

**University of KwaZulu-Natal**

**An analysis of capital expenditure for South African ports: trends and  
stakeholders' comments**

**By**

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**A dissertation submitted in partial fulfilment of the requirements for the  
degree**

**Master of Business Administration**

**in the**

**College of Law and Management Studies**

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## **ABSTRACT**

This study analyses capital expenditure trends at the South African ports from financial years 2018/19 to 2022/23, with a focus on stakeholders' viewpoints and underlying challenges. Transnet National Ports Authority, a part of Transnet SOC Ltd, oversees the operation and administration of South Africa's eight commercial ports, which play a critical role in facilitating maritime trade. South Africa's strategic location along global trade routes emphasizes the importance of its ports, which are state-owned and administered by Transnet SOC Ltd via TNPA. South Africa's ports are given importance to the national economy and understanding capital expenditure and its implications is critical for improving operational efficiency and competitiveness in the maritime sector. The National Ports Authority is crucial in assuring the proper running of the country's port infrastructure, which is vital for economic progress. The study addresses concerns regarding the effective implementation of capital expenditure in the ports sector, identifying key challenges and exploring possible incentives to improve spending efficiency. The research employs a mixed-method approach, utilizing secondary data from publicly available documents, such as Records of Decision documents, Annual Financial Statements (AFS) available on the Transnet Group, the Tariff Methodology Manuals of the Ports Regulator of South Africa, various tariff applications from TNPA, and feedback from stakeholders on the TNPA tariff application. Additionally, the study employs primary data collected through purposive interviews with four individuals who have been directly involved and have expertise in capital expenditure decision-making processes. The study also examines stakeholder's concerns and recommendations related to tariff regulations and capital investment strategies. This research contributes to the discourse on port infrastructure investment, offering recommendations for improving capital expenditure processes at NPA. The insights gained from this analysis are intended to inform policymakers and industry stakeholders, fostering a collaborative approach to enhance the effectiveness of capital investments in the port sector. Ultimately, this study highlights the importance of strategic capital expenditure in supporting South Africa's economic growth and its position in the global maritime sector.

Keywords: Capital expenditure, Ports, Port Pricing, Tariff Methodology, Transnet National Ports Authority.

## Table of Contents

DECLARATION .....	ii
ACKNOWLEDGEMENTS .....	iii
ABSTRACT .....	iv
List of Figures .....	viii
List of Tables .....	viii
ACRONYMS .....	ix
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1 Introduction and Background of the Study .....	1
1.2 Problem Statement .....	3
1.3 Aim of the study .....	4
1.4 Research Questions .....	4
1.5 Research Objectives .....	5
1.6 Importance of the Study .....	5
1.7 Research Methodology .....	6
1.8 Data Collection Methods .....	6
1.9 Dissertation Structure .....	7
1.10 Chapter Summary .....	8
CHAPTER TWO .....	10
LITERATURE REVIEW .....	10
2.1 Introduction .....	10
2.2 South African Ports .....	11
2.3 South Africa's Port Doctrine System .....	14
2.3.1 Anglo-Saxon Doctrine .....	15
2.3.2 European (Continental) Doctrine .....	15
2.3.3 Asian Port Doctrine .....	16
2.4 The Required Revenue Model .....	17
2.5 Regulatory Asset Base (RAB) .....	21
2.5.1 Tariff Methodology and RAB Valuation Approaches .....	21
2.5.2 Asset Management Framework: Fixed Asset Register (FAR) .....	23
2.5.3 Capital Assets and Capital Work In Progress (CWIP) .....	23
2.6 Market Demand Strategy .....	23
2.7 Port Capital Expenditure .....	25
2.8 Durban Dig Out Project .....	28

2.9	Capital Expenditure in a Regulated State-owned Enterprise .....	29
2.10	Impact of Underspending on South Africa’s Port.....	30
2.10.1	Economic Impact and Operation Phakisa.....	32
2.11	Global Rankings of Container Ports: A Comparative Performance Overview .....	34
2.12	Gross Fixed Capital Formation (GFCF) .....	36
2.13	Contributing Factors to a Lack of Capital Investments .....	37
2.14	Stakeholders Perspective .....	38
2.15	Private Public Partnership in Ports .....	41
2.16	Chapter Summary .....	43
	CHAPTER THREE .....	44
	RESEARCH METHODOLOGY.....	44
3.1	Introduction.....	44
3.1.1	Aim of the study .....	44
3.1.2	Research Objectives .....	44
3.2	Research Methodology .....	45
3.3	Research Approach .....	45
3.4	Data Collection .....	46
3.5	Data analysis.....	50
3.5.1	Thematic Analysis.....	51
3.6	Targeted Population.....	54
3.7	Sampling Techniques.....	54
3.8	Validity and Reliability.....	55
3.8.1	Validity .....	55
3.8.2	Reliability .....	56
3.9	Ethical Consideration.....	57
3.10	Limitations of the Study.....	58
3.11	Chapter Summary .....	59
	CHAPTER FOUR.....	60
	PRESENTATION AND DISCUSSION OF RESULTS AND FINDINGS.....	60
4.1	Introduction.....	60
4.2	Capital Expenditure Investments .....	61
4.3	Themes on South African Ports Tariff Application and Capital Expenditure .....	63
4.3.1	Lack of spending and lifespan of infrastructure .....	65
4.3.2	Contributing factors and Consequences of underspending.....	68
4.3.2.1	Contributing Factors .....	69
4.3.2.2	Consequences of underspending.....	70

