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Impact of SOE privatization on financial and operational performance

By

Hlulani Theophellus Mabunda

Student Number: 441798



A research project submitted to the Wits Business School, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Management in Finance and Investment

The Graduate School of Business Administration, Wits Business School, University of the Witwatersrand

Supervisor: Dr Chengete Chakamera

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ABSTRACT

State-Owned Enterprises (SOEs) play a significant role in the global economy, contributing to developmental goals and job creation. However, accusations of inefficiencies within South Africa's SOEs have prompted calls for comprehensive evaluation. This study examines the impact of privatization on the financial and operational performance of selected SOEs, with the aim of informing stakeholders about the potential impediments and opportunities surrounding further privatization efforts.

Employing panel data regression analysis over a twelve-year period, this research assesses the relationship between independent variables (such as privatization, government decisions, debt-to-equity ratio) and the dependent variable (financial and operational performance metrics including return on equity, return on assets, and operating margin), considering control variables (interest, inflation, and environmental, social, and governance factors).

The findings reveal significant associations between privatization and financial and operational performance indicators. Privatized firms demonstrate higher return on equity and return on assets, indicating improved returns on equity and assets. Supportive government policies also contribute positively to financial performance. However, the integration of environmental, social, and governance factors yields mixed effects, suggesting the need for further exploration.

This study provides valuable insights for policymakers, regulators, and business leaders, informing decisions regarding privatization strategies and their broader economic and societal implications.

DECLARATION

I, Hlulani Theophellus Mabunda, declare that the research work reported in this dissertation is my own, except where otherwise indicated and acknowledged. It is submitted for the degree of Master of Management in Finance and Investment (MMFI) at the University of the Witwatersrand, Johannesburg (Wits). This thesis has not, either in whole or in part, been submitted for a degree or diploma to any other universities.

Signature:

Date: 24/04/2024

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LIST OF ACRONYMS AND ABBREVIATIONS

ANC	African National Congress
DPE	Department of Public Enterprises
ESG	Environmental, Social, and Governance
FG500	Fortune Global 500
GDP	Gross Domestic Product
GLS	Generalized Least Squares
IMF	International Monetary Fund
NDP	National Development Plan
NP	National Party
OECD	Organisation for Economic Co-operation and Development
PPI	Private Participation in Infrastructure
PRASA	Passenger Rail Agency of South Africa
PRC	Presidential Review Committee
ROA	Return on Asset
ROE	Return on Equity
SAA	South African Airways
SABC	South African Broadcasting Corporation
SD	Standard Deviation
SEP	Strategic Equity Partnerships
SIP	Share Issue Privatization
SOEs	State-Owned Enterprises

CHAPTER 1: INTRODUCTION

1.1. Background

State-Owned Enterprises (SOEs) are entities that are owned, controlled, or operated by the government at various levels, ranging from national to local authorities (Chang, 2007). On a global scale, nations employ SOEs to provide public goods, control the private sector and foreign influence on the local economy, generate revenue for the government, enhance service delivery, and foster economic development and industrialization (Aharoni, 2000). In summary, SOEs can be accurately characterized as distinctive entities originated by governments, serving the purpose of either engaging in commercial activities or facilitating the government's provision of services to its constituents (Chang, 2007).

SOEs play an influential role in the contemporary global economy. In 2000, the Fortune Global 500 (FG500) featured 27 SOEs, and by 2017, this number had surged to 102, constituting a fifth of all FG500 corporations (Lin, Lu, Zhang & Zheng, 2020). In terms of financial impact, FG500 SOEs generated a combined revenue of $6.1 trillion in 2017, representing 22% of the overall revenues amassed by all FG500 companies, which amounted to $27.7 trillion (Kwiatkowski, Gołębiowska & Mroczek, 2023).

The positive perceptions of SOEs above give an account that the state should play a significant role in monitoring their efficiency as any inefficiency in their operations may impact economic growth in an adverse manner (Szarzec, Dombi & Matuszak, 2021). However, SOEs have been blamed for poor performance than private companies. Privatized companies are believed to be more efficient than SOEs as they are profit-driven, a motive that is absent in public enterprises. The performance of SOEs is widely criticized, with perceptions of dismal results and adverse effects on the overall economy (Goldeng, Grünfeld & Benito, 2008). Critics argue that SOEs absorb significant government funds through substantial losses (Marimuthu, 2020). Consequently, policy recommendations advocate privatization, deregulation, and a bolstering of the private sector's role. There is a common assertion that historical evidence illustrates the limitations of SOEs, deeming them a "significant impediment to economic growth" (Yao,

2004). Privatization is the process of transferring ownership or control of a business, enterprise, or public service from the government or public sector to private individuals, entities, or organizations (Yarrow, 1986). This transfer typically involves the sale or transfer of assets, management responsibilities, and decision-making authority from the public sector to private entities (Yarrow, 1986). Privatization is often pursued with the aim of increasing efficiency, improving service quality, promoting competition, reducing government intervention, and encouraging private sector investment in various industries and sectors of the economy.

However, there is another side to the story. Empirical evidence (Estache, 2003; Zhang, 2008; Tan, 2012) only offers limited support for the notion that SOEs are inherently less efficient than their private counterparts. For example, Estache and Rossi (2002) utilized a stochastic cost frontier with 1995 data from 50 water companies in 29 Asian and Pacific countries, finding no significant efficiency differences between private and public companies. Tan's (2012) research on private participation in infrastructure (PPI) in Malaysia supported the importance of transparent competition for efficiency gains, noting inconclusive efficiency gains from water privatization over the period 2001 to 2008. Zhang, Parker and Kirkpatrick's (2008) study, analyzing panel data for 36 developing and transition countries from 1985 to 2003, found limited gains in economic performance from privatization and regulations, emphasizing the need for competition to stimulate performance. Additionally, studies often overlook factors like security of supply or environmental considerations. It is crucial to also note that profit maximization by private enterprises might prompt managers to shift focus from firm-level concerns to political maneuvering. This can lead to attempts to control the government as a means of asserting influence over the firm (Aharoni, 2000). Furthermore, the privileges granted to private enterprises could potentially hinder overall economic growth. Not only this, but scholarly work also opines that not all SOEs are doomed to failure; some are efficient and productive. Moreover, scholars also argue that not all underperforming SOEs must be privatized; some need to be reformed.

There are currently over 700+ SOEs in South Africa at all levels of Government, including commercial and non-commercial SOEs and their subsidiaries (Kikeri, 2018). For the

financial year ending 2019/2020, these SOEs' assets amounted to 34 percent of the country's gross domestic product (GDP) (Simone & Wang, 2022). Given SOEs' varied roles in supplying key inputs for businesses and their significant share in real gross capital formation (averaging 13 percent of the total in the last five years) (Simone & Wang, 2022), SOEs' operations are an important determinant of the productivity and the competitiveness of the economy.

South Africa's SOEs find themselves in a precarious situation, marked by accusations of inefficiencies and a notable financial downturn. The criticism, supported by lackluster financial performance, has fueled discussions about the potential privatization of these entities (Mutize & Tefera, 2020).

In the pursuit of privatization, it is imperative to conduct thorough studies and assessments of potential repercussions. Rigorous economic impact studies, risk assessments, and scenario analyses should be undertaken to understand the potential consequences on employment, service delivery, and the overall economy. Learning from the experiences of other countries that have undergone similar privatization processes can provide valuable insights into the potential pitfalls and successes.

1.2. Research Problem Statement

Since the early 1980s, the World Bank and the International Monetary Fund (IMF) have actively encouraged developing countries' governments to privatize their SOEs (Babai, 1988). This approach stems from a growing doubt about the ability of SOEs to achieve optimal economic outcomes (Galal, 1991). The performance of SOEs is perceived as dismal, exerting a harmful impact on the overall economy. SOEs are often seen as draining government funds due to substantial losses (Short, 1984). Policy recommendations have emphasized privatization, deregulation, and bolstering the role of the private sector. It is commonly asserted that historical evidence underscores the limitations and drawbacks of SOEs, which are considered a "significant impediment to economic growth" (World Bank, 1995). History is also believed to illustrate the private sector's ability to overcome many of these shortcomings. However, empirical evidence presents a more nuanced picture, offering only limited support for the notion that SOEs

are inherently less efficient than private enterprises. Additionally, studies often neglect factors like security of supply or environmental considerations (Fells & Lucas, 1992). Furthermore, the pursuit of profit maximization by private-sector enterprises may prompt managers to shift their focus from the firm level to the political arena, with control of the government becoming a means to establish dominance over the firm (Papandreou, 1952). The privileges granted to private enterprises could potentially impede economic growth.

Despite the widespread privatization trend in developing markets during the 1980s and 1990s, SOEs continue to exert significant influence over substantial portions of national GDP. This remains true in several African nations, where they oversee more than 50 percent of the economy, and in regions such as Asia, Eastern Europe, and Latin America, where their control extends to as much as 15 percent.

This study will not only analyze the economic effects of SOE privatization, but it will also contrast the short- and long-term performance of SOEs. The long-term success of privatized enterprises was rarely examined. To better understand the impact of privatization on corporate performance, the majority of studies on the topic focused on the short-term performance of the companies (Radić, Ravasi & Munir, 2021).

Consequently, in order to obtain a clear picture of the impact of privatization on each entity's financial performance and to identify any movements in the ratios that need clarification or further research, the study will concentrate on the 22-year period from 2000 to 2022. According to the research, evaluating the impact of privatization on enterprises that have undergone privatization based solely on data from a single year is inappropriate.

Many studies have compared the effectiveness of SOEs to private enterprises, as well as the effects of privatization; however, the empirical findings of these studies are not always widely accepted (Estrin & Bhaumi, 2007; Chen, 2006; Dong, Putterman & Unel, 2006; Hu, Song & Zhang, 2004; Jefferson & Su, 2006; Li & Rozelle, 2001, for example). The present study will present comprehensive empirical results with theoretical background to measure the impact of privatization and other control variables on financial and operational performance.

1.3. Research Objectives

The primary objective of this research is to comprehensively investigate and understand whether privatization improves the performance of SOEs in South Africa.

Specific objectives are to:

- Investigate the impact of privatization of selected SOEs on their financial performance.
- Investigate the impact of privatization on the operational performance of selected SOEs.
- Examine the impact of privatization on other strategic imperatives (e.g., sustainability score, number of employees, etc.)

1.4. Research Questions

The main research question of this study is “Does privatization of SOEs in South Africa improve their performance?”

The following are the sub-research questions of this study:

- What is the impact of privatization on the financial performance of selected SOEs?
- What is the impact of privatization on the operational efficiency performance of selected SOEs?
- What is the impact of privatization on other strategic imperatives (e.g., sustainability score, number of employees, etc.) for SOEs in South Africa?

These research questions will guide the investigation into the reasons, methods, and impacts of privatization and restructuring of SOEs, as well as the exploration of alternative strategies and stakeholder perceptions.

1.5. Motivation of the Study

As stated before, SOEs play a crucial role in the South African economy. The Department of Public Enterprises (DPE) is responsible for supervising the operations and initiatives of six major national SOEs. These include the prominent freight logistics company Transnet, the partially government-owned airline South African Airways (SAA) (currently holding 49% government ownership), the defense and aerospace company Denel, the

forestry company SAFCOL, the diamond mining company Alexkor, and Africa's largest power utility company, the troubled Eskom (Madumi, 2018). Collectively, these companies employ a workforce exceeding 100,000 individuals. Additionally, there are other non-financial SOEs fully owned by the South African government (beyond the direct purview of the DPE), such as the oil and gas company PetroSA, the South African Post Office, Africa's largest water utility Rand Water, the state railway operator Passenger Rail Agency of South Africa (PRASA), the South African Broadcasting Corporation (SABC), and several others (Bronstein & Olivier, 2015). The portfolio of major industrial state-owned enterprises also includes companies where the South African government holds a majority stake. Notable examples include the Airports Company of South Africa (94.6% state ownership), the telecommunications company Telkom SA (40.5% state ownership), and the chemical conglomerate Sasol (approximately 22% state ownership). This diverse array of companies collectively employs over 90,000 individuals (Thomas, 2012).

South Africa's SOEs have faced accusations of various forms of wasteful inefficiencies, with these claims seemingly confirmed by their lackluster financial performance. However, relying solely on profits and losses as indicators of efficiency can be misleading. Despite their financial challenges, these major SOEs, along with foreign multinational companies' subsidiaries in the manufacturing sector (especially automotive), form the oligopolistic foundation of the South African industrial economy. They oversee strategic sectors and possess fundamental technical capabilities that have been developed over the decades (Kikeri, 2018).

The proposition of privatizing SOEs raises concerns as it would strip the South African State and other private entities in the economy of a crucial policy tool for steering economic and technological transformation. Without a patient, long-term owner, these companies might either cease to exist or operate under a governance structure prioritizing the short-term financial interests of new shareholders over the broader public purpose that serves various stakeholders in the economy (Sithomola, 2019).

SOEs persist in seeking and obtaining government assistance, diverting funds originally designated for essential service delivery. The Finance Minister, Enoch Godongwana,

expressed concern in his 2022 budget statement, highlighting that over R380 billion has been spent since 2013 to bail out SOEs. This underscores structural deficiencies within SOEs that need addressing. The Minister's emphasis implies that as long as the State maintains complete ownership of these public institutions, they will continue to be a financial burden on the State (Adebayo & Ackers, 2023).

The South African government has received a caution from a rating agency, stating that persistently bailing out larger public entities unable to balance their finances will negatively impact the country's fiscal performance. Following the budget address, the Fitch rating agency warned that ongoing financial assistance to these parastatals could downgrade the current credit rating from stable to negative (The Conversation, 2020). This study emphasizes the need for decentralization of public entities to avoid mandatory financial bailouts, which could harm the country's economy and credit rating.

Due to the inherent inefficiencies of SOEs, privatization has become crucial in many economies' structural reform efforts. Consequently, this study advocates for the privatization of SOEs, backed by empirical evidence demonstrating the challenges faced by South Africa's SOEs since 2002, including political interference, governance instability, and an inability to achieve objectives. Despite initiatives and recommendations from the 2010 Presidential Review Committee (PRC), which addressed SOE shortcomings, less than half have been implemented, making privatization a potentially viable option.

However, an in-depth examination of the literature regarding privatization emphasizes the intricate nature of this economic reform approach, emphasizing that it cannot be applied uniformly. Many studies and assessments consistently underscore the subtle effects of privatization on SOEs, indicating that internal factors significantly influence the results. Instead of being a one-size-fits-all solution, the effectiveness or ineffectiveness of privatization initiatives depends on a thorough examination of these internal factors, considering the distinct characteristics and difficulties faced by each SOE. Therefore, there is an urge to study the performance metrics of various SOEs previously privatized to understand the dynamics, which would lead the stakeholders toward a better

understanding of the potential impediments and opportunities regarding further privatization efforts. This is the motivation of this current study.

The rest of the research is structured as follows:

Chapter 2 discusses the theoretical frameworks relevant to the study after providing a comprehensive review of existing literature on privatization, government decision-making, and financial performance metrics in the context of SOEs. Theoretical models such as agency theory, stakeholder theory, and institutional theory are examined to understand the underlying dynamics shaping SOE behavior and performance. Additionally, empirical studies investigating the impact of privatization and government decisions on financial and operational metrics are reviewed, offering insights into the factors influencing SOE performance.

Chapter 3 outlines the methodological approach employed in the study, detailing the research design, data collection methods, and analytical techniques utilized to investigate the relationship between privatization and operational and financial performance metrics of SOEs in South Africa.

Chapter 4 presents the results of the regression analysis conducted to examine the relationship between various independent variables (such as privatization, government decisions, and debt-to-equity ratio) and the dependent variable (financial performance metrics including Return on Equity (ROE), Return on Assets (ROA), and operating margin).

Chapter 5 discusses the study results, analyzing the findings in relation to existing literature and theoretical frameworks. It explores the implications of privatization and government decision-making on financial, operational, and strategic imperatives of SOEs, drawing on empirical evidence and theoretical insights to provide an understanding of the observed relationships.

