this perspective in the report on government support for SOEs in sub-Saharan Africa. The report indicates that even before the pandemic, many SOEs faced financial challenges, including being unprofitable, burdened with debt, and dependent on government funding for sustainability, which mirrors the situation of South African SOEs. In contrast, the GMM model showcases a significant negative impact of COVID-19 on financial performance; this finding aligns with Aifuwa et al. (2020).

5.4.4 Corporate governance role in the relationship between capital structure and financial performance

Recent research by Ronoowah and Seetanah (2023) highlights that the combined influence of corporate governance and capital structure contributes to enhancing firms' profitability. However, when managerial control is delegated to executives, a potential conflict arises as managers may prioritise their interests over those of the true owners (Jensen & Meckling, 1976). To safeguard investors, mechanisms such as the board of directors have been established, playing a crucial role in overseeing and disciplining managers to align their actions with investor interests (Nguyen et al., 2017). This potential conflict between managers and investors can significantly impact capital structure decisions, subsequently affecting financial performance. If managers prioritise their interests, they may opt for financing options that yield

short-term benefits but are suboptimal for investors and overall firm profitability. Self-interest-driven managers may make capital structure decisions that expose the company to unnecessary risks, potentially impacting financial performance. The effectiveness of corporate governance mechanisms, such as the board of directors, becomes crucial in mitigating these conflicts. A robust board helps align managerial decisions with shareholder interests, ensuring that capital structure decisions contribute to the company's long-term performance.

The GMM model reveals that the interaction between capital structure and corporate governance variables has an insignificant impact on financial performance. Specifically, when BDCOMP and EXCOM interact with STDTA and LTDTA, a positive yet statistically insignificant relationship with ROA emerges. These insignificant relationships of interaction terms on financial performance suggest that corporate governance mechanisms may not be robust enough to effectively enhance debt use for improving SOEs' profitability.

5.5 Chapter summary

The chapter provides a detailed analysis of South African SOEs' financial performance, capital structure, and control variables. It presents descriptive statistics, highlighting the SOEs' reliance on long-term debt and their challenges in generating sufficient returns and managing operating expenses. The chapter then discusses the correlation matrix results, indicating a substantial correlation between TDTA and LTDTA, leading to the exclusion of TDTA from the regression models. The results from the regression models show the persistence of past performance and mixed relationships between capital structure, corporate governance factors, and financial performance. Additionally, the effectiveness of corporate governance mechanisms in boosting debt use to enhance SOEs' profitability may be limited. The chapter concludes with a discussion of the results, emphasising the complex interplay of various factors in influencing the financial performance of South African SOEs, including capital structure and corporate governance.

CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides an overview of the findings from preceding chapters and outlines the conclusions derived from the study findings. Additionally, it offers policy recommendations to achieve enhanced financial performance for SOEs in South Africa. The study's limitations are acknowledged, and lastly, it proposes areas for future research studies that could be valuable for upcoming scholars.

6.2 Summary of findings

The introductory chapter of this study establishes the context and significance of SOEs within South Africa's economy, addressing concerns such as inadequate financial performance and governance. Chapter two delves deeply into the SOE environment, providing historical context and discussing challenges like inconsistent leadership. Successfully meeting the study's objectives, this chapter determines South African SOEs' current capital structure composition and evaluates their financial performance in profitability, liquidity, and solvency. It also outlines the legal and regulatory framework governing SOEs, encompassing key documents and laws such as the PFMA, OECD guidelines, the King Report, and the Companies Act. The discussion emphasises the hurdles SOEs encounter, such as weak governance, outdated business models, and the necessity for legislative improvements. Chapter three critically assesses the literature on the correlation between capital structure, financial performance, and corporate governance of South African SOEs, offering a comprehensive understanding of theoretical and empirical frameworks. It explores capital structure theories and corporate governance pillars, emphasising their significant influence on SOEs' decision-making processes. Chapter five addresses the objectives of investigating the correlation between capital structure and financial performance of South African SOEs, identifying key factors, including corporate governance, influencing capital structure decisions of South African SOEs, and examining how corporate governance factors such as board composition, executive compensation, and ownership structure affect the relationship between capital structure and financial performance of South African SOEs. The chapter unveils data analysis, which reveals no significant relationship

between capital structure variables and financial performance but a significant negative relationship between board composition and return on assets. These findings underscore the impact of board composition, a corporate governance measure, on South African SOEs' financial stability. Nevertheless, when these corporate governance factors interact with capital structure variables, their influence on financial performance is insignificant.