4.3.3	Measures and incentives to accelerate CAPEX.....	72
4.3.4	Regulatory Asset Base.....	74
4.3.5	Tariff above inflation.....	76
4.3.6	Tariff Methodology.....	80
4.3.7	Profitability and Cross-subsidization.....	81
4.3.8	Impact on Economy and Monopoly Power.....	82
4.3.9	Job opportunities.....	84
4.3.10	Unresolved Issues.....	85
4.3.11	Port Congestion.....	86
4.3.12	Global competition.....	88
4.4	Discussion.....	89
4.5	Chapter Summary.....	97
	CHAPTER FIVE.....	99
	CONCLUSION AND RECOMMENDATIONS.....	99
5.1	Introduction.....	99
5.2	A Summary of Findings relevant to each research objective.....	100
5.2.1	To analyse the capital expenditure trend at South African ports from the financial year 2018/19 to 2022/23.....	100
5.2.2	To evaluate the stakeholder's comments about capital expenditure at South African ports from FY 2018/2019 to 2022/23.....	101
5.2.3	To investigate the contributing factors and challenges faced by the South African ports in the implementation of Capital projects.....	102
5.2.4	To ascertain whether any/incentives can be put in place to accelerate spending on Capital projects.....	103
5.2.5	To investigate the underlying consequences of underspending on Capital expenditure at South African ports.....	104
5.3	Recommendation of the study.....	104
5.4	Limitations and Areas for Future Research.....	106
5.5	Conclusion from the study.....	107
6.	REFERENCES.....	108
7.	APPENDICES.....	123
	Appendix A: Informed Consent Form.....	123
	Appendix B: Interview Schedule.....	126
	Appendix C: Ethical Clearance.....	127

## **List of Figures**

- Figure 2.1 Geographical location of commercial ports in South Africa
- Figure 2.2 Cargo handled by ports of South Africa (Expressed in metric tons)
- Figure 2.3 TNPA's Capital expenditure trends (R'billion)
- Figure 4.1 Analysis of the South African port's capital expenditure over the 5-year period
- Figure 4.2 Inflation Rate NPA Tariff Increase Requested and Approved

## **List of Tables**

- Table 2.1 TNPA's revenue streams
- Table 2.2 TNPA's Infrastructure Projects
- Table 2.3 Operation Phakisa projects in different South African ports
- Table 2.4 Ten highest and lowest global ports ranking
- Table 3.1 An overview of the participants
- Table 3.2 Summary of the number of stakeholder comments submitted
- Table 4.1 Themes and codes discovered from content analysis

## ACRONYMS

ACSA	Airports Company South Africa
BER	Bureau of Economic Research
CAPEX	Capital Expenditure
CCSA	Cement and Concrete SA
CEO	Chief Executive Officer
CHEC	China Harbour Engineering Company
CMHI	China Merchants Holdings International
CMTF	Comprehensive Maritime Transport Policy
CPI	Consumer Price Index
CPPI	Container Port Performance Index
CSC	China State Construction
CWIP	Capital Work in Progress
DCT	Durban Container Terminal
DDOP	Durban Dig-Out Project
DOT	Department of Transport
DPE	Department of Public Enterprises
DORC	Depreciated Optimised Replacement Cost
ETIMC	Excessive Tariff Increase Margin Credit
FAR	Fixed Asset Register
FISA	Fuels Industry Association of South Africa
FOB	Free on Board
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GCE	Group Chief Executive
ICTSI	International Container Terminal Services Incorporated
IMF	International Monetary Fund
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
LTPF	Long-term Planning Framework

MDS	Market Demand Strategy
MOI	Memorandum of Incorporation
Namport	Namibian Port Authority
NBV	Net Book Value
NCPP	National Commercial Ports Policy
NDP	National Development Plan
NERSA	National Energy Regulator of South Africa
NPA	National Ports Authority
NT	National Treasury
PCCSA	Port Consultative Committee of South Africa
PCS	Port Community System
PFMA	Public Finance Management Act
PPP	Public-Private Partnership
PRSA	Ports Regulator of South Africa (Ports Regulator)
RAB	Regulatory Asset Base
ROC	Return on Capital
ROD	Record of Decision
SA	South Africa
SAAFF	South African Association of Freight Forwarders
SAASOA	South African Association of Ship Operators and Agents
SADC	Southern African Development Community
SAOGA	South African Oil and Gas Alliance
SARB	South African Reserve Bank
SSA	Sub-Saharan African
SOC	State-Owned Company
SOE	State-Owned Enterprise
TEUs	Twenty-Foot Equivalent Unit
The Act	The National Ports Act no 12 of 2005
TNPA	Transnet National Ports Authority
TOC	Trended Original Cost

TPT	Transnet Port Terminals
UNCTAD	United Nations Conference on Trade and Development
VoA	Value of Assets

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Introduction and Background of the Study

South Africa is occupying an essential position on the world map, strategically situated along crucial maritime trade routes. Positioned at the significant east-west and north-south routes, the country holds huge potential to elevate its influence within the global seaborne commerce (Chasomeris and Gumede, 2022). “South Africa's ports are publicly owned and managed by the state-owned company (SOC) Transnet via two operating divisions, namely Transnet National Ports Authority (TNPA), responsible for the port landlord functions, and Transnet Port Terminals (TPT), responsible for operations” (Gumede2012, p.2). Transnet National Ports Authority stands as one of the operating divisions of Transnet SOC Ltd, and the National Ports Authority plays a pivotal role in ensuring the smooth, secure, and efficient operation of the entire national ports system. The National Ports Authority manages and provides port infrastructure and marine services across South Africa's eight commercial seaports (Chasomeris, 2015). The government has approved the development of an additional port, Port Nolloth, which is owned and managed by TNPA. Port Nolloth is situated in the northwestern region of South Africa. Commercial activities at the Port Nolloth are primarily limited to the transfer of parts and supplies to vessels engaged in offshore mining operations. According to TNPA’s Port Development Framework Plan 2022, the Port Nolloth infrastructure capacity is adequate to accommodate the current cargo demand. Transnet National Port Authority is exploring the potential development of a commercial port at Boegoebaai, located about 60 km north of Port Nolloth and 20 km south of Alexander Bay (TNPA, 2022).