Chapter 6 offers a summary of the key findings, conclusions, and recommendations arising from the study. It synthesizes the main insights from the research, emphasizing the importance of financial health, operational efficiency, and strategic decision-making

in shaping the performance and dynamics of SOEs in South Africa. The chapter also discusses the implications of the findings for future research directions, highlighting areas for further investigation and methodological improvements to advance our understanding of the factors influencing SOE performance and governance.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This literature review endeavors to provide a comprehensive account of various studies on the impact of privatization on the performance of SOEs in different regions. Sections 2.2 and 2.3 discuss the historical context of SOEs in general and of South African SOEs in particular. Section 2.4 provides a discussion on challenges encountered by South African SOEs. Section 2.5 delineates different methods of privatization of State-Owned Entities, whereas sections 2.6 and 2.7 delve into the intricacies of theoretical as well as empirical literature related to the impact of privatization of SEOs on various performance metrics. Finally, section 2.8 explores the research direction of this study and the future trajectory of how the research will be conducted.

2.2. SOEs - A Historical Context

The historical evolution of SOEs provides a rich tapestry for understanding the diverse trajectories and contexts that have shaped their existence. Historically rooted in the mid-20th century, the surge in State intervention in economic activities gained momentum as nations sought to rebuild and revitalize their economies post-World War II. The establishment of SOEs was often driven by strategic imperatives, with governments undertaking direct involvement in key industries to address infrastructural needs, promote industrialization, and ensure national security (Colli & Nevalainen, 2019). During the era of State-led development in the 1960s and 1970s, numerous countries embraced the model of extensive public ownership, ranging from utilities and natural resources to manufacturing enterprises (Toninelli & Vasta, 2010).

The subsequent decades witnessed a paradigm shift with the global resurgence of market-oriented reforms in the 1980s and 1990s, commonly referred to as the era of neoliberalism. Many nations embarked on privatization programs, aiming to enhance efficiency, reduce bureaucratic inefficiencies, and foster competition (Nem Singh & Chen, 2018). This era of economic liberalization, however, did not mark the wholesale demise of Instead, it prompted a reevaluation of their roles, emphasizing the importance of

governance structures and accountability mechanisms. The experiences of different countries during these historical epochs have yielded a wealth of insights into the challenges and opportunities associated with State ownership, forming a critical foundation for the contemporary discourse on the management and performance of SOEs (Nem Singh & Chen, 2018).

2.3. South African SOEs' Historical Context

The establishment of SOEs dates to the early 20th century with the incorporation of the South African Railways and Harbours administration on the 31st of May 1910 (Transnet Freight Rail, 2010). It was established by then Prime Minister of the South African Union, Louis Botha, as a self-sufficient monopoly enterprise tasked with creating sovereignty and economic self-sufficiency for the White Afrikaner. With the progression of time, more SOEs were introduced into the South African economy, all serving a particular purpose and/or addressing a particular need at the time of introduction.

1910 to 1940 was a period of high unemployment, particularly within the Afrikaner community, as the country was plagued with industrial development challenges post the World War. In an effort to combat said unemployment and simulate industrial development, a number of SOEs were incorporated within the period: ISCOR (1928) and IDC (1940). ESKOM, in particular, was incorporated in 1923 and was in direct competition with the privately owned Victoria Fall Power Company (Sadiki, 2015).

The National Party's (NP) electoral victory in 1948 ushered in the Apartheid Afrikaner Nationalist agenda. New discriminatory laws were introduced to those already in existence (and were also extended to Indians and Coloureds) (Grobbelaar, 1998). The adoption of the apartheid agenda by the NP resulted in economic sanctions and embargoes from the international community. Between 1948 and 1970, in response to the growing isolation from the international community due to its repressive laws, the NP Government placed emphasis on the program of self-sufficiency, poor Afrikaner upliftment, and the establishment of strategic industries. This led to the establishment of SASOL (1950), with the aim of making oil from coal for a country with no large crude oil reserves as an example of self-sufficiency (Shivambu, 2014).

In the late 1970's to 80's, more economic sanctions were imposed against the NP government. In an effort to cushion the impact of sanctions and trade embargo's, the NP government began to privatize some of its SOEs and transfer ownership to private owners. SASOL was privatized in 1979 and listed on the Johannesburg Stock Exchange. ISCOR was also privatized and listed in the Johannesburg Stock Exchange in 1989 (Levy, 1999).

In April 1994, South Africa witnessed its inaugural democratic elections, leading to the African National Congress (ANC) assuming government responsibilities. They inherited a socio-economic landscape characterized by an imbalanced economy, systematically excluding Black individuals and the African majority (Van de Walle, 2002). The challenges included a substantial unemployment rate, with 40% of the population (17 million people) living in absolute poverty according, to Terreblanche and Natrass (2018). Additionally, the nation faced a significant national debt attributed to high defense spending in the 1970s and 80s by the NP government, coupled with structural corruption that became prevalent from 1985 onward (Van de Walle, 2002).

The ANC government began the pursuit of transforming these SOEs to promote and stimulate economic growth and social development and improve service delivery in line with the Reconstruction and Development Programme that was released by the tripartite alliance of the ANC, South African Communist Party and Congress of South African Trade Unions. SOEs were set out to have developmental state functions (Eidelberg, 1997).

2.4. Benefits and Challenges Encountered by South African SOEs

The objectives of SOEs in South Africa vary depending on their sector-specific mandates. These objectives encompass a range of areas, including:

I. **Infrastructure Development**: SOEs such as Eskom (electricity generation and distribution) and Transnet (rail, port, and pipeline services) focus on the construction, maintenance, and enhancement of critical infrastructure. Their activities facilitate economic activities, promote regional integration, and enable efficient transportation of goods and services (Mathebula & Masiya, 2022).

II. **Service Provision:** Entities like SAA (aviation) and Telkom (telecommunications) are responsible for delivering essential services to the public while maintaining commercial viability. These entities aim to ensure access, affordability, and quality service provision in sectors that are crucial for economic development and societal wellbeing (Sutherland, 2017).

III. **Resource Management:** SOEs such as PetroSA (oil and gas exploration) and South African National Parks (conservation) are entrusted with managing the country's natural resources. They strive to ensure the sustainable utilization of resources, environmental protection, and the preservation of South Africa's natural heritage (Roux & Foxcroft, 2011).

SOEs in South Africa encounter various challenges that impact their performance and effectiveness:

a) Governance and Accountability: Weak governance structures, political interference, and inadequate oversight have often led to mismanagement, corruption, and financial irregularities within certain entities. Addressing these challenges requires enhancing governance frameworks, promoting transparency, and strengthening accountability mechanisms (Mashamaite & Raseala, 2018).

b) Financial Viability: Many SOEs in South Africa have experienced financial difficulties, necessitating significant government bailouts to remain operational. Factors such as inefficient operations, high debt burdens, and inadequate revenue generation contribute to their financial instability. To address this, there is a need for improved financial management, cost reduction strategies, and exploring opportunities for private sector partnerships and investment (Kikeri, 2018).

c) Skills and Capacity: Some entities struggle with a shortage of skilled personnel, hindering their ability to effectively deliver services and implement strategic initiatives. Building a competent and capable workforce through skills development, training programs, and attracting top talent is crucial for enhancing the performance of SOEs (Kanyane et al., 2011).

SOEs in South Africa contribute significantly to the country's economy and development:

a) Job Creation: SOEs are major employers, creating job opportunities across various sectors. For instance, Transnet, with its extensive rail and port operations, is responsible for a substantial portion of the country's formal employment (50670 employees) (Department of Public Enterprise, 2022).

b) Infrastructure Development: Entities like Eskom and Transnet invest in infrastructure projects, stimulating economic growth, and enabling trade and commerce. Their activities enhance connectivity, attract investments, and contribute to the overall development of South Africa's infrastructure backbone (Maloa & Bussin, 2016).

c) Service Delivery: State-Owned Entities provide essential services such as electricity (Eskom), water (Rand Water), transportation (PRASA), and telecommunications (Telkom), ensuring access and affordability for citizens and businesses. These services are vital for societal well-being, economic productivity, and promoting social inclusion.

2.5. Methods of Privatization of State-Owned Entities

Numerous methods can be employed in the privatization of SOEs. These methods can be fully or partially implemented to privatize the various activities of the SOE. However, there is no single and straightforward method that can serve as a panacea in the process of privatizing all SOEs' activities and functions (Bachiller, 2017). As noted by OECD (1998), the privatization exercise is influenced by political factors such as the ideology of the ruling government on issues of market and regulations. Other issues involved pertain to the financial state of the SOEs as well as the conditions of the capital market.

Despite the fact that there are numerous methods or forms that be used to privatize the activities of SOEs, the following are discussed:

2.5.1. Deregulation

Buren (2023) refers to deregulation as the removal or reduction of laws or other demands of government control. Its objective is to eliminate the regulation in its entirety or change

an existing regulation to reduce its impact. As most SOEs are protected by law to ensure monopoly status, the privatization process repeals or suspends these monopolistic laws to encourage free trade and competition (Reddy & Moodley, 1993). A step towards the deregulation of SOEs in South Africa is the promulgation of the Temporary Removal of Restrictions on Economic Activities Act of 1986 (Act 87 of 1986). This act authorizes the president of the Republic to suspend any law that constrains economic development, competition, and job creation.

2.5.2. Contracting out

The term contracted out is taken to mean government contracting out or outsourcing with a for-profit firm, a non-profit organization, or another government to produce or deliver a service (Brudney, Fernandez, Ryu & Wright, 2005). Contracting out this part of the public sector reform strategy requires the State to appoint a private company to provide a service within a set of specific conditions. Its main aim is to reduce the direct provision of services by the State and to create more space for the market mechanism to provide such services to the public (Maurya, Gupta, & Gupta, 2022). In this method of privatization, the SOE remains responsible for the provisioning of certain goods and services but contracts with one or more private companies to provide the goods or services at an agreed price and under specified conditions. The justification for contracting out is based on the failure of the SOE to provide services or activities that the private sector can provide in a more efficient or economical manner. Contracting out improves government performance, reduces public spending, and controls political interference (Robinson, 2007).

2.5.3. Public-Private Partnerships (PPPs)

Public-Private Partnerships Is a term used to describe a broad category of activities and structures involving public and private sectors (Nasto & Sulillari, 2021). In a case where it is not possible to transfer an existing SOE in its totality to the private sector, such enterprise runs through the partnership between the SOE and the private sector. This kind of partnership may have the advantage of efficiently reconciling private sector participation and a private sector approach to management with public sector strategic interest in such an undertaking (Reddy & Moodley, 1993). Gautrain project is an example.

2.5.4. Commercialization

Clarke (2016) defines commercialization as “the transformation of cultural forms, both tangible and intangible, through the application of business values and the investment of capital, which is often seen as involving or creating a market economy.” In the case of commercialization, SOEs are transformed into public companies, and they are managed on commercial principles. Arugu and Emejuru (2018) identify two types of commercialization, namely, the full and partial. In full commercialization, The SOE is expected to operate profitably on a commercial basis and should raise funds from the capital market with no guarantee from the State. The implication is that the enterprise should follow private sector procedures to operate the business. In partial commercialization, on the other hand, the SOE is expected to generate sufficient funds to cover its operation expenditure. The State may grant the enterprise funds to finance capital projects (Arugu & Emejuru, 2018). The goal of commercializing SOEs is to make them commercially viable so that they, in the long run, be transferred to the private sector (Reddy & Moodley, 1993).

To ensure that privatization does not adversely affect the general welfare of the public, any decision to privatize a SOE must take into consideration each of the above forms of privatization. In addition, Reddy and Moodley (1993) assert that they must ensure that private concerns do not strip the State of all the profit-making public enterprises and leave behind all the less profitable ones. Due to the specific nature of each public enterprise, as well as the diverse activities and functions that the enterprise performs, there is a need to ensure that a combination offers various methods of privatization we identified and adopted (Reddy & Moodley, 1993).

2.6. Theoretical Review

2.6.1. Foundational or Classical Theories

The case of privatization has a very long history. Even a couple of centuries ago, Adam Smith (1776) argued (Smith, 1776):

> "In every great monarchy in Europe, the sale of the crown lands would produce a very large sum of money, which, if applied to the payment of public debts, would deliver from mortgage a much revenue than any which those lands have ever afforded to the crown…"

Adam Smith's classical economic theory, articulated in "The Wealth of Nations," has significantly influenced the understanding of market dynamics and economic efficiency (Smith, 1776). At the core of Smith's framework is the concept of the "invisible hand," wherein individual pursuit of self-interest inadvertently contributes to the overall prosperity of society. According to Smith, the introduction of competition is a pivotal factor in driving economic efficiency. The privatization of SOEs inherently aligns with this notion by transforming formerly State-controlled entities into players within competitive markets (Chandra, 2004). The expectation is that private ownership, motivated by profit-seeking behavior, may catalyze improvements in operational efficiency and financial performance. As private entities vie for market share, the competitive landscape fosters an environment where efficiency and innovation become paramount (Chandra, 2004).

Moreover, Smith's acknowledgment of the role of government provides a lens through which to analyze the post-privatization scenario. While advocating for free markets, Smith recognized the need for government intervention in areas such as maintaining a legal framework and ensuring the provision of public goods (Menudo, 2013). In the context of privatization, understanding the balance between private ownership and governmental oversight becomes crucial. Examining regulatory mechanisms and the government's role in shaping a competitive environment will contribute to a comprehensive assessment of the privatization's impact on SOEs (Menudo, 2013).

Furthermore, Smith's emphasis on the division of labor and specialization can be applied to assess the post-privatization landscape. Private ownership often brings about a more focused and specialized approach to operations. Investigating how this specialization within SOEs contributes to enhanced efficiency and performance is integral to understanding the broader implications of privatization (Smith, 1776). Moreover, the free-market approach encourages entrepreneurship and risk-taking. In the context of privatization, this may manifest as private entities taking over SOEs and assuming the risks associated with their operations. The inherent risk-reward mechanism of the free market can act as a catalyst for efficiency gains and strategic decision-making, potentially influencing the financial and operational outcomes of privatized SOEs.

While Adam Smith's classical economic theory advocates for a minimal role of government in the economy, Keynesian-based theories, developed in response to the challenges of the Great Depression, recognize the pivotal role of government intervention to stabilize and manage market economies (Blinder, 2008). As we explore the impact of privatization on the financial and operational performance of SOEs, it is essential to juxtapose the free-market principles of Smith with Keynesian perspectives.

Keynesian economics contends that government intervention is necessary, particularly during economic downturns, to stimulate demand, promote full employment, and stabilize the overall economy (Blinder, 2008). In the context of privatization, this recognition of the government's role suggests an approach to understanding the outcomes of transferring SOEs to private ownership. Privatization, viewed through a Keynesian lens, raises questions about the extent to which the government should relinquish control over key economic entities (Kurihara, 1959). While privatization aligns with the free-market principles of efficiency and competition, Keynesian economics emphasizes that certain sectors may require ongoing government involvement to ensure stability, prevent market failures, and address externalities (Dutt, 2010).

Moreover, Keynesian-based theories emphasize the importance of counter-cyclical policies, such as fiscal stimulus during economic downturns. Thus, understanding how the government's role evolves post-privatization is crucial. Does the government continue

to play a regulatory role to prevent market abuses and ensure fair competition, or does it withdraw entirely, relying solely on market mechanisms to guide SOEs (Blinder, 2008)? The Keynesian perspective raises considerations about the potential social and employment consequences of privatization. Governments, according to Keynesian thought, have a responsibility to address unemployment and income inequality. Examining the impact of privatization on employment levels, income distribution, and social welfare becomes imperative within this theoretical framework (Blinder, 2008).

2.6.2. Modern Theoretical Literature

The ideas behind privatization in modern economic history come from theories about how businesses and individuals interact (Drakic-Grgur, 2007). Scholars like Coase (1960) and Demsetz (1988) laid the groundwork by exploring concepts like transaction costs and property rights. These ideas were further developed by economists such as Alchian, Demsetz, Williamson (Williamson, 2007), and Pejovich (Pejovich, 1990), who emphasized the importance of private property in economic systems.

These theories align with the criticisms of collective economic systems by thinkers like von Hayek and von Mises (Nenovsky, 1999). They explain the conditions needed for private property to thrive in society, highlighting the role of individuals and firms as the foundation of the economic system. When private property is established, individuals and firms can act independently in the economic system, making transactions that involve exercising property rights (Drakic-Grgur, 2007).

The theories of transaction costs, the theory of the firm, and the property rights theory provide insights into what happens during mass privatization. However, they do not offer detailed guidance on how to transition from a state or collectively owned property system to one based on private ownership. Critics argue that these theories lack practical advice on the path to privatization. However, the counterargument is that these theories were developed before actual transition processes began, and providing specific instructions on privatization might not have been feasible (Drakic-Grgur, 2007). Despite the lack of clear instructions, these theories highlight important features of the privatization process. They suggest that the success of privatization methods can vary depending on the

specific circumstances in the environment where privatization takes place. Therefore, decision-makers overseeing privatization processes can use these theories as benchmarks to inform their choices, even if there's no one-size-fits-all solution (Nenovsky, 1999).