6.3 Conclusions

The primary objective of the study was to explore the relationship between the capital structure and financial performance of SOEs in South Africa, specifically focusing on incorporating the impact of corporate governance into this analysis. The study employed a sample comprising 21 significant SOEs, covering 2010 to 2022. Although the research did not establish a significant correlation between capital structure and financial performance, it emphasised the importance of effective corporate governance mechanisms. The results underscore the complexities of governance frameworks within SOEs when making sound financing decisions and their potential consequences for financial performance. This emphasises the need for balanced board compositions and robust oversight mechanisms to prevent misconduct or inefficiencies. The alignment of executive interests with SOE operations is crucial in managing risks associated with capital structure decisions and promoting wise financing choices, ultimately contributing to improved financial performance for SOEs. The diverse findings regarding the correlation between corporate governance and financial performance suggest the intricate nature of this relationship within SOEs. While executive compensation seems to have a positive influence, careful attention is necessary concerning board composition and the distribution of authority among directors.

In examining the effect of corporate governance on capital structure in influencing financial performance of SOEs, the lack of significance in the relationships among interaction terms suggests that existing corporate governance frameworks may not effectively encourage the utilisation of debt to enhance SOE profitability.

6.4 Policy recommendations

The research results are essential for stakeholders, such as the government, policymakers, regulatory authorities, the South African public, and fellow researchers. SOEs are advised to adopt and uphold corporate solid governance measures of transparency, accountability, fairness, and disclosure. This strategy can provide insights into how organisations tackle agency issues, covering board independence, executive compensation, and internal control systems. Executive appointments in SOEs should prioritise merit over political affiliations, aiming to achieve an optimal capital structure, efficient resource allocation, and strategic investments for enhanced financial performance. The government must support SOEs as drivers of economic growth and development. Still, in light of the negative association between financial performance and government support, such support should be guided by a clearly defined funding policy.

6.5 Limitations of the study

While the study offers valuable insights, it is essential to recognise its challenges, which affect how we interpret its findings. The study relied on a sample of major South African SOEs, which limits its ability to capture the unique situations of each SOE. Each SOE operates in its environment with specific rules, operations, and governance frameworks. Consequently, the findings might not fully represent individual SOEs' diverse challenges, limiting the study's ability to provide widely applicable recommendations.

Furthermore, the study focused solely on South African SOEs, which raises concerns about how applicable its findings are to other countries or industries. The regulations and frameworks governing SOEs in South Africa may not translate well to different contexts, reducing the study's external validity and the broader relevance of its recommendations.

Additionally, obtaining sufficient financial information on some SOEs from the IRESS database for the entire sample period proved challenging. This lack of information could undermine the reliability and validity of the panel data analysis results, weakening the overall strength of the study.

Moreover, the study did not thoroughly explore all the factors influencing the relationship between capital structure and financial performance in South African SOEs. Key macroeconomic variables, such as interest and exchange rates, were not considered, significantly affecting SOEs' ability to access debt funding and overall financial performance. This omission limits the study's ability to understand the dynamics at play comprehensively.

Furthermore, the study did not assess the effectiveness of risk management and internal control systems within SOEs as part of their corporate governance framework. Exploring these factors could provide deeper insights into how they influence capital structure decisions and financial performance.

6.6 Suggestions for future research

Further exploration of this subject in future research could involve an examination of financial SOEs, given that the present study exclusively concentrated on non-financial SOEs. Additional investigations should scrutinise the effectiveness of internal control and risk management functions within SOEs, considering the integral elements of their corporate governance structure. It is imperative for upcoming research to consider significant macroeconomic factors like interest rates and currency rates, as they profoundly influence the ability of SOEs to secure debt financing and impact their overall financial success.

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APPENDICES

Table 6:List of Schedule 2 entities

	COMPANY	INDUSTRY
1	Air Traffic and Navigation Services Company	Aviation
2	Airports Company	Airline
3	Alexkor Limited	Mining
4	Armaments Corporation of South Africa	Defence
5	Broadband Infrastructure Company (Pty) Ltd	Telecommunications
6	CEF Pty (Ltd)	Energy
7	DENEL	Defence
8	Development Bank of Southern Africa	Development Finance
9	ESKOM	Energy
10	Independent Development Trust	Social Development
11	Industrial Development Corporation of South Africa Limited	Development Finance
12	Land and Agricultural Bank of South Africa	Development Finance
13	SA Broadcasting Corporation Limited	Information Services
14	SA Forestry Company Limited	Forestry
15	SA Nuclear Energy Corporation	Nuclear Energy
16	SA Post Office Limited	Postal Services
17	South African Airways Limited	Airline
18	South African Express (Pty) Limited	Airline
19	Telkom SA Limited	Telecommunications
20	Trans-Caledon Tunnel Authority	Water Infrastructure
21	Transnet Limited	Transport

Source: National Treasury (2015).