Given the industry dynamics, concerns surrounding competition and operational efficiency accelerated the Ports Regulator of South Africa (PRSA) formation in 2007 in line with the National Ports Act 2005 (Act No. 12 of 2005). According to “National Ports Act No. 12 of 2005” (c.5), the ports operate within a robust legislative and regulatory framework, ensuring adherence to standards while facilitating maritime activities crucial for national economic growth. In the context of South Africa, port regulation finds its definition within Section 30 of the Act, with its implementation realized through the corresponding regulations and directives stipulated under the Act. The Act established the PRSA with the main function of (a) executing

economic regulation of the ports system in alignment with the strategic objectives set forth by the government, (b) promoting equity of access to port operations, (c) monitoring the TNPA's activities to ensure compliance with the Act. The company's Memorandum of Incorporation (MOI), approved on 25 June 2013 by the Shareholder Minister, aligns with the provisions of the Public Finance Management Act (PFMA), the Companies Act, and the National Ports Act, No. 12 of 2005, as amended. As a State-Owned Enterprise (SOE), the PFMA serves as Transnet's primary legislation (Transnet, 2013). Additionally, the regulator has the duty to address industry appeals and complaints and conduct investigations into complaints against the Authority. This mandate is aimed at unlocking the pivotal role of the maritime industry in advancing the country's goals of promoting an equitable economy, stimulating capital investments, generating job opportunities, and alleviating economic hardships (Havenga et al., 2016).

Efficient infrastructure serves as a catalyst for economic growth, with SOCs playing a pivotal role due to their custodianship of a nation's extensive public infrastructure (Mayedwa, 2018). Mayedwa (2018) also cited that investing in port infrastructure entails substantial costs and commits to a lengthy lifespan. Consequently, sustaining operational efficiency becomes paramount to ensure enduring benefits for the country. Effectively, ensuring the proper maintenance and continuous investment in port infrastructure stands as a crucial priority for the ports. Transnet is committed to investing a significant R250 billion by 2050 to expand port infrastructure. This investment includes converting the former Durban International Airport site and the Bayhead Basin railway yard into additional port extensions, with the goal of increasing cargo handling capacity to 20 million TEUs annually (Dyer, 2014). Understanding the consequences of CAPEX underspending is essential for identifying strategies, policies, or incentives that can enhance the execution of capital projects, ultimately improving port infrastructure development and economic efficiency. The problem statement is discussed in the subsequent section below.

This chapter is structured as follows: Section 1.2 outlines the problem statement, Section 1.3 outlines the primary aim of the study, Section 1.4 presents the research questions, Section 1.5 defines the research objectives, Section 1.6 discusses the significance of the study, emphasizing its relevance and contribution to the field. Section 1.7 offers an overview of the research methodology used, detailing the approach taken to conduct the research. Section 1.8 describes the data collection methods, providing insight into how data was gathered to address the

research questions. Lastly, Section 1.9 provides a summary of the overall dissertation structure, outlining the organisation of the chapters that follow.

## **1.2 Problem Statement**

The government of South Africa recognizes the maritime industry as a crucial driver of economic expansion. Acknowledging the vital role of a robust transportation system, efforts are directed towards promoting competence and adequacy within this sector (Gumede, 2012). Despite the South African government's recognition of the maritime industry's importance to economic growth, persistent underspending on capital expenditure in port infrastructure continues to hinder development and operational efficiency.

The insufficient maintenance and the inadequacy of investments of port equipment are pressing concerns (Chasomeris and Gumede, 2022). Underinvestment in port infrastructure poses a significant threat, and it also leads to the inability of ports to efficiently manage increased vessel traffic, which hinders economic growth and productivity (Mthembu and Chasomeris, 2023).

This dissertation seeks to analyse trends in capital expenditure at South African ports and evaluate stakeholders' perspectives on these investments. Understanding the causes and consequences of CAPEX underspending is essential for identifying strategies, policies, or incentives that can enhance the execution of capital projects, ultimately improving port infrastructure development and economic efficiency.

Previous studies have highlighted chronic inefficiencies in project execution, leading to unspent capital allocations and regulatory challenges (Transnet, 2018; Fakir and Chasomeris, 2022). Historically, inefficiencies in project execution resulted in capital investments being classed as irregular expenditures. This mismanagement compromised confidence in the port's operational effectiveness, eventually leading to financial clawbacks and tariff modifications (Fakir and Chasomeris, 2022). Capital projects at South African ports are guided by corporate plans developed by the National Ports Authority (NPA). Yet, execution remains a persistent challenge, with only a fraction of planned projects completed annually. This underperformance has raised concerns among regulators and stakeholders, as unspent capital allocations hinder tariff approvals and delay critical infrastructure delivery (Transnet, 2018).