However, these theories highlight that shifting from one economic system to another, like moving from a socialist or collectivist system to a capitalist free market with private ownership, is not just about changing economic institutions. Even if you make significant changes to these institutions, they will not work effectively unless the foundational economic structure of the country is also transformed (Drakic-Grgur, 2007).

Privatization, therefore, is not merely a straightforward transfer of ownership and control from the state to private individuals. It is a crucial part of an extensive process that redefines the economic structure of a country. If privatization occurs without a thorough and fundamental change in the economic constitution of the country, it will not achieve its intended goals. This is because privatized companies will not be able to function properly in an old and unchanged economic environment. An unchanged system means that the rules of the economic game are not aligned with private ownership (Yarrow, 1986). In such a scenario, private companies will struggle to operate. The lack of compatibility between the economic constitution of the country and the new institutions leads to modest results in the initial stages of privatization in terms of economic restructuring and the efficiency of privatized companies during the transition period.

2.6.2.1. Theory of Productive Efficiency

The theory of productive efficiency, rooted in neoclassical economics, serves as a vital lens for understanding the impact of privatization. This theory posits that the goal of reducing production costs can be achieved through the right incentives and effective management. Proponents argue that private ownership, driven by profit motives, is conducive to the adoption of measures that enhance efficiency. The dynamics of ownership structures play a pivotal role in the theory of productive efficiency (Dogramaci & Färe, 1988). While small businesses may grapple with principal-agent relationships, contemporary limited liability corporations witness a dilution of property rights. This

dilution, as suggested by Commander and Killick (1988) and Adam et al. (1992), may diminish owners' authority over management. Consequently, managers in such corporations possess greater autonomy, potentially influencing decisions in ways that align with their interests. In the context of privatizing SOEs, the impact of diluted ownership on efficiency becomes a central focus. The theory streamlines with the efforts to investigate how the reduced influence of owners over management, as observed in large corporations, translates to operational and financial outcomes within privatized SOEs. Understanding the implications of managerial autonomy on efficiency is crucial for assessing the broader consequences of privatization.

2.6.2.2. Theory of Property Rights

To use company resources with allocative and productive efficiency, property rights are essential (Vickers & Yarrow, 1988). There is a claim that the innovation and productive performance of businesses is enhanced by the elimination of property rights in the public sector (Fraquelli & Erbetta, 2002).

The Theory of Property Rights, as articulated by Vickers and Yarrow (1988), underscores the fundamental role of property rights in achieving allocative and productive efficiency within organizations. Property rights refer to the legal rights and responsibilities associated with owning and utilizing resources, providing a framework for resource allocation and management. Vickers and Yarrow (1988) argue that clear and well-defined property rights are essential for ensuring that company resources are utilized efficiently. Moreover, Fraquelli and Erbetta (2002) introduce a subtle perspective, suggesting that innovation and productive performance in businesses can be positively influenced by the elimination of property rights, particularly in the public sector. This assertion challenges the traditional notion that strong property rights are always necessary for efficiency. Instead, Fraquelli and Erbetta (2002) propose that reducing or eliminating certain property rights in the public sector may foster innovation and enhance productive performance. The Theory of Property Rights becomes integral to understanding the dynamics of resource allocation and efficiency within privatized entities. This study provides a lens through which the performance of SOEs could be measured by providing a lens through

which we can analyze the transformation of property rights during the privatization of SOEs. As these enterprises shift from public to private ownership, the restructuring of property rights may influence how resources are allocated and utilized. Understanding the implications of changes in property rights is crucial for assessing both allocative and productive efficiency within privatized SOEs. This study, therefore, serves as a theoretical anchor, enriching our comprehension of the intricate relationship between property rights, resource utilization, and the financial and operational performance of privatized State-Owned Enterprises.

2.6.2.3. Theory of Agency

The Theory of Agency posits that individuals, acting as agents, primarily pursue their own self-interests. To align the goals of agents with those of the company, incentives become crucial. Within the context of organizations, agency theory focuses on mitigating the principal-agent problem, where misalignment of interests may arise between owners (principals) and managers (agents) (Leslie, 1993). Scholars contend that incentivizing agents is essential to ensure that their goals align with the broader organizational objectives.

Macias (2012) introduces a macroeconomic dimension to agency theory, suggesting that new systems, particularly accounting systems, are more frequently designed as a consequence of privatization. This assertion aligns with the overarching theme of agency theory, as privatization often involves a shift in ownership, necessitating the alignment of managerial goals with those of the privatized entity (Macias, 2012). Exploring the implications of privatization on the design of macroeconomic systems provides valuable insights into how incentives are structured to mitigate agency conflicts in the wake of ownership transitions (Macias, 2012).

Furthermore, Hartley, Parker, and Martin (1991) contribute to the agency theory by emphasizing the impact of ownership structure on managerial behavior. They contend that privately held companies are guided by clear business objectives, which echoes the essence of agency theory, where aligning managerial behavior with organizational goals is paramount. The suggestion that capital markets discourage non-profit managerial

behavior underscores the role of market mechanisms in reinforcing the alignment of agent objectives with the broader interests of the organization. Drawing on the broader insights from agency theory, it is important to understand how changes in ownership structures, as observed in privatization, influence the incentives provided to agents. The alignment of managerial goals with those of the organization is crucial for optimizing financial and operational performance which is the intention of this study.

2.6.2.4. Theory of Allocative Efficiency

Adam et al. (1992) claim that the rivalry brought about by private ownership is critical to attaining allocative efficiency since it is via this process that important information is disclosed that is necessary for a firm to use its input efficiently. It will be more challenging to identify signals that can be used to calculate an appropriate input-output balance if there is little competition. Additionally, revenues may drop as a result of ineffective management or decreased demand (Gode & Sunder, 1993). According to neo-classical economics, state enterprises' allocative efficiency is low because politicians, management, and employees are all driven by objectives that are at odds with the business's best interests.

Additionally, they contend that actions like market pricing, the elimination of import restrictions or quotas, the encouragement of the private sector, the reduction of government operations through the closure of state enterprises, and the contracting out of government functions to the private sector will all encourage an adequate allocation of resources. It is believed that more efficient businesses run by private rather than public ownership will benefit the country, the industry, and consumers (Flemming & Mayer, 1997).

Research indicates that state-owned businesses are typically consistently losing money. The driving forces behind privatization are growth in government revenue, rising capital ownership, and the crucial performance of SOEs. Many politicians believe that the government should only focus on a few particularly important and specific businesses, such as the manufacture of steel and defense materials, rather than managing all types of enterprises (Megginson & Netter, 2001).

2.7. Empirical Literature Review

Numerous research studies have been conducted to explore the effectiveness of privatization on the performance of SOEs. The findings of these studies are unalike, inconsistent and/ or inconclusive with each other due to diverse approaches used by researchers such as the sample size, selection of variables as well as the reliability of data incorporated. Firstly, research studies that found that there is immense improvement of firms' performance post privatization include among others Kumar (2014) as well as Ojonugwa and Lrunmoluo (2015).

Secondly, there are research studies that believe that privatization is twofold. On the positive side, they contend that privatization provides firms with an opportunity to improve proficiency and a hassle-free working environment. On the other hand, they are of the view that privatization may transfigure firms into private monopolies which is more precarious than public monopolies (Khurud & Abhang, 2016; Rastogi & Shukla, 2013). To ensure that state monopolies do not turn into private monopolies, privatization requires an environment where there is competition and regulations (Gakhar & Phukon, 2018).

Thirdly, research studies that argue that privatization does not have an effect on the performance of firms include Ritu (2015) and Poczter (2016). They argue that that the problem of the public sector does not relate to lack of efficiency, but one of pricing, and collection of customer charges. Failure to address these problems, the performance of state-owned enterprises is unlikely to make progress.

Numerous studies have extensively explored the empirical implications of privatization on the financial performance of enterprises, primarily rooted in agency theory (Gupta, 2008; Megginson & Netter, 2001). Initially, the focus in this research domain centered on a comparative analysis between state-owned and private companies, with a noticeable dearth of studies specifically addressing privatized entities. Early investigations employed diverse methodologies encompassing single-country or single-industry samples, exemplified by Majumdar (1996); Tian (2000); Ehrlich, Gallais-Hamonno, Liu and Lutter (1994); and Galal and Shirley (1994). These studies aimed to scrutinize the costs and productivity growth of both private and state-owned firms over distinct periods.

Additionally, other studies adopted a broader approach, employing multi-industry and multinational time-series comparisons, as evident in works like Boardman and Vining (1989) and Frydman, Gray, Hessel, and Rapaczynsk (1999). Collectively, these studies tended to support the economic rationale for privatization, asserting the superior performance of private over state-owned enterprises.

A second category of studies directly explored the impact of privatization by comparing performance metrics, such as sales and income, before and after the privatization event. This approach was prevalent in studies assessing the effects of share-issue privatizations, concentrating on specific industries or countries (D'Souza & Megginson, 1999; Maquieira & Zurita, 1996; Sun & Tong, 2003). Additionally, some studies investigated specific divestment types, including direct sales to private investors and voucher privatizations (Uhlenbruck & Castro, 2000). This second wave of studies provided a more subtle portrayal of the impact of privatization on performance. While a majority of the investigations hinted at improvements in company performance, the overall narrative became more mixed, underscoring the necessity for a comprehensive understanding of the varied outcomes associated with privatization (Hartley & Medlock III, 2013).

There exists an extensive body of literature examining the economic consequences of privatization, primarily composed in the 1990s, with a limited focus on more recent issues and developments in privatization evidence, particularly in developing economies. When developed economies divested SOEs, particularly during the 1980s and 1990s, their goals were typically centered on improving economic efficiency, reducing government intervention, increasing revenue, and introducing competition in monopolized sectors (Vickers & Yarrow, 1988). Earlier research on the economic impacts of privatization primarily concentrated on these aspects and drew data from developed and later transition countries. Two prior surveys, conducted by Megginson and Netter (2001) and Estrin, Hanousek, Kočenda and Svejnar (2009), respectively, synthesized findings up to 2000 and covered developed and middle-income countries from 1989 to 2006.

In Asia, South Asia, particularly India, saw limited privatizations, while East Asia, especially China, stood out with privatization proceeds representing 30% of the world's total ($230 billion) from 1988 to 2008. China's unique approach involved encouraging innovative forms of industrial ownership at the subnational level, combining elements of collective and private property, alongside promoting new private entry and foreign direct investment (Tunç, 2005). Consequently, by the late 1990s, the non-state sector constituted over 60% of GDP, and state enterprises' share in industrial output had declined significantly (Brandt & Rawski, 2008). The Organization for Economic Co-operation and Development (OECD) estimated the state-owned share of GDP further decreased to 29.7% by 2006 (Lee, Matsumura & Sato, 2018). Finally, in Latin America, particularly Chile, extensive privatization programs, particularly in the infrastructure sector, were initiated in 1974, reaching their peak in the 1990s. Between 1988 and 2008, Latin America accounted for $220 billion in total privatization proceeds, constituting 28% of the world's total (Tunç, 2005).

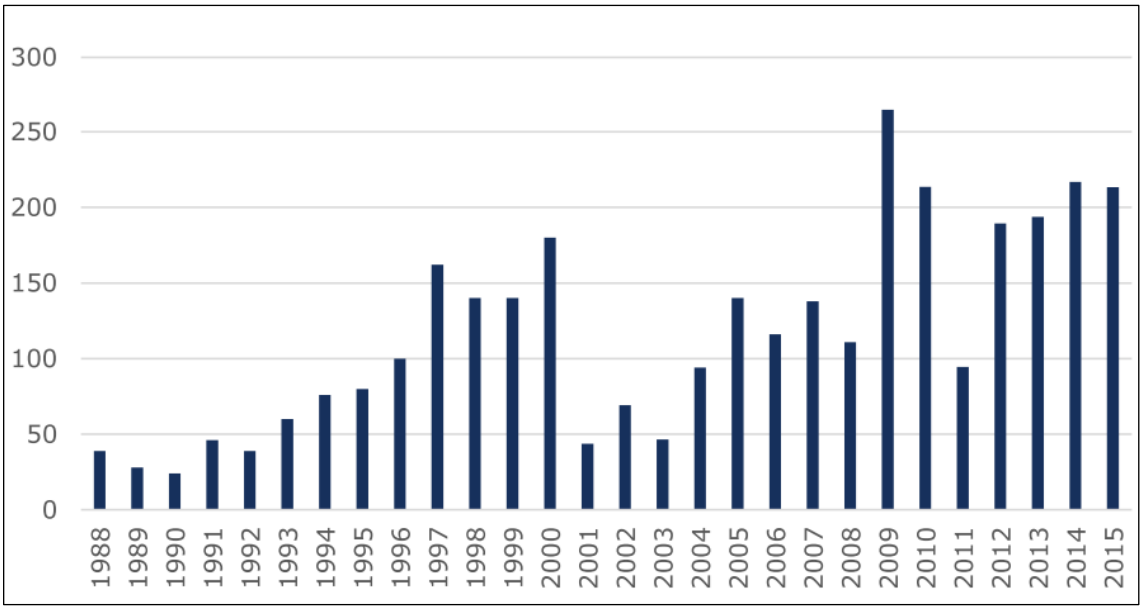


Figure. 1 *Worldwide privatization revenues from 1998 to 2015 (billions of USD). (Source: Privatization Barometer, 2017)*

2.7.1. Developed Countries

The developed countries are characterized by well-structured institutions, lower levels of corruption and nepotism, and a fair political competition landscape. This setting implies the presence of robust market and regulatory mechanisms (Bradburd, 1996). In such conditions, it is reasonable to assume that private firms encounter challenges exploiting monopoly power and tend to operate more efficiently compared to countries lacking these attributes. Consequently, the findings derived from this context may not be directly applicable to less developed nations or economies in transition.

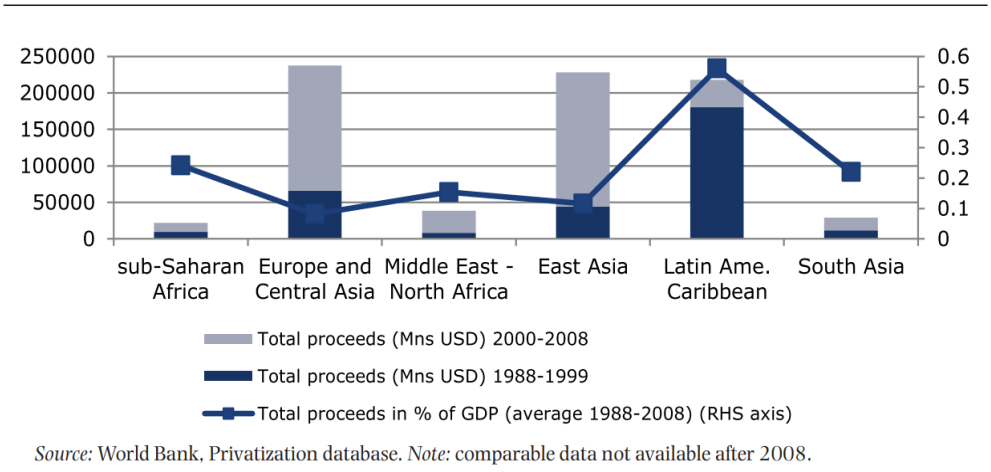
Several empirical studies have delved into the impacts of privatization of SOEs in developed countries. Bortolotti and Pinotti (2003) explored the effects of privatization on firm performance in both developed and developing countries, revealing that privatization in developed countries led to heightened efficiency and profitability, particularly in competitive industries. Yarrow (1999) found that privatization was associated with increased productivity, with a focus on the role of competitive market structures and effective regulation, particularly in developed countries. Megginson and Netter (2001) investigated the impact of privatization on manufacturing firms, emphasizing productivity gains, especially in developed countries, attributing the improvements to enhanced management practices and technological advancements. D'Souza, Megginson and Nash (2005) studied a comprehensive dataset encompassing 129 share-issue privatizations across 23 developed countries within the OECD. The findings revealed substantial and statistically significant increases in various performance indicators, including profitability, efficiency, output, and capital expenditure, subsequent to privatization. The analysis highlighted the pivotal role played by ownership structures, encompassing both private ownership and foreign investment, in influencing post-privatization performance. Additionally, the degree of economic freedom and the level of development in capital markets emerged as significant factors shaping the outcomes of privatization.