Table 7: Classification of forms of SOE financing

Possible sources of SOC financing	**Options for self-financing of state-owned companies**	
Self-financing		
	Basic self-financing capacity	**State 'enhancements'**
	Revenue from the provision of Goods and services.	Allowing higher fees or tariffs
		Lower dividend requirements
		Tax exemptions.
	Debt financing from loans or bonds	Debt guarantees
	Selling shares to private investors	Allow funds to accrue to SOC. (equivalent to equity injection)
Direct state financing **Source: PMG (2015)**	Equity injection/cash transfer [equivalent if the state owns 100%] Transfers/incentives for specific activities Provision of loan financing	

***Table 8*:Combined balance sheets of major state-owned companies listed in Schedule 2 of the Public Finance Management Act (1999) excluding development finance institutions.**

	TOTAL ASSETS		**TOTAL LIABILITIES**		**NET ASSET VALUE**		**ROE (AVERAGE)**
	R billion	**%**	**R billion**	**%**	**R billion**	**%**	**%**
2010/11	639.7	23.5%	423.0	23.8%	216.7	23.0%	6.7%
2011/12	710.1	11.0%	470.7	11.3%	239.4	10.5%	7.5%
2012/13	800.3	12.7%	543.7	15.5%	256.6	7.2%	4.8%
2013/14	910.7	13.8%	633.6	16.5%	277.1	8.0%	3.3%
2014/15	1042.2	14.4%	737.1	16.3%	305.1	10.1%	-2.9%
2015/16	1178.6	13.60%	818.2	10.7%	360.4	20.8%	0.6%
2016/17	1224.3	3.9%	870.3	6.4%	354	-1.8%	0.7%
2017/18	1263.2	3.20%	901.1	3.5%	362.1	2.3%	-0.8%
2018/19	1269	0.50%	927	2.9%	342	-5.5%	-0.8%
2019/20	1313.4	3.50%	960.7	3.6%	352.7	3.1%	-9.9%
2020/21	1227.3	-6.60%	850.6	-11.5%	376.7	6.8%	-13.5%
2021/22	1280.4	4.30%	862.8	1.4%	417.6	10.9%	-1.2%

Source: National Treasury (2013,2015,2017,2022,2023)

Table 9: Specification tests

Multicollinearity: VIF	
	CENTERED VIF
C	NA
STDTA	1.2344
LTDTA	1.6492
BDCOMP	1.1668
EXCOM	1.4017
OS	1.3037
SIZE	2.4325
GROWTH	1.0769
TANG	1.5446
COVID	1.0610
GOV	1.2656

Autocorrelation: Durbin- Watson test	
	DW STATISTIC
OM	0.6708
ROE	1.8894
NPM	0.7547
ROA	1.0812
Autocorrelation correction: Durbin- Watson test	
	DW STATISTIC
OM	2.0481
ROE	2.1720
NPM	1.6970
ROA	1.9315

The Breusch Pagan Heteroskedasticity tests

INDEPENDENT VARIABLES	CHI -SQ. STATISTIC	CHI -SQ. d. f	Prob.
OM	1.9700	11	0.0324**
ROE	0.2400	11	0.9946
NPM	4.2300	11	0.0000***
ROA	1.5700	11	0.1075

***1% significance level; ** 5% significance level; * 10% level of significance

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
Registration number: REC-101114-044

SCHOOL OF ECONOMICS AND FINANCE ETHICS COMMITTEE

Ethics clearance / waiver number: CBUSE2236W

Date: 28 February 2024

Re: Nomathemba Khumalo (2631607)

To whom it may concern,

Nomathemba Khumalo (2631607) is currently registered as a Master of Commerce – Business Finance student at the School of Economics and Finance, University of the Witwatersrand, Johannesburg. This letter is to confirm that, at the time of writing Nomathemba Khumalo does not need ethical clearance for her study entitled *'Capital Structure and Financial Performance of State-Owned Enterprises in South Africa; does Corporate Governance matter?'* This decision has been reached based upon a description of the project supplied by Nomathemba Khumalo to the School of Economics and Finance Ethics Committee, constituted as a subcommittee of the University Human Research Ethics Committee (Non-Medical), which has been evaluated by the subcommittee chair. This decision has then been ratified by the University Human Research Ethics Committee (Non-Medical). If, however, Nomathemba Khumalo changes the methods of data collection and analysis for this project, this decision may no longer be valid. If such changes take place, this should be communicated to the School of Economics and Finance Ethics Committee.

Please feel free to contact me should you require any further information.

Thank you.

Yours sincerely,

Sibulele Nkunzi

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