While policies such as the National Commercial Ports Policy (NCPP) and the Comprehensive Maritime Transport Policy (CMTP) offer a framework for port development, their

implementation has been weak and outdated (Hanock, 2020). As a result, despite approved funding through annual tariff applications, significant portions of capital expenditure remain unutilized, raising questions about the overall effectiveness of port investment and planning in South Africa (Meyiwa and Chasomeris, 2020).

### **1.3 Aim of the study**

The research aims to analyse trends in capital expenditure at South African ports and evaluate stakeholders' perspectives on these investments. The study seeks to identify patterns in capital expenditure over a period of 5 years (2018/19 to 2022/23 financial years), assess the effectiveness and efficiency of these expenditures in enhancing port infrastructure and services, and examine the comments of port stakeholders on future capital planning and investment strategies. By integrating quantitative data on capital expenditure with qualitative insights from stakeholders, the research aims to seek measures to ensure that the South African ports spend on the CAPEX. Additionally, the study aims to examine stakeholders' perspectives and identify key challenges affecting implementation. Additionally, the study seeks to explore potential incentives to accelerate capital spending and assess the causes and consequences of underspending.

### **1.4 Research Questions**

1. What is the capital expenditure trend for South African Ports from the financial year 2018/2019 to 2022/2023?
2. What are the stakeholders' comments about capital expenditure at South African ports from the financial year 2018/2019 to 2022/23?
3. What are the contributing factors and challenges the South African ports face in implementing the capital expenditure?
4. How can measures or incentives be implemented to accelerate capital expenditure?
5. What are the consequences of underspending on Capital expenditure at South African ports?

## **1.5 Research Objectives**

1. To analyse the capital expenditure trend at South African ports from the financial year 2018/19 to 2022/23.
2. To evaluate the stakeholder's comments about capital expenditure at South African ports from the financial year 2018/2019 to 2022/23.
3. To investigate the contributing factors and challenges faced by the South African ports in the implementation of Capital projects.
4. To ascertain whether any/incentives can be put in place to accelerate spending on Capital projects.
5. To investigate the underlying consequences of underspending on Capital expenditure at South African ports.

## **1.6 Importance of the Study**

The significance of analyzing capital expenditure at South African ports and understanding the trends will aid in the decision-making process. It helps identify patterns, evaluate investment effectiveness, and inform stakeholders. Havenga et al. (2016) state that under this mandate, ports are expected to align with and make substantial contributions to the state's strategic objectives, which include driving economic growth, attracting increased investment, reducing poverty, and fostering job creation. Additionally, analyzing stakeholders' comments can help to identify the factors influencing investment decisions and their impact on the authority's financial performance. This study will also offer insight into ascertaining contributing factors faced by the South African ports in implementing capital expenditure projects. Understanding the causes and consequences of underspending can help in understanding measures or incentives that can be put in place to accelerate spending on capital projects. By examining the allocation of capital funds, evaluating past investments, and understanding stakeholders' perspectives, this study seeks to provide insights into optimizing capital expenditure strategies for sustainable growth and stakeholder satisfaction.

## **1.7 Research Methodology**

The stakeholder's perspectives regarding the NPA tariff application for the years 2018/19 to 2022/23 represent the entire population of the available published submissions or comments by industry stakeholders, offering valuable insights that the Ports Regulator considers when making decisions and feedback. The data gathered on stakeholders' comments was analysed using thematic analysis. The thematic analysis entailed identifying pertinent themes and organizing the collected data into cohesive concepts and comprehensive themes. The Ports Regulator's website was the source of these documents. Transnet's integrated reports and annual financial statements for the 2018/19 to 2022/23 financial years, available on the Transnet website, were used in the study. In addition, this study uses purposive sampling and selects four individuals in their own capacity who have been directly involved or have expertise in the port's capital expenditure decision-making processes. These individuals provide additional insight or comments on the capital expenditure.

One participant was interviewed telephonically, while the other three were interviewed using Microsoft Teams. Three of the interviews were recorded and transcribed for analysis using a thematic qualitative technique, which identified major topics concerning capital expenditure at South African ports. Prior to the interviews, participants were given baseline questions to evaluate and ensure the questionnaire's relevancy. During the interviews, supplemental questions were asked based on the flow of the discussions, allowing for a more in-depth exploration of major issues and guaranteeing thorough coverage of the themes.

## **1.8 Data Collection Methods**

This study mainly adopts both secondary and primary data methodologies. The publicly available documents serve as the main source of secondary data, with specific references to statistics reports published online by TNPA, Transnet Group, and the Ports Regulator of South Africa. This study is informed by secondary data, analysed through document and content analysis as key analytical tools. Furthermore, the study draws on various sources, including the Record of Decision document, Transnet Group's Annual Financial Statements, the Tariff methodology manuals of the Ports Regulator of South, multiple TNPA tariff applications, and stakeholder's views on TNPA tariff applications from 2018/19 to 2022/23. These viewpoints

represent a sample of publicly available perspectives, offering valuable insights that the Ports Regulator considers when making decisions. Gathering secondary data gives access to a multitude of previously published work, including information previously gathered by other researchers for a different primary purpose, but is repurposed and analysed to address a specific research problem (Johnston, 2014).

To complement the publicly available information, purposive interviews were conducted with four individuals who are independent consultants and the main representatives of an organisation. The primary data collected involved conducting virtual interviews via Microsoft Teams meetings, and one interview was conducted telephonically. Interview questions were developed based on the study's objectives and relevant literature, focusing on capital expenditure and stakeholder engagement. To ensure content validity, the interview questions were reviewed by academic supervisors.