They correlated the results with those that investigated post-privatization performance enhancements in developing nations. This suggested notable distinctions in the factors influencing post-privatization performance between developed and developing

economies. Particularly noteworthy was the prominence of institutional factors, such as the extent of trade or financial liberalization, which more frequently emerge as significant determinants in the context of developing countries. This observation underscores the varying impact of privatization across different economic landscapes, emphasizing the heightened significance of institutional considerations in shaping post-privatization outcomes in developing economies.

2.7.2. Developing Countries

Studies examined by Clarke, Cull and Shirley (2005) in developing countries, utilizing the Megginson, Nash, and van Randenborgh methodology or a stochastic frontier approach, indicate that bank performance generally improved following privatization. For instance, Boubakri, Cosset, Fischer and Guedhami (2005), using the Megginson, Nash, and van Randenborgh methodology to analyze 81 bank privatizations in 22 low- and middle-income countries, found that some performance measures improved post-privatization, but this trend varied across countries due to the influence of environmental factors. Beck, Cull and Jerome's (2005) study in Nigeria demonstrated that privatization could enhance bank performance even in unfavorable macroeconomic and regulatory conditions, with the government selling weaker banks. However, they argued that an adverse macroeconomic and regulatory environment diminishes the benefits of privatization. Azam, Biais and Dia (2004) also emphasized the importance of a strong, independent regulatory agency for ensuring that privatized banks effectively contribute to financial development, both theoretically and empirically.



Source: World Bank, Privatization database. *Note:* comparable data not available after 2008.

Figure 2. *Value of privatization transactions in developing countries by region, 1998 to 2008 (Saul Estrin, 2018).*

The research surveyed by Clarke et al. (2005) additionally suggests that total privatization, as opposed to partial privatization, has a more positive impact on bank performance. This finding is consistent across transition countries (Bonin, Hasan & Wachtel, 2005). There is also evidence indicating that privatization enhances competition in the banking sector. For example, Otchere (2005) analyzed share-issue privatizations in nine countries using the Megginson, Nash, and van Randenborgh methodology and found that rival banks experienced abnormally negative returns following privatization announcements, indicating expectations of intensified competition and lower returns. The evidence suggests that performance improvement is more pronounced when the government fully relinquishes control, when banks are privatized to strategic investors rather than through share issues, and when the bidding process is open to all, including foreign banks (Clarke et al., 2005).

One of the early telecom studies in developing countries by Wallsten (2000) focused on a panel of 30 African and Latin American countries from 1984 to 1997, employing a methodology similar to Megginson, Nash, and van Randenborgh. The study found that competition is significantly associated with increased per capita access and reduced costs. However, privatization alone is associated with few benefits and is negatively correlated with connection capacity. Recent research by Gasmi, Maingard, Noumba and

Virto (2013) analyzed the impact of fixed-line telecommunications operator privatization on sector performance using a 1985 to 2007 panel dataset for 108 countries. The study found positive impacts in OECD countries, Central America, the Caribbean, resource-scarce coastal Africa, and Asia. However, negative impacts were observed in South America and African resource-scarce landlocked countries, with no significant effects in resource-rich African countries. Gasmi et al. (2013) emphasized the importance of developing appropriate institutional structures for successful privatizations, stating that successful countries improved infrastructure policies and expanded network coverage. In contrast, unsuccessful outcomes in South America and some African countries were attributed to weak contractual design, inadequate policy enforcement, and insufficient aggregate demand. The study highlighted that competition, in the absence of strong state capacity, was more effective than privatization in fostering performance.

In the context of water privatization, Estache and Rossi (2002) utilized a stochastic cost frontier with 1995 data from 50 water companies in 29 Asian and Pacific countries, finding no significant efficiency differences between private and public companies (Estache, 2003). Research by Tan (2012) on PPI in water in Malaysia supported the importance of transparent competition for efficiency gains, noting inconclusive efficiency gains from water privatization over the period 2001 to 2008. Despite subsequent renationalization of water assets, PPI continues, primarily in lucrative segments, with less profitable segments and rural areas remaining with the public sector. In the electricity sector, Zhang, Parker, and Kirkpatrick (2008) analyzed panel data for 36 developing and transition countries from 1985 to 2003, found limited gains in economic performance from privatization and regulations, emphasizing the need for competition to stimulate performance. They concluded that an effective regulatory system is crucial, especially when competition is weak, and that privatization alone does not lead to improved labor productivity, higher capital utilization, or increased generating capacity and output, except when coupled with the establishment of an independent regulator.

Hence, findings from empirical investigations into privatization outcomes in developing countries indicate a significant enhancement in the performance of banks following privatization in numerous instances. However, the benefits derived from privatization in

the utilities sector, encompassing electricity and water, have been constrained. Finally, in the telecommunications sector, the effects of privatization on efficiency and coverage exhibit regional disparities. Positive impacts have been observed in Central America and resource-scarce coastal regions of Africa and Asia, whereas negative effects are noted in South America and African nations that are landlocked with fewer resources. Consequently, it becomes apparent that the impact is contingent on both the specific context and sector. Key factors contributing to this variability include the quality of regulation, institution quality, variations in effective competition, distinctions in contractual design particulars, and characteristics of the new owners.

2.7.3. Privatization in South Africa

Privatization emerged as a policy consideration during the previous South African regime, gaining prominence in the mid-1980s (Fine, 1997). Brynard et al. (1980) provide a concise overview of privatization efforts and outcomes from the inception until the first democratic elections in May 1994 (Schwella, 2003). The announcement to initiate privatization in South Africa came in 1988, targeting entities such as ISCOR, FOSKOR, Transnet, SAPO, and Telkom. The impetus for privatization in South Africa, especially initially, was driven by the government's financial needs amid international sanctions, economic downturn, and escalating defense expenses (Schwella, 2003). However, these privatization plans, largely initiated by the NP government, yielded limited success. Fine (1997) identifies several reasons for this, including hesitancy among the government and industries, resulting in a slowdown of the privatization process, except for the denationalization of ISCOR. According to Fine (1997), the privatization program fell short of meeting the short-term financial requirements of the struggling apartheid regime.

In 2010, the South African government introduced the National Development Plan 2030 (NDP), aiming to eliminate poverty and inequality in the country (Isike & Ogunnubi, 2017). The NDP envisions a significant role for SOEs in establishing a developmental state, emphasizing their role in advancing economic and social justice. The ANC administration asserts that leveraging SOEs is crucial for achieving economic emancipation and addressing socio-economic concerns. Despite adopting a centralized approach for both

commercial and non-commercial purposes, akin to China's model, current South African SOEs face dysfunctionality and fall short of their developmental objectives (Bronstein & Olivier, 2015). Governance within these entities has notably declined, with many experiencing substantial failures due to insufficient regulatory oversight, excessive centralization, and unclear goals. Financial and governance challenges are linked to a fragmented legal framework characterized by overlapping and contradictory regulations. Political interference and the dual mandate of some SOEs have further contributed to their failures, leading to allegations of looting by ANC political officials and their business associates (Madumi, 2018).

SOEs persist in seeking and obtaining government assistance, diverting funds originally designated for essential service delivery. The Finance Minister, Enoch Godongwana, expressed concern in his 2022 budget statement, highlighting that over R380 billion has been spent since 2013 to bail out SOEs. This underscores structural deficiencies within SOEs that need addressing. The Minister's emphasis implies that as long as the state maintains complete ownership of these public institutions, they will continue to be a financial burden on the state (Adebayo & Ackers, 2023).

The South African government has received a caution from a rating agency, stating that persistently bailing out larger public entities unable to balance their finances will negatively impact the country's fiscal performance. Following the budget address, the Fitch rating agency warned that ongoing financial assistance to these parastatals could downgrade the current credit rating from stable to negative (The Conversation, 2020). This study emphasizes the need for decentralization of public entities to avoid mandatory financial bailouts, which could harm the country's economy and credit rating.

Due to the inherent inefficiencies of SOEs, privatization has become crucial in many economies' structural reform efforts. Consequently, this study advocates for the privatization of SOEs, backed by empirical evidence demonstrating the challenges faced by South Africa's SOEs since 2002, including political interference, governance instability, and an inability to achieve objectives (Ruiters & Bond, 2023). Despite initiatives and recommendations from the 2010 PRC, which addressed SOE shortcomings, less than

half have been implemented, making privatization a potentially viable option (Bussin & Carlson, 2020).

Telkom SA SOC, a prominent telecommunications service provider in South Africa, underwent significant privatization in 1991, marking it as the largest partially privatized telecommunications company in the country. In a bid to embrace globalization and attract foreign investment, the ANC government, in partnership with Telkom Malaysia and SBC Communication, sold 30% of Telkom's shares. A subsequent phase of privatization occurred in 2002, with the government's announcement of its intent to partially privatize Telkom SA through the use of the Share Issuance Privatization (SIP) method (Moletsane, 2023).

The partial privatization of Telkom in 2002 and 2003 serves as a valuable case study for policymakers and those interested in corporate governance. This case study offers insights that could potentially address the economic and governance challenges faced by other South African SOEs, such as SAA and ESKOM. Reports indicate that Telkom SA, unlike some other SOEs, is thriving and commercially viable. Despite being partially owned by the government, Telkom SA has implemented a successful turnaround strategy. The 2009 financial performance of Telkom SA raises the possibility that it could serve as a model for the privatization of struggling SOEs like SAA and ESKOM (Robb, 2014).

In the case of Telkom, the South African government retained majority ownership, with private shareholders gaining a stake. The evaluation of Telkom's privatization revealed that, as a listed entity, it has continued to perform well without encountering corporate governance issues. In contrast, the study explored the privatization of SAA, which employed the Strategic Equity Partner (SEP) method (Moletsane, 2023). This approach proved unsuccessful, as the SEP mechanism did not adequately safeguard minority shareholders, and SAA derived no benefits from being privately sold using this method. The findings from these studies are leading to preliminary conclusions, suggesting that privatizing SOEs could potentially serve as a solution for rescuing South African

parastatals. However, the chosen method of privatization is a crucial factor that policymakers need to carefully consider (Ruiters & Bond, 2023).

2.8. Research Gaps and Demarcation of the Current Study

The comprehensive review of literature on privatization underscores the complex nature of this economic reform strategy, emphasizing that it is not a one-size-fits-all solution. Numerous studies and analyses have consistently highlighted the subtle impact of privatization on SOEs, revealing that various internal factors play a pivotal role in shaping outcomes. Rather than a universal remedy, the success or failure of privatization efforts is contingent upon a careful consideration of these internal factors, reflecting the unique characteristics and challenges of each SOE.

In summary, research on developing economies indicates that transitioning from state to private ownership alone does not guarantee automatic economic benefits. Instead, several factors play a crucial role in determining the success of privatization. These factors include:

- The selection of firms for privatization, which can have either positive or negative effects.
- The choice between total or partial privatization, with evidence suggesting that the former tends to be more advantageous.
- The regulatory framework, influenced by the institutional and political context.
- The characteristics of the new owners, where foreign ownership is linked to superior business performance compared to "insider" ownership (privatization to managers and workers).
- The presence of effective competition, which is essential for enhancing company performance by reducing costs, lowering prices, and improving operating efficiency.

Moreover, with respect to the nature of the firm privatized, findings from empirical investigations into privatization outcomes in developing countries indicate a significant enhancement in the performance of banks following privatization in numerous instances. However, the benefits derived from privatization in the utilities sector, encompassing electricity and water, have generally been constrained. Finally, in the telecommunications

sector, the effects of privatization on efficiency and coverage exhibit regional disparities. Therefore, the main aim of this study would be to select SOEs in different domains to investigate this impact further.

Moreover, critics of the methodological approaches employed in these studies have questioned the validity of their findings. Scholars such as Estrin et al. (2009) and Megginson and Netter (2001) raised concerns about the efficacy of single-industry studies that amalgamated samples from diverse countries without controlling for country-level variations, potentially confounding the analysis. Issues of endogeneity and selection effects were also raised, highlighting that factors influencing the decision to privatize could impact performance outcomes (Gupta, 2008). For instance, single-country studies might overlook subtle reasons behind state ownership in specific industries due to market failures (Megginson & Netter, 2001). The choice between public and private ownership was deemed endogenous to both political and performance-related goals. In this research, we will be studying the SOEs from a single country i.e., South Africa, in order to minimize the impact of variations in the internal dynamics of the sample in case SOEs from multiple countries are investigated.

Studies have shown that the method of privatization has a direct impact on the outcome of privatization. Two diverging privatization methods have been employed to privatize the selected SOEs, i.e., Telkom and SAA, namely Share Issue Privatization (SIP) and Strategic Equity Partnerships (SEP) method. Moreover, a recent study by Li, Megginson, Shen, and Sun (2017), has shown that the listing method of privatization through SIP has a more direct impact on the privatization outcome, and in order to get a real privatization impact, the listing impact needs to be considered while measuring the pure privatization impact. Previous studies on the impact of privatization have not taken this into consideration while studying SOEs. Moreover, this important insight has not been fully incorporated into the broader discussion of privatization's effects on SOEs, and there is a notable absence of comprehensive studies that simultaneously examine both privatization and listing effects, particularly in the context of South Africa.

To address this critical research gap, the study will focus on two emblematic South African SOEs – Telkom and South African Airlines and will strive to provide a clearer picture of the impact of pure privatization rather than employing the previously used methodology. The analysis would also delineate whether the listing effect exacerbates or mitigates the positive or negative outcomes associated with privatization. Understanding this impact on the financial and operational performance of SOEs in South Africa is crucial for policymakers, investors, and other stakeholders involved in the ongoing discourse on privatization strategies.

Many studies have compared the effectiveness of SOEs to private enterprises and the effects of privatization (Estrin & Bhaumi, 2007; Chen, 2006; Dong et al., 2006; Hu et al., 2004; Jefferson & Su, 2006; Li & Rozelle, 2001). Furthermore, Ganda (2023) examined the financial sustainability of five companies, Eskom, SAA, SABC, Telkom, and Transnet through financial indicators, i.e., profitability and debt-equity ratios in order to determine the financial stability of the firms and corporate governance adherence. However, there is still a gap in determining the impact of the extent of privatization on the financial and operational performance of the SOEs. This research aims to address this gap by providing an empirical examination of the financial and operational performance of organizations over a twelve-year period.

The methodology proposed in our study has inherent advantages. The choice of a quantitative research design with a longitudinal panel data approach, along with a choice of variables, is a robust selected methodology. Moreover, measuring the extent of privatization through the variable % Privatized is significant due to its direct correlation with financial and operational performance. Highlighting the degree of privatization as a central focus adds depth to the analysis, as several recent studies have pointed out a direct correlation between the percentage of the SOE privatized and its financial performance. The inclusion of decision power, especially as a dummy variable, is novel. This acknowledges the influence of ownership concentration on decision-making, providing insight into how different levels of private ownership impact financial and operational outcomes.

2.9. Conclusion

This chapter provided an in-depth exploration of the complex landscape surrounding the privatization of SOEs, particularly focusing on the South African context. Through a review of historical evolution, theoretical underpinnings, and empirical studies, the chapter illuminated the multifaceted dimensions of privatization and its impact on SOEs. The historical context laid the foundation for understanding the evolution of SOEs, highlighting the shift from government-controlled economies to market-oriented reforms. In South Africa, this transition has been marked by challenges and opportunities, reflecting a unique trajectory in the global landscape of state ownership. The theoretical review delved into the foundational economic theories shaping the privatization discourse. From Adam Smith's classical economics to Keynesian perspectives, the chapter illustrated how differing economic theories offer varied lenses through which the privatization of SOEs can be understood and evaluated.

Empirical literature formed a significant part of the chapter, presenting a diverse array of studies that have attempted to measure the impact of privatization on SOEs' performance. These studies revealed a complex picture: while some indicate improvements in efficiency and financial health post-privatization, others suggest a more nuanced and context-dependent outcome. The chapter also highlighted the various methods and approaches to privatization, emphasizing that there is no one-size-fits-all solution. The South African experience, in particular, showcased the need for a careful and context-sensitive approach to privatization, considering the unique challenges and objectives of each SOE. Finally, the chapter concludes with a focused research gap, where the privatization of selected SOEs from SA will be analyzed with regard to their privatization impact, taking into consideration some unique effects.

CHAPTER 3: METHODOLOGY

3.1. Introduction

This chapter serves as the roadmap for conducting a comprehensive investigation into the impact of privatization on the financial and operational performance of SOEs in South Africa. It outlines the research design, conceptual model, variables, model specification, rationale, and diagnostic tests employed to ensure the reliability and validity of the study. Section 3.2 provides insights into the data collection process, outlines the dependent and independent variables, considers control variables, selects target organizations, and applies inclusion criteria. Section 3.3 justifies the research approach and design adopted. The model specification section 3.4 outlines the regression model developed to assess the relationship between dependent and independent variables, considering control variables. Diagnostic tests constitute a crucial aspect of the methodology in section 3.5. The chosen statistical techniques are assessed and analyzed.

3.2. Data

The following are the variables that will be included to achieve the objectives of this research.

3.2.1. Variables

3.2.1.1. Dependent Variables

Return on Equity (ROE) (Objective-1)

Return on Equity (ROE) will be used as a proxy of measuring the financial performance of SOEs. ROE demonstrates the organizational efficiency in generating profits by utilizing its equity. ROE will be computed by dividing net profit after tax by the total equity of the organization. A higher ROE indicates effective equity utilization, demonstrating financial performance by the organization.

Return on Assets (ROA) (Objective-2)

The SOE's financial and operational performance is measured through the return on assets as this indicator demonstrates the organizational efficiency in generating profits through utilizing its assets (Makokha, 2013). ROA will be computed by dividing net profit after tax by the organization's total assets. Therefore, using the ROA as a proxy of the operational performance of the SOEs enables us to compute the performance in the operational context of SOEs. In particular, following Makokha (2013), the ROA is used as a proxy for the financial performance of SOEs that have been privatized.

Operating Margin Ratio (Objective-2)

The Operating Margin Ratio variable will also be used as a proxy for measuring SOE's operational performance. The Operating Margin Ratio demonstrates the company's profits after meeting all operational expenditures, demonstrating the company's operational efficiency in generating revenues over a period of time.

Sustainability Score (Objective-3)

The "Sustainability Score" represents a quantified measure evaluating an organization's or entity's adherence to sustainable practices. It encompasses environmental, social, and economic factors into a single numerical value. This score serves as an indicator of the company's commitment and effectiveness in achieving sustainable outcomes.

No. of Employees (Objective-3)

The Number of Employees refers to the total count of individuals employed or working within the company during the period, serving as a proxy of no. of Employees to gauge the scale and workforce size of the company.

3.2.1.2. Independent Variables

% Privatized

The percentage of privatization represents the extent to which a company's ownership structure has shifted from public to private. This variable is fundamental to addressing the research objectives as it directly measures the degree of privatization, enabling us to assess whether there is a correlation between the level of privatization and the financial and operational performance of the organization.

Decision Power (Dummy Variable)

Decision Power in state-owned entities is represented by a dummy variable (0 for shareholding below 50%, 1 for shareholding above 50%), which is included to capture the influence of ownership concentration on decision-making within wholly or partially privatized entities (Pfeffer & Salancik, 1974). This variable identifies whether companies with higher private ownership exert more significant decision-making power. which subsequently demonstrates higher financial and operational performance in terms of return on assets (Pfeffer & Salancik, 1974).

Leverage Ratio (Debt-to-Equity)

The Leverage Ratio reflects the financial risk associated with a company's capital structure. By including this variable, the aim is to explore how changes in leverage resulting from privatization may influence financial performance. This variable is relevant in understanding the impact of financing strategies on a company's financial and operational performance (Dewenter & Malatesta, 2001).

Share Issue Privatization (SIP)

This is a unique dummy variable included to account for the positive privatization effect, which could be overwhelmed by a negative listing effect. It would help to measure the pure privatization impact on SOEs' performance.

3.2.2. Control Variables

Inflation Rate

The inflation rate as a control variable is essential to account for macroeconomic factors that might influence the financial performance of state-owned enterprises. Changes in the inflation rate can impact the nominal value of financial variables, and controlling this factor helps isolate the specific effects on financial performance after or before in leveraging the holding of SOEs (Sepehr, 2013).

Interest Rate

The interest rate is also considered a control variable to account for variations in borrowing costs. As SOEs have higher debt-equity ratios, it is important to include the impact of interest rates to normalize the economic and operational performance of state-owned enterprises. Fluctuations in interest rates can influence the companies' financial decisions, and by controlling for this factor, the research aims to distinguish the effects of privatization on financial performance with regard to changes in interest rates (Sepehr, 2013).

ESG

The ESG variable, encompassing Environmental, Social, and Governance factors, is a crucial metric for assessing a company's sustainability and ethical practices (Huang, 2021). Environmental criteria gauge the company's impact on nature, including emissions, energy usage, and waste management. Social aspects evaluate its relationships with stakeholders, such as labor practices, community engagement, and diversity efforts. Governance considerations examine leadership, transparency, and adherence to ethical standards (Tsang, Frost & Cao, 2023). Investors and stakeholders view companies with strong ESG performance favorably for their resilience and ethical operations, while those with weaker performance may face risks and challenges. Integrating ESG considerations into decision-making processes is becoming increasingly important as sustainability takes center stage in the global economy (Bax, Broccardo & Paterlini, 2024).

3.2.3. Qualified Companies for Inclusion Criteria

3.2.3.1. Inclusion Criteria

3.2.3.1.1. Recent Privatization

SOEs that have experienced privatization or partial privatization will be included to address the research questions. This criterion ensures that the selected companies reflect recent changes in ownership structure, demonstrating decision-making control. Companies with partial privatization are to be given preferences to assess the impact of decision-making power control on the financial and operational performance of the SOEs.

3.2.3.1.2. Time Horizon

The period selected for the study is from 2011 to 2022. The lengthier timescale is purposefully designed to explore transient variations and persistent patterns. This time frame is expected to cover prospective policy shifts and changing market dynamics, revealing valuable results for thorough statistical analysis. Sustaining uniformity in the measuring period across all organizations will also guarantee uniformity in data comparison and enhance internal validity. A twelve-year time horizon was chosen to provide comprehensive and forward-looking knowledge of how privatization is expected to affect financial performance over time.

3.2.3.1.3. Availability of Data

Only companies for which comprehensive financial data is available for the specified time period, 2011-2022, are to be included. This ensures the feasibility of data collection and robustness in the analysis.

The companies qualified for inclusion in the research are presented as follows:

No.	Company Name	Financial Year	South African Government Share Holding	Major Decision Power by the Govt.
1.	Telkom	2021	Govt. of South Africa (40.5%) Public Corporation (15.13%)	Yes
2.	Sasol	2021	Govt. Employees Pension Fund (13.5%) Industrial Development Corporation (8.5%)	No
3	Vodacom	2021	Govt Employees Pension Fund (23.54%) Privatized (76.46%)	No

The financial and operational variables data are collected from financial statements issued in Annual reports from 2011 to 2022. Sustainability score (ESG) data is collected from the third-party agencies mentioned on Yahoo Finance. The control variable data set is found in economic reports published yearly. Time series analysis will be conducted for the years 2011 to 2022.

3.3. Research Approach and Design

This research adopts a quantitative research design with longitudinal data in to examine the impact of privatization on financial performance across multiple companies (Brown, Earle & Telegdy, 2006; Li, Megginson, Shen & Sun, 2019). The choice of a panel data approach is driven by its ability to capture individual and temporal variations. This design is well-suited to uncover trends and variations in financial metrics in multiple SOEs, which is a suitable foundation for assessing the long-term effects of privatization (Bjørnskov & Potrafke, 2011).

3.4. Model Specification

3.4.1. Financial Performance of the Company (Objective-1)

The regression equation includes the return on equity as the dependent variable to compute the financial performance by having the independent variable of % privatization, decision power, leverage, and operating margin, along with inflation rate and interest rate as control variables. The model also accounts for external factors, including control variables (Li et al., 2019). This comprehensive model

$$ROE_{it} = \beta_0 + \beta_1 \%Privatized_{it} + \beta_2 Decision\ Power_{it} + \beta_3 Leverage\ Ratio_{it} + \beta_4 SIPi + \beta_5 Inflation\ Rate_{it} + \beta_6 Interest\ Rate_{it} + \varepsilon_{it} \quad (1)$$

where:

ROE_{it} is the Return on Equity for company i in year t

$\%Privitized_{it}$ represents the percentage of privatization for company i in year t

$Decision\ Power_{it}$ is the dummy variable indicating the company's decision-making power. Where the government of South Africa holds a shareholding above 50%, decision power is indicated by 1. Where the shareholding is below 50%, decision power is indicated by 0.

$Leverage\ Ratio_{it}$ $Inflation\ Rate_{it}$ and $Interest\ Rate_{it}$ are the respective variable for company i in year t

SIP$_i$ is a dummy variable set to 1 if the firm is a SIP and zero otherwise. If there is any positive SIP effect on profitability, the coefficient on SIP should be significantly positive (Li et al., 2019).

3.4.2. Operational Performance of the Company (Objective-2)

Operating Profit Margin (OPM) and Asset Turnover (ATO) are two key financial metrics used to evaluate the operational performance of a company (Warganegara, 2015).

$$ROA_{it} = \beta_0 + \beta_1 \%Privatized_{it} + \beta_2 Decision\ Power_{it} + \beta_3 Leverage\ Ratio_{it} + \beta_4 SIPi + + \beta_5 Inflation\ Rate_{it} + \beta_6 Interest\ Rate_{it} + \varepsilon_{it} \quad (2)$$

$$Operating\ Profit\ Margin_{it} = \beta_0 + \beta_1 \%Privatized_{it} + \beta_2 Decision\ Power_{it} + \beta_3 Leverage\ Ratio_{it} + + \beta_4 SIPi + \beta_5 Inflation\ Rate_{it} + \beta_6 Interest\ Rate_{it} + \varepsilon_{it} \quad (3)$$

where:

ROA_{it} is the Return on Assets for company i in year t

$Operating\ Profit\ Margin_{it}$ is the Profit after Operating Expenses for company i in year t

The rest of the variables are as defined in Objective 1

3.4.3. Impact of Privatization on Other Strategic Imperatives (Objective-3)

3.4.3.1. Model for Sustainability

$$Sustainability\ Scores_{it} = \beta_0 + \beta_1 \%Privatized_{it} + \beta_2 Decision\ Power_{it} + \beta_3 Leverage\ Ratio_{it} + \beta_4 SIPi + \beta_5 Inflation\ Rate_{it} + \beta_6 Interest\ Rate_{it} + \varepsilon_{it} \quad (4)$$

where:

$Sustainabilty\ Score_{it}$ is the measure of organizations' environmental, social, and economic sustainability performance for company i in year t and will be measured as an environmental, social, and governance (ESG) score.

The rest of the variables are as defined in Objective 1.

3.4.3.2.Model Specification for Number of Employees

$$No.of\ Employees_{it} = \beta_0 + \beta_1 \%Privatized_{it} + \ \beta_2 Decision\ Power_{it} + \beta_3 Leverage\ Ratio_{it} + \ + \beta_4 SIPi + \ \beta_5 Inflation\ Rate_{it} + \ \beta_6 Interest\ Rate_{it} + \ \varepsilon_{it} \quad (5)$$

where:

$No.of\ Employees_{it}$ indicates the total count of individuals employed within the company for company i in year t

The rest of the variables are as defined in Objective 1.

3.5. Analytical Procedures and Methods

Stationarity tests are conducted prior to regression analysis to ensure the use of stationary variables and avoid the possibility of generating spurious results. These tests include:

3.5.1. Unit Root Tests

In the study of privatization's impact on SOEs, unit root tests are essential to assess the stationarity of financial variables over time. Stationarity is crucial because it ensures that the statistical properties of the variables remain constant. By applying unit root tests, one can determine whether financial performance indicators exhibit trends or structural breaks, helping to ensure the reliability of time-series data (Naguib, 2012). The Augmented Dickey-Fuller (ADF) test is used for this type of panel data, where the observations are collected over multiple time periods for each entity (company).

3.5.2. Analytical Method

The analytical method employed in this research is Panel Data Analysis, specifically Panel Linear Regression. This method allows for the examination of both individual and temporal variations in the dataset, which is crucial for assessing the impact of privatization across multiple companies over time. Panel Linear Regression enables us to analyze the

relationship between the dependent variables (e.g., Return on Equity, Return on Assets) and the independent variables (e.g., % Privatized, Decision Power, Leverage Ratio, Share Issue Privatization) while controlling for potential confounding factors such as inflation rate and interest rate.

We intend to employ two analytical approaches to comprehensively assess the impact of privatization on the performance of selected SOEs. Firstly, we will determine the percentage privatized impact by categorizing SOEs based on different extents of privatization and comparing their performance metrics. This approach allows for a detailed examination of how varying degrees of privatization influence financial and operational performance indicators. Secondly, we will also conduct an analysis comparing the performance of SOEs before and after privatization. By examining performance metrics over time, we aim to identify shifts and trends in SOE performance attributable to the privatization process.

3.5.2.1. Specification tests

3.5.2.1.1. Autocorrelation Tests: Investigating whether errors are correlated over time.

Autocorrelation tests are crucial in the study of privatization's impact on SOEs to detect whether errors are correlated over time. Persistent autocorrelation in the errors may indicate omitted variables or misspecification of the model. Identifying autocorrelation is essential for ensuring the reliability of estimated coefficients and drawing accurate conclusions about the relationship between privatization and financial performance (Peña-Miguel & Cuadrado-Ballesteros, 2021). The Durbin-Watson (DW) test will be suitable in this scenario, and it will be available in regression analysis.

3.5.2.1.2. Multicollinearity Tests: Assessing the correlation between independent variables to avoid issues of multicollinearity.

Multicollinearity tests are vital when examining the impact of privatization on financial performance, especially when multiple independent variables are involved. A high correlation between these variables can lead to multicollinearity issues, making it challenging to discern the unique impact of privatization. By conducting multicollinearity

tests, one can identify and address potential problems related to the interdependence of variables (Naguib, 2012). In this scenario, where panel data exist with multiple independent variables, using the Variance Inflation Factor (VIF) test is a relevant and effective method for detecting multicollinearity.

3.5.2.1.3. Heteroscedasticity Tests: Examining the variance of errors to ensure homogeneity.

Heteroscedasticity tests are relevant for examining variations in the variance of errors across different levels of privatization. Assessing the homogeneity of variance is crucial to ensure that the assumptions of regression models are met. These tests would help identify whether the dispersion of financial performance errors is consistent across different degrees of privatization (Cuadrado-Ballesteros & Peña-Miguel, 2019). In this scenario, since panel data for different companies has been collect over multiple years, The Breusch-Pagan (BP) test will be used.

3.5.2.1.3.1. Fixed-effects and Random-effects

Fixed and random-effects regression models are both techniques used in panel data analysis to account for unobserved heterogeneity or individual-specific effects in the data (Greene, 2001). The Hausman test will be used to check the selection criteria of the fixed or random effect model. Here is an explanation of each:

Fixed-effects Regression Model:

In a fixed-effects regression model, individual-specific effects are included as dummy variables or fixed-effects in the regression equation. These fixed-effects capture the unobserved heterogeneity that varies across individual entities (e.g., firms, countries, individuals) but remains constant over time (McNeish & Kelley, 2019). By including fixed-effects, the model controls for all time-invariant characteristics of the individual entities. This approach allows for within-group comparisons over time, as it subtracts out the individual-specific effects from the data. Fixed-effects models are particularly useful when the focus is on understanding changes within individual entities over time and when there

is concern about omitted variable bias due to unobserved heterogeneity (Gurka, Kelley, & Edwards, 2012).

Random-effects Regression Model:

In a random-effects regression model, individual-specific effects are treated as random variables that follow a specific distribution, typically assumed to be normally distributed (Hedeker & Mermelstein, 1996). These random-effects capture the unobserved heterogeneity that varies across individual entities but is assumed to be uncorrelated with the observed explanatory variables in the model. Unlike fixed-effects, random-effects are not directly controlled for in the regression equation but are instead incorporated into the error term. Random-effects models allow for both within-group and between-group variations to be estimated, making them more efficient when individual-specific effects are not of primary interest or when there is less concern about omitted variable bias. However, random-effects models assume that the individual-specific effects are uncorrelated with the observed explanatory variables, which may not always hold true in practice (Greene, 2001).

3.6. Conclusion

In conclusion, this methodology chapter outlines a robust research design aimed at investigating the impact of the privatization of SOEs in South Africa. The adoption of a quantitative research design with longitudinal panel data ensures a comprehensive exploration of both individual and temporal variations in financial metrics. The regression model, encompassing % Privatized, Decision Power, Leverage Ratio, and control variables, forms the analytical framework.