The interview questions and informed consent forms were shared with participants, along with the virtual meeting invitation. Once participants accepted the formal virtual meeting request, the investigator proceeded to perform the interview at the scheduled timeframe and date. The interview questions, together with the informed consent letter, were fully in English. The participants in the study are proficient in the English language. While most participants consented to audio recordings and signed the informed consent forms, one participant was interviewed telephonically. In this instance, detailed, manually recorded notes were taken during the conversation to ensure the participant's perspective was adequately captured. The notes focused on key responses and main themes related to the study, although the inability to record limited the verbatim transcription of their input. Efforts were made to respect the participant's autonomy and privacy while maintaining the consistency and ethical standards of the research. The absence of an audio recording for this participant was acknowledged as a potential limitation in the analysis phase, as it may have affected the depth and accuracy of the data interpretation.

## **1.9 Dissertation Structure**

The study will be presented as follows:

### **Chapter 1 – Introduction and Background of the study**

The first chapter includes an introduction and research background. The chapter further highlights the research aims and objectives, the significance of the study, and a description of the study techniques and an overview of the dissertation chapters.

### **Chapter 2 – Literature Review**

This chapter contains a summary of the study's related literature. It is devoted to the literature review, which offers a profound and critical assessment of relevant material. It will concentrate on the issue of capital expenditure trends and stakeholders' comments about the NPA.

### **Chapter 3 – Research Methodology**

The third chapter outlines the research methods utilised in the study. It clarifies a study strategy, including data collection, design, and analysis, and justifies using purposive sampling.

### **Chapter 4 – Presentation and Discussion of Results and Findings**

Chapter four provides a summary of the study's findings on the analysis of capital expenditure trends for South African ports and stakeholders' comments, which were obtained through the application of the research methodology.

### **Chapter 5 – Conclusion and Recommendations**

The final chapter presents a summary of the study's findings and draws conclusions based on the results of the data analysis. It also addresses the study's limitations and offers recommendations for future research directions. Additionally, the chapter emphasizes the significance of the research, its potential implications, and its contributions.

#### **1.10 Chapter Summary**

The first chapter provided an overview of the research, highlighting the important role that South African ports play in global maritime trade and their role the growth of the country's economic. The chapter highlighted key issues surrounding capital expenditure at these ports, including inefficiencies in project execution, regulatory challenges, and stakeholder concerns regarding underinvestment. The research problem was clearly defined, emphasizing the need to analyse capital expenditure trends and evaluate stakeholders' perspectives to improve infrastructure development and economic efficiency.

Additionally, the chapter outlined the study's objectives, which focus on identifying expenditure patterns, assessing stakeholder viewpoints, and proposing measures to enhance capital project execution. The research methodology, incorporating qualitative and quantitative data, was briefly discussed, including the collection of data methods used to support the study's objectives. Finally, the dissertation structure was presented to provide a roadmap for the research.

This chapter sets the stage for the subsequent sections, which will examine a detailed literature review, research methodology, analysis of findings, and recommendations to enhance capital expenditure efficiency in South African ports.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

Building on the foundation established in Chapter 1, this chapter provides a comprehensive review of the existing literature on capital expenditure trends at South African ports, focusing on stakeholders' perspectives regarding port investment and infrastructure development.

The "National Ports Act No. 12 of 2005" establishes a regulatory framework for South Africa's commercial ports, encompassing eight major ports. The state owns the infrastructure, while the National Ports Authority (NPA) oversees operations as a state-owned monopoly. This structure necessitates the creation of the Ports Regulator to fulfill the functions of overseeing the economic regulation of the port system in alignment with the government's strategic goals, ensuring access to ports, including the facilities and services offered within them, and monitoring the Authority's activities to guarantee adherence to the requirements of this Act. In the context of this paper, a port serves as a pivotal connection connecting land and sea transportation networks, playing a vital role within the broader supply chain infrastructure. Effective capital expenditure management is imperative to the continuous viability and smooth functioning of port administrations across the globe.

For the NPA, understanding the trends and feedback from stakeholders on capital expenditure is crucial to making well-informed decisions and developing a strategy for the efficient operation of the ports (Yousef, 2024). This review aims to explore the existing literature on the analysis of capital expenditure at NPA, focusing on trends in capital spending and stakeholders' comments.