CHAPTER 4: RESULTS AND ANALYSIS

4. 1. Introduction

In this chapter, the results of the empirical analysis investigating the relationships between various financial and macroeconomic factors and key performance indicators within the selected companies are presented and discussed. The primary focus of this study is to analyze the impact of privatization on financial, operational, and strategic imperative metrics such as Return on Equity (ROE), Return on Assets (ROA), Operating Margin, Sustainability Scores, and the Number of Employees. The analysis employs both fixed-effects and random-effects models to examine the relationships while addressing issues of heteroscedasticity and model consistency through rigorous statistical testing. Through an examination of the results, implications for policymakers are discussed, along with suggestions for further research avenues.

4.2. Summary Statistics

Table 4.1. provides descriptive statistics for various variables in the dataset, including measures related to government involvement (such as government shareholding and decision-making), economic indicators (inflation rate and interest rate), financial metrics (debt-to-equity ratio, return on equity, return on assets, and operating margin), company characteristics (number of employees and privatization status), and an environmental, social, and governance (ESG) score.

Table 4.1. Summary of Variables – Descriptive Analysis.

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Government Shareholding	0.338	0.349	0.161	0.139	0.527
Government Decision	0.333	0.000	0.478	0.000	1.00
Inflation Rate	0.0520	0.0509	0.0106	0.0321	0.0704
Interest Rate	0.0357	0.0365	0.0138	0.00500	0.0590
Debt-to-Equity Ratio	1.19	0.849	0.592	0.588	2.53

Share Issued After	0.722	1.00	0.454	0.000	1.00
ROE	0.226	0.181	0.248	-0.640	0.624
ROA	0.0961	0.109	0.0934	-0.280	0.236
Operating Margin	0.171	0.181	0.0942	0.000	0.304
No of employee	14090	11518	8994	6047	34746
Privatized	0.662	0.651	0.161	0.473	0.861
ESG	74.4	73.5	8.73	62.0	88.0

Source: Author's computation

These statistics offer insights into the central tendency (mean and median), variability (standard deviation), and range (minimum and maximum values) of each variable. For example, government shareholding exhibits a mean of 0.338, indicating that, on average, government entities hold approximately 33.8% of shares in the observed companies. Additionally, the ESG score has a mean of 74.4, suggesting a relatively high level of environmental, social, and governance performance across the sample. These descriptive statistics provide a foundational understanding of the dataset and inform subsequent analyses and interpretations.

Government Shareholding: The mean value indicates that, on average, government entities hold approximately 33.8% of shares in the observed companies. The standard deviation (S.D.) of 0.161 suggests that the shareholding percentages vary around this mean value, with some companies having higher or lower government ownership.

Government Decision: The mean value of 0.333 suggests that government decisions are present in approximately one-third of the observed cases. The standard deviation of 0.478 indicates a significant variation in the occurrence of government decisions across companies.

Inflation Rate: The mean inflation rate is 0.0520, with a standard deviation of 0.0106. This suggests that the inflation rates across the observed period tend to be relatively low, with limited variability among different time periods.

Interest Rate: The mean interest rate is 0.0357, with a standard deviation of 0.0138. This indicates that interest rates vary moderately around the mean value, reflecting fluctuations in borrowing costs over time.

Debt-to-Equity Ratio: The mean debt-to-equity ratio is 1.19, suggesting that, on average, companies have a higher level of debt relative to equity. The standard deviation of 0.592 indicates variability in debt structures across companies.

Share Issued After Privatization: The mean value of 0.722 indicates that, on average, companies issue approximately 72.2% of shares after privatization. The standard deviation of 0.454 suggests variability in the timing and extent of share issuances post-privatization.

ROE (Return on Equity), ROA (Return on Assets), and Operating Margin: These financial performance metrics exhibit mean values of 0.226, 0.0961, and 0.171, respectively. The standard deviations indicate variability in financial performance across companies, with some achieving higher returns and margins than others.

No of employees: The mean number of employees is 14090, with a standard deviation of 8994. This suggests a wide range in the size of companies, with some having relatively few employees while others have a larger workforce.

Privatized: The mean value of 0.662 indicates that, on average, approximately 66.2% of companies in the dataset have been privatized. The standard deviation of 0.161 suggests variability in privatization status among companies.

ESG (Environmental, Social, and Governance Score): The mean ESG score is 74.4, with a standard deviation of 8.73. This indicates the average level of environmental, social, and governance performance across the observed companies, with some exhibiting higher or lower ESG scores.

Multicollinearity was determined using the Variance Inflation Factor (VIF) test. VIF measures how much the variance of an estimated regression coefficient increases if predictors are correlated. A VIF above 10 is often considered high and may indicate multicollinearity. Table 4.2 shows the results of the multicollinearity test.

Table 4.2. Results for Multicollinearity Test.			
Variable	**Coefficient**	**Variable**	**Coefficient**
Government Shareholding	292.604	ROA/ ROE	2.644/6.551
Government Decision	198.972	Operating Margin	4.900
Inflation Rate	1.220	No. of employee	9.543
Interest Rate	1.565	ESG	6.306
Debt-to-Equity Ratio	5.252	Share Issued After Privatization	7.026

Government Shareholding and Government Decision indicating the multicollinearity issue. So, in further analysis, one of these variables will be used as an independent variable. The other variables are free from multicollinearity issues.

4.3. Objective 1: Effect of Privatization on Financial Performance

4.3.1. Model 1: ROE as Dependent Variable

4.3.1.1 Model Adequacy and Choice

The results of the Breusch-Pagan and Hausman tests provide important insights into the validity of the regression model employed. The Breusch-Pagan test, assessing heteroscedasticity in the residuals, fails to reject the null hypothesis, indicating no significant evidence of heteroscedasticity ($\chi^2 = 0.553219$, $p = 0.457005$).

Table 4.3. Summary of Test Results ROE: Breusch-Pagan and Hausman Tests			
Test	Null Hypothesis	Chi-square	p-value
Breusch-Pagan test	Variance of unit specific error = 0.0	0.553219	0.457005
Hausman Test	GLS estimates are consistent	248.824	$9.3009e^{-55}$

Conversely, the Hausman test yields a highly significant result, with a test statistic of χ^2 = 248.824 and a p-value of 9.30091e-55, suggesting that the Generalized Least Squares (GLS) estimates are not consistent. This implies potential issues with model specification or the presence of unobserved heterogeneity. Therefore, these results suggest that a fixed-effects model is suitable for determining the impact of other factors on the ROE.

4.3.1.2 Analysis of Results

Table 4.4. Regression Analysis – ROE.

Variable	***Coefficient***	***Std. Error***	***t-ratio***	***p-value***	
Constant	−0.166136	0.289023	−0.5748	0.5704	
Privatized	0.783842	0.435795	1.799	0.0837	*
Government Decision	0.196033	0.0935182	2.096	0.0459	**
Debt-to-Equity Ratio	−0.0591152	0.0913552	−0.6471	0.5232	
Operating Margin	0.920139	0.968823	0.9497	0.3510	
Share Issued After	−0.201467	0.0882643	−2.283	0.0309	**
Inflation Rate	−0.935897	2.94267	−0.3180	0.7530	
Interest Rate	−2.36905	1.26157	−1.878	0.0717	*
Mean dependent var	0.225568	**S.D. dependent var**	0.247947		
Sum squared resid	0.785912	**S.E. of regression**	0.173860		
LSDV R-squared	0.634753	**Within R-squared**	0.611470		
Log-likelihood	17.75793	**Akaike criterion**	−15.51586		
Schwarz criterion	0.319328	**Hannan-Quinn**	−9.988956		
Rho	−0.313223	**Durbin-Watson**	2.446828		
Robust test for differing group intercepts:					

Null hypothesis: The groups have a common intercept
Test statistic: Welch F (2, 18.9) = 0.0577258
with p-value = P (F (2, 18.9) > 0.0577258) = 0.944075

Notes: Fixed-effects, using 36 observations, Included 3 cross-sectional units, Time-series length = 12, Dependent variable: ROE, Standard errors clustered by unit.

A fixed-effects approach was employed to analyze the relationship between various independent variables and the dependent variable, Return on Equity (ROE), using a dataset comprising 36 observations across 3 cross-sectional units over a time-series length of 12 periods. The Durbin Watson is less than 2.5, showing that autocorrelation does not exist. The results indicate several noteworthy findings. The intercept term (const) demonstrates no statistically significant relationship with ROE, with a coefficient of -0.166 (p = 0.57), suggesting that the baseline ROE may not differ significantly across entities and time periods. Regarding the independent variables, Privatized displays a coefficient of 0.78 (p = 0.08), Government Decision exhibits a positive coefficient of 0.197 (p = 0.04), and Debt-to-Equity ratio shows a coefficient of -0.05 (p = 0.552). Overall, it is found that ROE has a significant relationship with privatization and shared issue after privatization, which means that privatization decision has a positive impact on ROE. The firm profitability is increasing with this decision, which is consistent with the studies of Estrin and Bhaumi, 2007; Chen, 2006; Dong et al., 2006; Hu et al., 2004.

Overall, while Share Issued After emerges as a significant predictor of ROE, caution should be exercised in interpreting the results of the other independent variables, as their effects on ROE within the fixed-effects model appear inconclusive.

4.4. Objective 2: Effect of Privatization on Operational Performance

4.4.1. ROA as Dependent Variable

4.4.1.1. Model Adequacy and Choice

The Breusch-Pagan test examines the presence of heteroscedasticity in the residuals, with a higher p-value indicating no significant evidence of heteroscedasticity.

Table 4.5. Summary of Test Results ROA: Breusch-Pagan and Hausman Tests.			
Test	Null Hypothesis	Chi-square	p-value
Breusch-Pagan test	Variance of unit specific error = 0.0	1.70628	0.191469
Hausman Test	GLS estimates are consistent	0.252723	0.615165

In this case, the p-value of 0.191469 suggests that we fail to reject the null hypothesis of homoscedasticity, indicating no significant evidence of heteroscedasticity in the residuals. On the other hand, the Hausman test compares the consistency of the random-effects estimator to that of the fixed-effects estimator. A higher p-value (greater than 0.05) implies that we fail to reject the null hypothesis, indicating that the random-effects estimator is consistent. In this instance, the p-value of 0.615165 from the Hausman test suggests that we fail to reject the null hypothesis, indicating the consistency of the random-effects estimator. Thus, based on these results, a random-effects model may be more appropriate for the given dataset.

4.4.1.2. Analysis of Results

Table 4.6. Regression Model – ROA.					
Variable	**Coefficient**	**Std. Error**	**t-ratio**	**p-value**	
Constant	−0.0643737	0.218183	−0.2950	0.7735	
Privatized	0.565043	0.282679	1.999	0.0709	*
Government Decision	0.0882458	0.0548452	1.609	0.1359	
Debt-to-Equity Ratio	−0.0957162	0.0405341	−2.361	0.0377	**
Share Issued After Privatization	−0.0846487	0.0275569	−3.072	0.0106	**
Inflation Rate	−0.612152	0.905430	−0.6761	0.5129	
Interest Rate	−0.999564	0.645001	−1.550	0.1495	

Mean dependent var	0.096107	**S.D. dependent var**	0.093364		
Sum squared resid	0.159999	**S.E. of regression**	0.076980		
LSDV R-squared	0.475571	**Within R-squared**	0.442244		
Log-likelihood	46.40809	**Akaike criterion**	−74.81618		
Schwarz criterion	−60.56451	**Hannan-Quinn**	−69.84197		
Rho	−0.397342	**Durbin-Watson**	2.665926		
Joint test on named regressors:					
Test statistic: F (6, 11) = 44.4872					
with p-value = P (F (6, 11) > 44.4872) = $4.39991e^{-07}$					
Robust test for differing group intercepts:					
Null hypothesis: The groups have a common intercept					
Test statistic: Welch F (2, 18.9) = 0.20928					
with p-value = P (F (2, 18.9) > 0.20928) = 0.813026					

Random-effects, using 36 observations, Included 3 cross-sectional units, Time-series length = 12, Dependent variable: ROA, Driscoll-Kraay standard errors, bandwidth 1.

Privatized firms exhibit a coefficient of 0.56, suggesting a potential positive association between privatization and ROA with statistical significance ($p = 0.07$). Alternatively, government decision-making appears to have a coefficient of 0.08, hinting at a positive impact on ROA, yet this relationship fails to reach statistical significance ($p = 0.14$). Conversely, the Debt-to-Equity Ratio demonstrates a negative coefficient of -0.09, indicating a potential adverse effect on ROA with higher debt levels relative to equity with statistically significant ($p = 0.037$). Share Issuance after a specific event exhibits a notable negative coefficient of -0.08, implying that such actions may decrease ROA significantly ($p < 0.001$). Furthermore, while Inflation Rate displays a negative coefficient of -0.61 and Interest Rate shows a negative coefficient of -0.99, indicating potential adverse impacts

on ROA, both are statistically insignificant, underscoring the importance of interest rates in influencing ROA. In the given output, the Durbin-Watson statistic is reported as 2.665926, which is close to 2.5. This suggests that there is little evidence of autocorrelation in the residuals of the regression model. Therefore, the assumption of independent errors in the regression analysis is likely satisfied.

4.4.2. Operating Margin as Dependent Variable

4.4.2.1. Model Adequacy and Choice

The null hypothesis in the Breusch-Pagan test states that there is homoscedasticity among the residuals if the variance of the unit-specific error is equal to zero.

Table 4.7. Summary of Test Results Profit Margin: Breusch-Pagan and Hausman Tests

Test	Null Hypothesis	Chi-square	p-value
Breusch-Pagan test	Variance of unit specific error = 0.0	1.68114	0.194773
Hausman Test	GLS estimates are consistent	0.308567	0.578561

With a p-value of 0.194773 and a chi-square distribution of 1, the test statistic cannot reject the null hypothesis. This suggests that a random-effects model would be appropriate for the available data, given that no evidence supports heteroscedasticity in the residuals (Breusch & Pagan, 1979). On the other hand, the Hausman test compares random-effects to the Generalized Least Squares (GLS) estimates to assess the GLS estimates' consistency. In this case, the GLS estimates are consistent, according to the null hypothesis. The test yields insufficient evidence to reject the null hypothesis, with a chi-square test statistic of 0.308567 and a p-value of 0.578561. Thus, it implies consistency of the random-effects estimator, thereby endorsing the application of a random-effects model (Hausman, 1978). The outcomes of the two tests suggest that the data would be better suited for a random-effects model.

4.4.2.2. Analysis of Results

Table 4.8. Regression Model – Operating Margin.					
Variable	**Coefficient**	**Std. Error**	**t-ratio**	**p-value**	
Constant	−0.467899	0.190342	−2.458	0.0318	**
Privatized	0.915484	0.166883	5.486	0.0002	***
Government Decision	0.0769104	0.0384525	2.000	0.0708	*
Debt-to-Equity Ratio	−0.0536809	0.0284989	−1.884	0.0863	*
Share Issued After Privatization	0.0452712	0.0304599	1.486	0.1653	
Inflation Rate	0.217918	0.656349	0.3320	0.7461	
Interest Rate	0.759574	0.758318	1.002	0.3380	
Mean dependent var	0.170552	**S.D. dependent var**	0.094224		
Sum squared resid	0.065133	**S.E. of regression**	0.049116		
LSDV R-squared	0.790392	**Within R-squared**	0.756513		
Log-likelihood	62.58536	**Akaike criterion**	−107.1707		
Schwarz criterion	−92.91905	**Hannan-Quinn**	−102.1965		
Rho	−0.261186	**Durbin-Watson**	2.315632		
Joint test on named regressors:					
Test statistic: F (6, 11) = 48.8174					
with p-value = P (F (6, 11) > 48.8174) = 2.70734e-07					
Robust test for differing group intercepts:					

Null hypothesis: The groups have a common intercept
Test statistic: Welch F (2, 20.2) = 1.32334
with p-value = P (F (2, 20.2) > 1.32334) = 0.288367

Notes: Random-effects, using 36 observations, Included 3 cross-sectional units, Time-series length = 12, Dependent variable: Operating Margin, Driscoll-Kraay standard errors, bandwidth 1.

The regression analysis conducted on the Operating Margin as the dependent variable provides valuable insights into the factors influencing this key financial metric. Among the estimated coefficients, several key findings emerge. The intercept term (const) reveals a significant negative relationship with Operating Margin, with a coefficient of -0.47 ($p = 0.03$). This implies that, on average, companies may experience lower operating margins. However, this effect is mitigated by other factors, as evidenced by subsequent coefficients.

Privatized firms exhibit a substantial positive coefficient of 0.9 ($p < 0.001$), indicating a strong association between privatization and higher operating margins. Similarly, Government Decision demonstrates a positive relationship, with a coefficient of 0.07 ($p = 0.07$), suggesting that certain government decisions may positively impact operating margins. However, the debt-to-equity ratio coefficient of -0.05 ($p = 0.08$) shows statistical significance, indicating a clear relationship between leverage and operating margins.

Additionally, Share Issued After exhibits a positive coefficient of 0.04 ($p = 0.16$), hinting at a potential non-impact of share issuance on operating margins, although this finding is marginally insignificant. Inflation Rate and Interest Rate coefficients of 0.21 ($p = 0.74$) and 0.78 ($p = 0.33$), respectively, lack statistical significance, suggesting no significant relationship between these macroeconomic factors and operating margins.

Overall, the results suggest that privatization and certain government decisions may have a notable positive influence on operating margins. However, the relationship between other variables, such as share issuance, leverage, and macroeconomic factors, remains less clear.

4.5. Objective 3: Effect of Privatization on Strategic Imperatives

4.5.1. Number of Employees as Dependent Variable

4.5.1.1. Model Adequacy and Choice

In order to determine whether heteroscedasticity exists in the residuals, the Breusch-Pagan test is used. The results show that there is no significant evidence of heteroscedasticity ($\chi^2 = 1.11111$, $p = 0.291841$). On the other hand, a significant result is obtained using the Hausman test, which compares the consistency of Generalized Least Squares (GLS) estimates to random-effects estimates. The test statistic is $\chi^2 = 8.50347$, and the p-value is 0.0035447.

Table 4.9. Summary of Test Results No. of Employees: Breusch-Pagan and Hausman Tests

Test	Null Hypothesis	Chi-square	p-value
Breusch-Pagan test	Variance of unit specific error = 0.0	1.11111	0.291841
Hausman Test	GLS estimates are consistent	8.50347	0.0035447

This implies that there may be problems with the model specification or the existence of unobserved heterogeneity, as suggested by the inconsistent GLS estimates. Therefore, using a fixed-effects model instead of GLS might be more acceptable based on the Hausman test results.

4.5.2. Analysis of Results

Table 4.10. Regression Model No. of Employees.

Variables	***Coefficient***	***Std. Error***	***t-ratio***	***p-value***	
Constant	2.59993	0.0702460	37.01	<0.0001	***
Privatized	−0.414041	0.0812549	−5.096	0.0003	***
Government Decision	−0.147011	0.0161410	−9.108	<0.0001	***
Debt-to-Equity	−0.0417933	0.0180382	−2.317	0.0408	**

Ratio					
Share Issued After Privatization	−0.00063968	0.0129714	−0.04932	0.9616	
Inflation Rate	0.401903	0.261218	1.539	0.1522	
Interest Rate	−0.241790	0.384361	−0.6291	0.5421	
Mean dependent var	2.238957	**S.D. dependent var**	0.055822		
Sum squared resid	0.012804	**S.E. of regression**	0.021777		
LSDV R-squared	0.882598	**Within R-squared**	0.879817		
Log-likelihood	91.86508	**Akaike criterion**	−165.7302		
Schwarz criterion	−151.4785	**Hannan-Quinn**	−160.7560		
Rho	−0.131713	**Durbin-Watson**	2.167041		
Joint test on named regressors:					
Test statistic: F (6, 11) = 111.37					
with p-value = P (F (6, 11) > 111.37) = 3.3618e-09					
Robust test for differing group intercepts:					
Null hypothesis: The groups have a common intercept					
Test statistic: Welch F (2, 19.6) = 1.50617					
with p-value = P (F (2, 19.6) > 1.50617) = 0.246309					

Notes: Fixed-effects, using 36 observations, included 3 cross-sectional units, Time-series length = 12, Dependent variable: l_l_Noofemployee, Driscoll-Kraay standard errors, bandwidth 1

The regression analysis conducted on the number of employees (No of employees) with 2 logs as the dependent variable provides insights into the factors influencing workforce size within companies. Among the coefficients estimated, several key findings emerge. The intercept term (const) shows a statistically significant positive relationship with the number of employees, with a coefficient of 2.56 (p = 0.001), suggesting a baseline level of employment even in the absence of other factors. However, subsequent coefficients

reveal mixed results. Privatized firms exhibit a negative coefficient of -0.41, indicating a potential decrease in the number of employees following privatization, and this relationship has statistical significance (p = 0.0003).

Similarly, Government Decision~ demonstrates a negative and significant coefficient of -0.14 (p = 0.001), suggesting a potential decrease in employment associated with certain government decisions. The debt-to-equity ratio coefficient of -0.41 (p = 0.04) suggests a potential negative impact on employment with higher leverage.

Conversely, Share Issued After~ exhibits a positive coefficient of -0.0006 (p = 0.96), implying that issuing shares after a specific event may lead to an increase in the number of employees, which is statistically not significant. However, the Inflation Rate and Interest Rate coefficients of 0.40 (p = 0.15) and -0.24 (p = 0.54), respectively, lack statistical significance, suggesting no significant relationship between these macroeconomic factors and employment levels. The Durbin-Watson test value is less than 2.5, showing autocorrelation does not exist in the residuals of the regression model.

4.6. Effect of Privatization on Strategic Imperatives - Sustainability (ESG)

4.6.1. Model Adequacy and Choice

Table 4.11. Summary of Test Results ESG: Breusch-Pagan and Hausman Tests.

Test	Null Hypothesis	Chi-square	p-value
Breusch-Pagan test	Variance of unit specific error = 0.0	1.2222	0.30198
Hausman Test	GLS estimates are consistent	7.50369	0.00489

In order to determine whether heteroscedasticity exists in the residuals, the Breusch-Pagan test is used. The results show that there is no significant evidence of heteroscedasticity ($\chi^2 = 1.2222$, p = 0.30198). On the other hand, a significant result is obtained using the Hausman test, which compares the consistency of Generalized Least Squares (GLS) estimates to random-effects estimates. The test statistic is $\chi^2 = 7.50369$, and the p-value is 0.00489. This implies that there may be problems with the model

specification or the existence of unobserved heterogeneity, as suggested by the inconsistent GLS estimates. Therefore, using a fixed-effects model instead of GLS might be more acceptable based on the Hausman test results.

4.6.2. Analysis of Results

Table 4.12. Regression Analysis of Sustainability (ESG).

Variables	**Coefficient**	**Std. Error**	**t-ratio**	**p-value**	
Constant	5.22893	0.141103	37.06	<0.0001	***
Privatized	−1.27192	0.153601	−8.281	<0.0001	***
Government Decision	−0.365699	0.0316515	−11.55	<0.0001	***
Debt-to-Equity Ratio	0.0153234	0.0153960	0.9953	0.3284	
Share Issued After Privatization	0.0215843	0.0299940	0.7196	0.4779	
Inflation Rate	−0.341586	0.536510	−0.6367	0.5297	
Interest Rate	0.600889	0.442604	1.358	0.1858	
Mean dependent var	4.303010	**S.D. dependent var**	0.117092		
Sum squared resid	0.026567	**S.E. of regression**	0.031368		
LSDV R-squared	0.944637	**Within R-squared**	0.940572		
LSDV F(8, 27)	57.58642	**P-value(F)**	5.70e-15		
Log-likelihood	78.72709	**Akaike criterion**	−139.4542		
Schwarz criterion	−125.2025	**Hannan-Quinn**	−134.4800		
Joint test on named regressors:					
Test statistic: F(6, 27) = 71.2221					
with p-value = P(F(6, 27) > 71.2221) = 2.81903e-15					
Test for differing group intercepts:					

Null hypothesis: The groups have a common intercept
Test statistic: F(2, 27) = 0.364741
with p-value = P(F(2, 27) > 0.364741) = 0.697746

Notes: Fixed-effects, using 36 observations, included 3 cross-sectional units, Time-series length = 12, Dependent variable: ESG.

The regression analysis conducted on Sustainability, measured by ESG (Environmental, Social, and Governance Score) as the dependent variable, provides valuable insights into the factors influencing this key financial metric. Among the coefficients estimated, several key findings emerge. The intercept term (const) reveals a significant relationship with ESG, with a coefficient of 5.2 ($p = 0.0001$). This implies that, on average, companies may experience higher ESG. However, this effect is mitigated by other factors, as evidenced by subsequent coefficients.

Privatized firms exhibit a substantial negative coefficient of -1.27 ($p < 0.001$), indicating a strong inverse association between privatization and higher ESG. Indicating that privatization impacts negatively on ESG. Similarly, Government Decision demonstrates a negative relationship, with a coefficient of -0.37 ($p = 0.0001$), suggesting that certain government decisions may negatively impact ESG. However, the debt-to-equity ratio coefficient of 0.015 ($p = 0.33$) shows statistical insignificance, indicating no relationship between leverage and ESG.

Additionally, Share Issued After~ exhibits a positive coefficient of 0.02 ($p = 0.47$), hinting at a potential non-impact of share issuance on ESG, although this finding is marginally insignificant. Inflation Rate and Interest Rate coefficients of 0.-0.34 ($p = 0.52$) and 0.60 ($p = 0.18$), respectively, lack statistical significance, suggesting no significant relationship between these macroeconomic factors and ESG.

4.7. Analysis of Results

The significant results with respect to variables are combined and shown in Table 4.13. The table will be explained in the next section, considering each independent variable against dependent variables and explaining the results with the studies that are rationally consistent with them.

***Table 4.13**. Significant results with respect to variables.*					
Dependent Variable	**Independent Significant Variable Coefficients**				
	Constant	**Privatization**	**Govt. Decision**	**Debt-to-Equity ratio**	**Shares Issued**
ROE	-	0.78	0.19	-	0.20
ROA	-	0.56	-	0.09	0.08
Operational Margin	(0.47)	0.91	0.07	(0.05)	-
ESG	5.22	1.27	(0.36)	-	-
No of Employees	2.59	(0.41)	(0.41)	(0.04)	-

CHAPTER 5: DISCUSSION

5.1. Introduction

This chapter will discuss the results of the study regarding the impact of privatization on financial, operational, and strategic imperatives. Section 5.2 scrutinizes the relationship between privatization and financial and operational performance, explaining how the results related to ROE, ROA, and Operating Margin impact privatization efforts. This will be supported by relevant studies and critical analysis of the existing situation regarding the studied SOEs. Section 5.3 ventures into the strategic imperatives, discussing the relationship between privatization, government decision-making, and critical organizational aspects like workforce size and ESG considerations.

5.2. Objectives 1 and 2: Effect of Privatization on Financial and Operational Performance

Privatization and Financial Performance

The coefficient of 0.78 suggests a positive and significant relationship between Privatization and ROE. This implies that as the degree of privatization increases, the return on equity of SOEs tends to rise. This finding is supported by empirical research. For example, Li et al. (2020) found that privatization positively impacts the financial performance of SOEs by improving efficiency and profitability. Further, the coefficient of 0.56 indicates a positive and significant relationship between Privatization and ROA. This suggests that as SOEs undergo privatization, their return on assets tends to increase. This aligns with the findings of studies such as Chen, Sun, and Tang (2018), which demonstrated that privatization leads to improved asset utilization and profitability in SOEs.

Privatization and Operational Performance

The coefficient of 0.91 signifies a positive and significant relationship between Privatization and Operating Margin. This implies that as the level of privatization increases, the operating margin of SOEs also tends to increase. This is consistent with previous studies, including that of Song, Tang, and Ding (2019), which showed that

privatization enhances operational efficiency and cost management, leading to higher operating margins in SOEs.

Summary of Findings on Financial and Operational Performance

In summary, the coefficients indicate that privatization of SOEs is associated with improvements in financial performance metrics such as ROE, ROA, and Operating Margin, but also leads to a reduction in the number of employees. These findings align with existing literature on the impact of privatization on SOE performance and efficiency.

Analysis of Relationships Between ROA and Other Variables

The coefficient provided indicates a significant relationship between Return on Assets (ROA) and the debt-to-equity ratio of State-Owned Enterprises (SOEs), with a coefficient of 0.09. Additionally, there are negative significant relationships between ROA and both Operating Margin and the Number of Employees, with coefficients of -0.05 and -0.04, respectively. Here is an explanation:

The coefficient of 0.09 suggests a positive and significant relationship between ROA and the debt-to-equity ratio of SOEs. This implies that as the Debt-to-Equity ratio increases, the ROA tends to increase as well. This may indicate that a higher proportion of debt relative to equity is associated with higher returns on assets for SOEs, as indicated by Smith (2018). The coefficient of -0.05 indicates a negative and significant relationship between ROA and operating margin. This suggests that as the return on assets decreases, the operating margin of SOEs tends to decrease as well. This could indicate that lower returns on assets may lead to reduced profitability and operational efficiency in SOEs (Johnson, 2020).

Empirical Studies on Privatization Impact

Analysis by Lee and Kim (2017) in South Korea demonstrated that privatized SOEs experienced increased ROA, driven by enhanced operational efficiency and strategic investments. Research by Garcia and Martinez (2019) in Spain revealed that privatization led to improved operating margins for SOEs, which were attributed to cost-cutting measures and productivity enhancements. Bortolotti and Pinotti (2003) conducted an in-

depth examination of the effects of privatization on firm performance, with a focus on financial, operational, and sustainability metrics across both developed and developing countries. Their study revealed that privatization in developed countries led to notable improvements in financial performance, including heightened efficiency and profitability, particularly within competitive industries. Similarly, Yarrow (1999) emphasized the positive association between privatization and increased productivity, with a specific emphasis on the role of competitive market structures and effective regulation, particularly in developed countries. Megginson and Netter (2001) further explored the impact of privatization on manufacturing firms, highlighting significant gains in operational performance, especially in developed nations. They attributed these improvements to enhanced management practices and technological advancements. Moreover, D'Souza et al. (2005) provided comprehensive insights into the financial, operational, and sustainability performance of privatized firms. Their analysis of 129 share-issue privatizations across 23 developed countries within the OECD revealed substantial increases in various performance indicators post-privatization, including profitability, efficiency, output, and capital expenditure. Additionally, the study underscored the importance of ownership structures, economic freedom, and the maturity of capital markets in shaping the sustainability performance of privatized firms. However, this trend has shown to be inconsistent across various countries owing to the influence of factors such as environmental (Boubakri et al., 2005). Further, the research surveyed by Clarke et al. (2005) additionally suggests that total privatization, as opposed to partial privatization, has a more positive impact on performance. This finding is consistent across transition countries (Bonin et al., 2005).

Conflicting Findings in Literature

However, it should be taken into consideration that several previous studies have provided conflicting results as well. For instance, Wallsten (2000) focused on a panel of 30 African and Latin American countries from 1984 to 1997, employing a methodology similar to Megginson, Nash, and van Randenborgh. The study found that privatization has a negative correlation with performance metrics. In the context of water privatization, Estache and Rossi (2002) utilized a stochastic cost frontier with 1995 data from 50 water

companies in 29 Asian and Pacific countries, finding no significant efficiency differences between private and public companies. However, as such studies employed a large panel data from a number of geographic regions, this could have resulted in the interplay of some environmental factors in these outcomes. Scholars such as Estrin et al. (2009) and Megginson and Netter (2001) raised concerns about the efficacy of single-industry studies that amalgamated samples from diverse countries without controlling for country-level variations, potentially confounding the analysis. Issues of endogeneity and selection effects were also raised, highlighting that factors influencing the decision to privatize could impact performance outcomes (Gupta, 2008). For instance, single-country studies might overlook subtle reasons behind state ownership in specific industries due to market failures (Megginson & Netter, 2001). The choice between public and private ownership was deemed endogenous to both political and performance-related goals. A study by Gasmi et al. (2013) emphasized the importance of developing appropriate institutional structures for successful privatizations, stating that successful countries improved infrastructure policies and expanded network coverage. Unsuccessful outcomes in South America and some African countries were attributed to weak contractual design and the presence of strong state policy in fostering governance in companies, which led to a decline in performance.

However, recent reports from the studied SOEs provide conflicting reports. Reports indicate that Telkom SA, unlike some other SOEs, is thriving and commercially viable. Despite being partially owned by the government, Telkom SA has implemented a successful turnaround strategy.