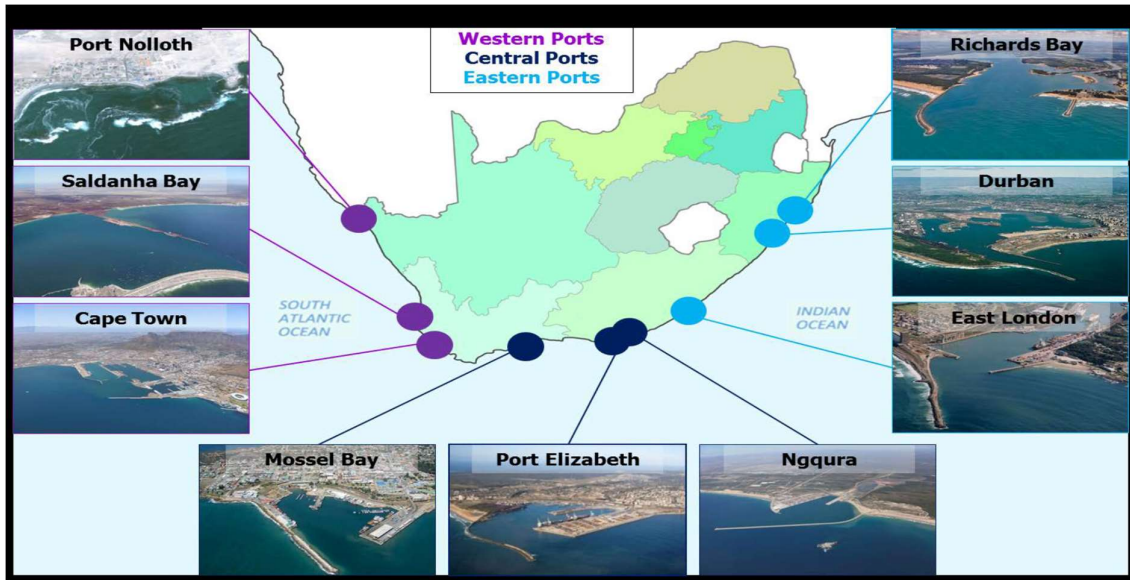
The structured of the chapter is as follows: Section 2.2 provides an overview of South Africa's ports, section 2.3 provides the ports doctrine, section 2.4 highlights the Regulatory Asset Base, providing a summarised overview of the tariff method and the valuation approaches incorporating the asset management framework, section 2.5 highlights the revenue required model and the revenue streams, section 2.6 provides an overview of the Market Demand Strategy, section 2.7 provides the port capital expenditure highlighting the infrastructure projects and an overview of the capital expenditure trends, section 2.8 highlights the capital

expenditure in a regulated state-owned enterprises, section 2.9 delves on the effect of underspending on the South Africa's ports incorporating the economic impact and the impact of Operation Phakisa, section 2.10 highlights the Gross Fixed Capital Formation, section 2.11 provides an overview of the contributing factors to lack of capital expenditure, section 2.12 highlights the stakeholders perspectives and viewpoints on the tariff application and viewpoints on improving the capital expenditure on South African ports, section 2.13 provides the contribution of the private-public partnership in the ports capital expenditure improvement. Finally, section 2.14 provides a conclusion with a summary of key insights.

## **2.2 South African Ports**

The TNPA holds a pivotal role within South Africa's (SA) transport logistics chain, overseeing the management of the country's "eight commercial seaports: Saldanha, Cape Town, Mossel Bay, Port Elizabeth, Ngqura, East London, Durban, and Richards Bay" (TNPA2019, p.1). The ports managed by the NPA extend along South Africa's coastline and stretches approximately 2,800 kilometers. The NPA manages a total of roughly 43.4 million square meters of port land, of which about 27.0 million square meters is designated as rentable area, 4.9 million square meters is classified as vacant, and the remainder comprises environmentally sensitive regions. Additionally, the NPA currently oversees approximately 750 leases across these ports (TNPA, 2019). The National Ports Authority is uniquely self-sustaining, in contrast to "most other landlord port authorities that depend on national or provincial governments for financial support" (TNPA 2019, p.1). According to Statista (2024, p1), "South Africa ranked as the highest economy in Africa, with a Gross Domestic Product (GDP) of around US\$373 billion".

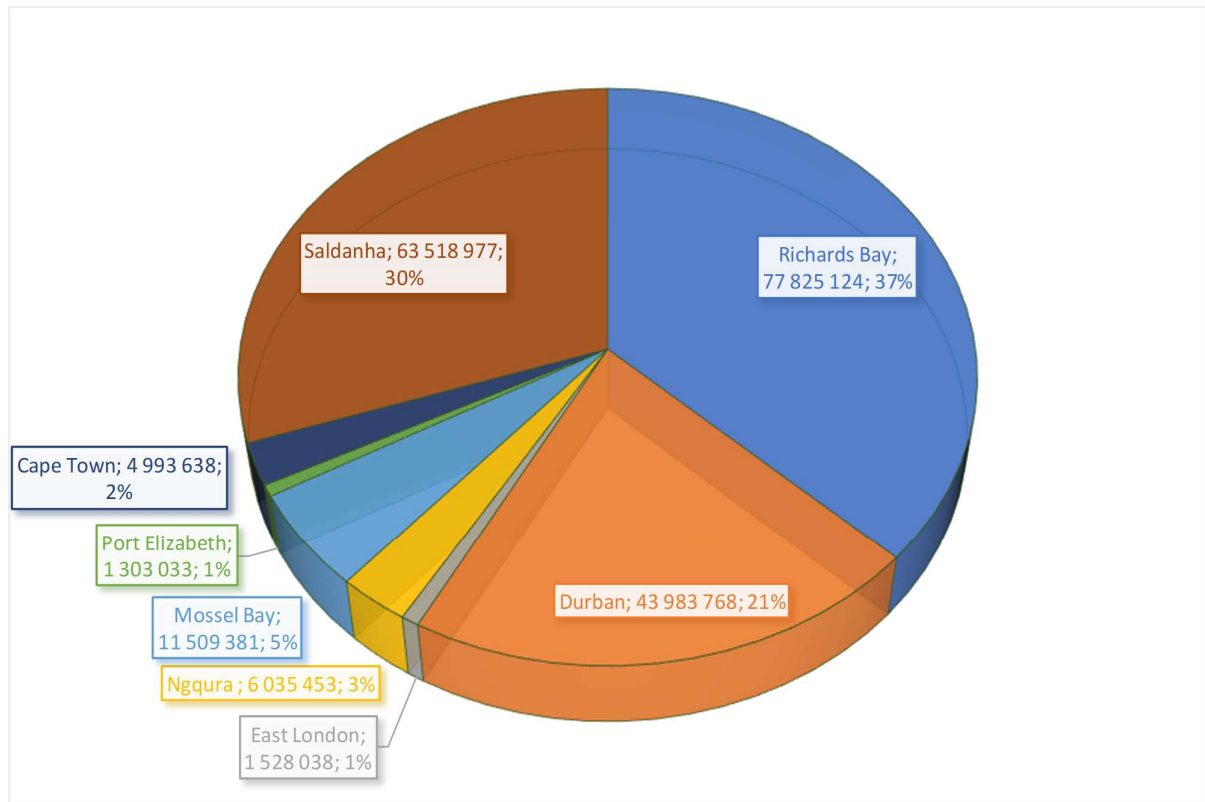
Figure 2.1 represents the Geographical location of commercial ports in South Africa.



**Figure 2.1: Commercial Ports of South Africa**

**Source: TNPA: Port Development Plan, 2017, p.203**

Lee, Wu, and Lee (2011, p.170) state that forecasting “seaborne cargo volumes” is crucial for policymakers as they design future strategies for port-related operations. The authors further cited that accurate projections of cargo traffic help inform decisions regarding port infrastructure, resource allocation, and logistics planning.



**Figure 2.2 Cargo handled by ports of South Africa (Expressed in metric tons)**

**Source: Compiled using data from TNPA, 2023.**

As indicated in Figure 2.2 above, approximately eighty-eight percent of cargo volumes are handled by the Richards Bay, Saldanha, and Durban ports. Mossel Bay, Ngqura, East London. The remaining twelve percent of cargo volumes is handled by Cape Town, and Port Elizabeth ports. According to Gumede and Chasomeris (2018), these ports remain inefficiently utilised. The authors alluded that the existing uniform cargo dues tariff system prevents port administrators from providing less expensive rates at underutilised ports to entice additional traffic. Furthermore, it limits the ability to modify prices due to congestion in busier ports, even when the same services are given, and the uniform pricing method compels the users of the port's maritime operators to subsidize infrastructure from which they do not gain immediate benefit. For instance, users at Richards Bay ports may indirectly subsidize infrastructure investments at the Port of Ngqura.

### 2.3 South Africa's Port Doctrine System

According to Meyiwa and Chasomeris (2020), two key categories have shaped what can be described as a port doctrine: “port authority pricing and port governance” (Meyiwa and Chasomeris, 2020, p.180). The authors further cited that, the port authority pricing encompasses tariff methodologies, tariff structures, and the determination of resulting fees. On the other hand, port governance addresses the legal framework governing ports, particularly focusing on the terminal operator and the landlord’s including the management structures and policies stemming from these roles. Additionally, governance encompasses port regulation, which involves the central government's role as both a policymaker and shareholder in the port industry. This dual role significantly influences pricing strategies and regulatory practices, ultimately shaping the broader operational landscape of ports.

South Africa's maritime sector is capacitated to shape the country's economic development. Port infrastructure and maritime services are designed to support eight major market segments: “iron ore, manganese, coal, chrome and magnetite, automobiles, containers, fuel, and gas” (Transnet, 2022, p.14). The growth in these areas relies on global demand, the capacity of logistical infrastructure, and the efficiency of supply chains, particularly in port operations (Transnet, 2022).

Maritime ports around the world vary greatly. According to Van Den Berg et al. (2017), a port's pricing approach is influenced by its financing structure and ownership status. The port's doctrine should align with its governance, economic policy, and price goals. Various ports throughout the world are distinct, and there is no universal strategy (Gumede and Chasomeris, 2012). The importance of considering the marine port's vision, economics, and politics while developing a port strategy is emphasized (Gumede and Chasomeris, 2012). In 1979, Bennathan and Walters recognized two prevalent beliefs that are present in the world. Maritime ports follow one of two doctrines: “European (Continental) or Anglo-Saxon”

The well-established port doctrines and the traditional landlord and comprehensive port models have guided port development for decades (Lee and Flynn, 2011). However, they do not fully capture the unique characteristics found in many Asian ports. Specifically, Asian ports often integrate features like extensive public-private partnerships, proactive government involvement, and a focus on mega-hub development, which are not adequately addressed by

traditional doctrines. Recognizing these differences, the authors advocate for the adoption of an "Asian Port Doctrine" as a third framework.

### **2.3.1 Anglo-Saxon Doctrine**

The Anglo-Saxon perspective regards ports as economically autonomous entities, highlighting the necessity for them to achieve financial sustainability by generating profits or, at a minimum, covering their operational expenses (Meyiwa and Chasomeris, 2016). The Anglo-Saxon theory advocates for ports to implement appropriate pricing strategies for their services to all users. However, public ports are generally not driven by profit maximization; rather, their primary objective is to function efficiently while ensuring equitable access and fairness in service provision. According to Meyiwa and Chasomeris (2016), the Anglo-Saxon model classifies ports as not-for-profit entities that do not receive government subsidies. Despite this, they are expected to generate adequate revenue to meet their operational expenses and finance capital expenditures. Meyiwa and Chasomeris (2016) further argued that a key assumption of ports under the Anglo-Saxon doctrine is their operational independence from government involvement. These ports enjoy a level of managerial autonomy comparable to that of private ports in all characteristics, excluding their relatively inadequate access to capital resources.