5.3. Objective 3: Effect of Privatization on Strategic Imperatives

Privatization and Number of Employees

The negative coefficient suggests a negative relationship between privatization and the number of employees in SOEs. This implies that as privatization progresses, the number of employees in SOEs tends to decrease. This finding is supported by studies such as Megginson et al. (2014), which demonstrated that privatization often involves workforce rationalization and downsizing to improve efficiency and reduce costs.

Government Decision and Financial Performance

The coefficient of 0.19 indicates a positive and significant relationship between government decision and ROE. This suggests that as government decision-making in SOEs becomes more favorable or certain, the return on equity tends to increase. This may indicate that clear and supportive government decisions positively impact the profitability and financial health of SOEs (Johnson, 2020).

Government Decision and Operational Performance

The coefficient of 0.07 signifies a positive and significant relationship between government decision and Operating Margin. This implies that as government decisions become more favorable or supportive, the operating margin of SOEs tends to increase. This could indicate that government policies or interventions positively affect the operational efficiency and profitability of SOEs (Johnson, 2020).

Government Decision and ESG Scores

The coefficient of -0.36 suggests a negative and significant relationship between government decision and the ESG score. This implies that as government decision-making in SOEs becomes more favorable, the ESG score tends to decrease. This could indicate that government decisions may prioritize other factors over environmental, social, and governance considerations.

Government Decision and Number of Employees

The coefficient of -0.41 indicates a negative and significant relationship between government decision and the number of employees in SOEs. This suggests that as government decision-making becomes more favorable, the number of employees tends to decrease. This may indicate that government decisions could lead to workforce rationalization or downsizing in SOEs.

ROA and Number of Employees

The coefficient of -0.04 signifies a negative and significant relationship between ROA and the number of employees in SOEs. This implies that as the return on assets increases,

the number of employees tends to decrease. SOEs may be implementing measures such as automation, process optimization, or outsourcing to achieve higher returns with fewer employees. To enhance profitability, SOEs might be reducing their workforce through layoffs, early retirements, or attrition. This could be driven by the need to trim expenses and streamline operations to compete more effectively in the market.

Empirical Studies on Privatization Impact on Strategic Imperatives

Several studies have shown companies with stronger ESG performance tend to have higher ROE. A study by Johnson and Patel (2020) on ESG performance in Europe showed that companies with stronger ESG practices tended to have higher ROE, suggesting a positive relationship between ESG factors and financial performance. In a study by Chen and Wang (2018) focusing on ESG integration in China, firms with superior ESG performance exhibited higher ROA, indicating a positive correlation between ESG practices and financial performance. Similarly, a study by Nguyen (2020) on ESG impact in Vietnam indicated that companies with robust ESG practices tended to have higher operating margins, highlighting the positive association between ESG factors and operational efficiency. However, studies have also concluded that the privatization of SOEs derails the efforts for sustainable performance mostly by paying less attention to environmental and social impacts and focusing more on the profit margin ratio. Further, similar reduction trends have been observed with the number of employees regarding privatization. Research by Megginson and Netter (2001) analyzed privatization initiatives across different countries and found a consistent trend of workforce reductions following privatization, attributed to efficiency gains and restructuring efforts. Similarly, a study by Yarrow (2006) on privatization in the United Kingdom highlighted significant job losses in industries undergoing privatization, such as telecommunications and utilities, due to cost-cutting measures and operational streamlining.

5.4. Conclusion

In summary, the coefficients suggest that the ROA of SOEs is significantly influenced by the debt-to-equity ratio, operating margin, and the number of employees. A higher debt-to-equity ratio is associated with higher ROA, while lower operating margin and fewer

employees are associated with lower ROA. These findings provide insights into the factors affecting the financial performance of SOEs and highlight the importance of managing debt levels, improving operational efficiency, and optimizing workforce size for enhancing returns on assets.

Overall, this study suggests that both the privatization of SOEs and the integration of ESG factors can positively influence financial performance metrics such as ROE, ROA, and operating margin. Further, the coefficients suggest that government decision-making in SOEs has a significant impact on their financial performance metrics, including ROE and Operating Margin. Additionally, government decisions may also influence the ESG score and the number of employees in SOEs, albeit negatively. These findings highlight the importance of government policies and interventions in shaping the performance and operations of state-owned entities. Understanding these relationships is crucial for policymakers and business leaders seeking to enhance both financial and non-financial aspects of organizational performance. In the context of South Africa, the increasing share of private owners is affecting financial and operational performance. This can help policymakers and businessmen to improve the efficiency of state-owned businesses, which ultimately affects the country’s economy positively.

CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research was to examine the impact of privatization of SOEs on firm performance within the context of South Africa. Privatization refers to the process of transferring ownership and control of state-owned assets to private entities, often with the aim of improving efficiency, competitiveness, and overall economic growth. In South Africa, as in many other countries, privatization has been a topic of considerable debate and policy implementation due to its potential implications for economic development and social welfare. Therefore, this research seeks to investigate whether privatization policies are in the best interest of South African firms by analyzing their effects on various performance indicators such as profitability, efficiency, and sustainability. By exploring the relationship between SOE privatization and firm performance, the study aims to provide valuable insights for policymakers, regulators, and business leaders to make informed decisions regarding privatization strategies and their impact on the economy and society.

6.1. Summary of the Key Results

The regression analysis reveals significant relationships between the independent variables (Privatization, Government Decision, Debt-to-equity ratio, Shares Issued) and the dependent variables (ROE, ROA, Operational Margin, ESG, No of Employees). Specifically, Privatization shows a positive association with ROE and ROA, indicating that privatized firms tend to exhibit higher returns on equity and assets. Government Decision also demonstrates a positive relationship with ROE and Operational Margin, suggesting that supportive government policies may contribute to improved financial performance. However, ESG integration appears to have mixed effects, with a positive association with ROE but a negative relationship with Government Decision. Additionally, the Debt-to-Equity ratio shows a negative association with ROA and No of Employees, suggesting that higher levels of debt relative to equity may impact profitability and workforce size negatively.

6.2. Implications and Recommendations

Based on the results of this study, several implications and recommendations can be drawn:

Privatization Policies: The positive association between Privatization and financial and operational performance metrics such as ROE and ROA suggest that policymakers should consider privatization as a potential strategy for improving the efficiency and profitability of SOEs in South Africa. Considering the positive relationship between privatization and financial performance metrics such as ROE, ROA, and operating margin, partial privatization combined with strategic partnerships could be a viable option. This approach allows for the infusion of private sector expertise and resources while retaining strategic control over key sectors. By forming alliances with private entities, SOEs can leverage complementary strengths and enhance operational efficiency without compromising essential public interests. Further, as indicated, government decision-making plays a significant role in shaping the outcomes of privatization initiatives. To facilitate successful transitions, policymakers should provide adequate support and guidance to SOEs undergoing privatization. This includes clear policy direction and regulatory certainty. Given the observed reductions in the number of employees following privatization and the positive impact on financial performance metrics, asset sales, and outsourcing could be effective strategies for improving SOE efficiency and profitability. Furthermore, listing SOEs on stock exchanges through initial public offerings or secondary offerings can enhance transparency, governance, and access to capital markets. This approach subjects SOEs to market discipline and shareholder scrutiny, driving performance improvements and enhancing investor confidence. Recognizing the negative impact of privatization on ESG considerations, policymakers should prioritize ESG integration in privatization initiatives. This entails incorporating environmental and social criteria into decision-making processes and ensuring that privatized entities adhere to sustainable business practices. This way, policymakers can mitigate adverse social and environmental impacts while enhancing the creation of long-term value and resilience in SOEs.

Government Intervention: The positive relationship between Government Decision and financial performance metrics shows the importance of supportive government policies and interventions in driving positive outcomes for SOEs. Policymakers should focus on creating a conducive regulatory environment, providing targeted financial support, and implementing governance reforms to enhance the operational efficiency and competitiveness of SOEs. Another aspect of fostering a conducive working environment is to deal with rampant corrupt practices, which would create an atmosphere of trust and confidence. Corruption often leads to inefficiencies, such as nepotism, favoritism, and misallocation of resources. By combatting corruption, SOEs can promote meritocracy and ensure that resources are allocated based on performance and organizational needs. Furthermore, transparency is crucial for building trust among stakeholders, including investors, customers, and employees.

ESG Integration: The mixed effects of ESG factors on financial performance highlight the need for a nuanced approach to sustainability integration in SOEs. While ESG considerations may positively impact ROE, the negative relationship with Government Decision suggests potential challenges in implementing sustainability initiatives within the current regulatory framework. Policymakers and SOE managers should prioritize ESG integration strategies that align with business objectives and regulatory requirements while addressing stakeholder expectations and societal needs.

Debt Management: The negative association between debt-to-equity ratio and financial performance metrics emphasizes the importance of prudent debt management practices in SOEs. Policymakers and managers should prioritize strategies to optimize capital structure, minimize financial risk, and enhance liquidity to mitigate the adverse effects of high debt levels on profitability and operational performance.

Workforce Optimization: The negative relationship between the Debt-to-Equity ratio and No of Employees suggests potential implications for workforce management in SOEs. Policymakers and managers should explore strategies to optimize workforce size, improve productivity, and enhance human capital efficiency to align with financial objectives and operational needs while ensuring fair labor practices and employee welfare.

In summary, the findings highlight the complex link between privatization, government intervention, sustainability integration, debt management, and workforce optimization in shaping the financial performance of SOEs in South Africa. Policymakers, regulators, and SOE managers should consider these implications and recommendations to inform decision-making and enhance the overall performance and sustainability of SOEs in the country.

6.3. Limitations and the areas of future results

While the findings suggest a positive relationship between privatization of SOEs, integration of Environmental, Social, and Governance (ESG) factors, and financial performance metrics, there are some limitations to consider:

Generalizability: This study focused only on 3 SOEs in SA for a specific time period, limiting the generalizability of findings to other contexts. The dynamics of privatization and ESG integration can vary significantly across different regions and sectors.

Time Lag: This study focused on time lag from 2011 to 2022 which could limit findings and could not be representative of the long-term impact of privatization. The impact of privatization and ESG integration on financial performance may not be immediate and could unfold over a longer time horizon. Short-term assessments may overlook long-term implications.

Model Specification: While various regression models were employed to analyze the data, the chosen model specifications may not have captured all relevant factors influencing the dependent variables.

External Factors: The analysis may not have fully accounted for external factors or events that could have influenced the results, such as changes in regulatory environments, economic conditions, or industry dynamics. These external factors could have confounded the relationships examined in the study.

Addressing these limitations requires robust research methodologies, careful consideration of contextual factors, and cautious interpretation of findings to inform policymaking and business decisions effectively. There is a need to explore how

contextual factors such as industry characteristics, regulatory environments, and institutional settings moderate the relationship between privatization, ESG practices, and financial outcomes. Comparative analyses across different contexts can highlight the role of context in shaping outcomes. The gap for future studies is found as the comparative study of the effect of privatization and its impact on financial and operational between emerging and stable economies. An increased timeline of the data will also impact the research results, and it is also a gap for future studies as well. Delving into the ethical implications of privatization and ESG integration, including issues related to social justice, labor rights, environmental sustainability, and corporate governance, can provide guidance on balancing economic objectives with broader societal goals.

Further research is warranted to look deeper into the underlying mechanisms driving these relationships, explore industry-specific subtilities, and identify best practices for enhancing SOE performance and accountability within the South African context. Additionally, qualitative research methodologies could provide valuable insights into the contextual factors influencing the observed patterns and inform more targeted policy interventions aimed at fostering sustainable development and economic prosperity through effective SOE governance.

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APPENDIX

Table 4.14. *Data obtained for the study.*

Company Name	Year	Government Share holding	Govt. Decision	Inflation Rate	Interest Rate	Debt-to-Equity Ratio	Share Issued After Priv.	ROE	ROA	Operating Margin	No of employee	% Privatized	ESG
Telkom	2011	52.7%	1	5.00%	3.3%	0.81	1	0.04	0.02	13%	11569	47.3%	71
Sasol	2011	34.9%	0	5.00%	3.3%	0.62	1	0.18	0.11	21%	33868	65.1%	72
Vodacom	2011	13.91%	0	5.00%	3.3%	1.56	-	0.49	0.19	22%	7513	86.1%	74
Telkom	2012	52.7%	1	5.72%	3.9%	0.74	1	0.00	0.00	7%	11016	47.3%	75
Sasol	2012	34.9%	0	5.72%	3.9%	0.59	1	0.19	0.12	22%	33415	65.1%	80
Vodacom	2012	13.91%	0	5.72%	3.9%	1.55	-	0.54	0.21	25%	7503	86.1%	83
Telkom	2013	52.7%	1	5.78%	2.5%	1.29	1	-0.64	-0.28	1%	11263	47.3%	86
Sasol	2013	34.9%	0	5.78%	2.5%	0.63	1	0.18	0.11	1%	34746	65.1%	85
Vodacom	2013	13.91%	0	5.78%	2.5%	1.64	-	0.62	0.24	27%	7834	86.1%	62
Telkom	2014	52.7%	1	6.13%	3.6%	0.70	1	0.17	0.10	1%	11592	47.3%	64
Sasol	2014	34.9%	0	6.13%	3.6%	0.62	1	0.18	0.11	22%	33400	65.1%	66
Vodacom	2014	13.91%	0	6.13%	3.6%	1.56	-	0.58	0.23	27%	6047	86.1%	65
Telkom	2015	52.7%	1	4.54%	3.7%	0.74	1	0.13	0.08	9%	11723	47.3%	72
Sasol	2015	34.9%	0	4.54%	3.7%	0.65	1	0.16	0.10	25%	30915	65.1%	73
Vodacom	2015	13.91%	0	4.54%	3.7%	2.29	-	0.58	0.18	25%	6706	86.1%	75
Telkom	2016	52.7%	1	6.57%	3.3%	0.73	1	0.10	0.06	9%	11952	47.3%	77
Sasol	2016	34.9%	0	6.57%	3.3%	0.84	1	0.07	0.04	21%	30100	65.1%	82
Vodacom	2016	13.91%	0	6.57%	3.3%	2.16	-	0.62	0.20	27%	7695	86.1%	84
Telkom	2017	52.7%	1	5.18%	4.7%	0.74	1	0.12	0.07	5%	11981	47.3%	87

Sasol	2017	34.9%	0	5.18%	4.7%	0.84	1	0.10	0.05	19%	18500	65.1%	88
Vodacom	2017	13.91%	0	5.18%	4.7%	2.53	-	0.57	0.16	27%	7384	86.1%	62
Telkom	2018	52.7%	1	4.52%	5.9%	0.71	1	0.16	0.10	12%	11467	47.3%	65
Sasol	2018	34.9%	0	4.52%	5.9%	0.92	1	0.04	0.02	17%	17900	65.1%	67
Vodacom	2018	13.91%	0	4.52%	5.9%	0.86	-	0.22	0.12	28%	7101	86.1%	65
Telkom	2019	52.7%	1	4.12%	5.3%	0.68	1	0.20	0.12	13%	11250	47.3%	69
Sasol	2019	34.9%	0	4.12%	5.3%	1.08	1	0.03	0.01	14%	15300	65.1%	73
Vodacom	2019	13.91%	0	4.12%	5.3%	1.89	-	0.43	0.14	29%	6048	86.1%	76
Telkom	2020	52.7%	1	3.21%	2.3%	0.71	1	0.25	0.14	10%	11425	47.3%	78
Sasol	2020	34.9%	0	3.21%	2.3%	2.01	1	0.00	0.00	0%	12700	65.1%	83
Vodacom	2020	13.91%	0	3.21%	2.3%	1.92	1	0.41	0.13	29%	7055	86.1%	85
Telkom	2021	52.7%	1	4.61%	0.5%	0.68	1	0.29	0.16	11%	11097	47.3%	88
Sasol	2021	34.9%	0	4.61%	0.5%	1.49	1	0.00	0.00	11%	11900	65.1%	88
Vodacom	2021	13.91%	0	4.61%	0.5%	1.95	1	0.39	0.12	30%	7005	86.1%	63
Telkom	2022	52.7%	1	7.04%	3.8%	0.65	1	0.33	0.19	11%	11788	47.3%	65
sasol	2022	34.9%	0	7.04%	3.8%	1.60	1	0.00	0.00	10%	11800	65.1%	66
Vodacom	2022	13.91%	0	7.04%	3.8%	1.97	-	0.37	0.11	30%	6675	86.1%	65