### **2.3.2 European (Continental) Doctrine**

The European (Continental) Doctrine notion values ports based on their contribution to regional development rather than income. According to European ideology, ports aim to boost the economy of their respective regions. Typically, public monies are used to build these ports. This concept is projected to reduce transportation costs, create jobs during port building, and have positive social implications (Lee and Flynn, 2011). The port's worth should not be measured in terms of its infrastructure; it should be evaluated based on the development of industry and trade in the region. According to European theory, a port must at least break even or, preferably, make a profit from current or future investments.

### 2.3.3 Asian Port Doctrine

The theory of the Asian port entails a government that serves many functions, including operator, port designer, port developer, pricing authority, investor, and mediator (Lee and Flynn, 2011). This underscores the imperative role ports play within broader hinterland economic reforms, which cannot thrive without being seamlessly integrated into the government's comprehensive developmental strategies. This approach to developmental planning is prevalent in nations such as Taiwan, South Korea, and Singapore, which are widely acknowledged as proponents of the Asian port model. In this model, the central government assumes a central role as the infrastructure developer, terminal pricing authority, and facilitator of port operations.

Lee and Lam (2017) highlighted the crucial role of central governments in Asia, particularly in Singapore, Korea, and China, in investing in port infrastructure. This investment is driven by the perception of port infrastructure as a type of social overhead capital, like highways and railways, which plays a vital role in lowering logistics costs. Meyiwa and Chasomeris (2016) cited that if TNPA aims to transition into a landlord port model, the government must acknowledge the strategic value of ports as national assets and be prepared to allocate funds for critical infrastructure through the state budget. Such investment not only facilitates the development of ports but also strengthens their competitiveness by reducing operational costs and aligning with international best practices. According to Lee and Flynn (2011), a key difference is that while marine infrastructure in Asia, particularly in China, Korea, and Singapore, is largely managed by central government agencies, these responsibilities are mainly handled by the National Ports Authority in South Africa (Meyiwa and Chasomeris, 2016). Among the principles of the Asian model, certain similarities can be observed in South Africa's port policies (Meyiwa and Chasomeris, 2020). For instance, the authors alluded that tariff determination is tightly regulated, though, in South Africa, it is managed by the TNPA together with the Ports Regulator of South Africa (PRSA). In the Asian model, the central government plays a significant role in the development and management of ports, with the objective of transforming them into hub ports that can effectively compete on the global stage (Meyiwa and Chasomeris, 2020). This approach contrasts sharply with the South African context, where Transnet Port Terminals (TPT), as a state-owned enterprise (SOE), seems to compete directly with the private sector (Havenga et al., 2023). However, Meyiwa and

Chasomeris (2020) highlighted that the key difference, often underscored by TNPA, is that in several ports, investing in marine infrastructure remains the responsibility of the government.

According to Meyiwa and Chasomeris (2016), the port governance model in South Africa lacks a clear definition and exhibits a blend of various international doctrines. The authors further alluded that some elements align with the doctrine of Anglo-Saxon, while some reflect characteristics of the Asian and Continental port models. This hybrid approach results in a mixed framework that does not fully adhere to any single established doctrine. This situation leads to conflicting port objectives within South Africa (Meyiwa and Chasomeris, 2016). However, the Asian port doctrine appears to be more compatible with South Africa's development objectives.

The Asian model underscores the significant role of the central government in multiple facets of port management, including design, development, operation, pricing, mediation, and investment (Lee and Flynn, 2011). A key feature of this doctrine is the significant national investment in substantial port infrastructure.

## **2.4 The Required Revenue Model**

The Transnet National Ports Authority and the Ports Regulator of South Africa have adopted a rate-of-return pricing strategy referred to as the Required Revenue (RR) model, which incorporates a return on assets methodology. This framework is used to establish annual tariff adjustments. The current formula for calculating the RR determines the TNPA's potential annual revenue from port users. The tariff plan, introduced in July 2015, was designed to produce cost-effective tariffs within the port system, aligning with the strategic objectives of the authority (Mthembu and Chasomeris, 2024).

(TNPA 2021 adapted):

$$“RR = (v - a + w)r + d + o + t + c + e + g” \text{ (Mthembu and Chasomeris, 2024.p.12)}$$

“where: RR=revenue required;

v=value of the assets used in the regulated services;

a=accumulated depreciation on such assets;

w=working capital;

r=regulated return on capital;

d=depreciation accounted for in the period of the tariff;

o=operating costs;

t=taxation expense;

c=claw-back;

e=excessive tariff increase margin credit;

g=weighted efficiency gains from operations”

Concerns regarding the RR pricing mechanism and TNPA's tariff policy have been raised by port users and stakeholders, including private sector business groups, government agencies, and academics, through annual submissions to the Ports Regulator of South Africa (TNPA 2023). Chasomeris (2015), Gumede and Chasomeris (2017), and Meyiwa and Chasomeris (2020) offer a comprehensive analysis and critique of the RR model. Meyiwa and Chasomeris (2020) conducted a study and analysed the content to review stakeholder submissions and revealed unjustifiable and arbitrary revenues, with sought tariff hikes above inflation. Incorrect investment returns and depreciation on regulatory assets contribute to increased NPA revenues and profits. Consequently, Meyiwa and Chasomeris (2020), Gumede and Chasomeris (2017), and Chasomeris (2015) contend that the present RR pricing system must be evaluated and improved. According to Chasomeris and Gumede (2022), TNPA has the potential to lower port authority fees and spend more on infrastructure and maritime services. According to Grater and Chasomeris (2022), reducing NPA weighted average tariffs might boost South Africa's trade competitiveness significantly.

The RR model calculates the TNPA's yearly income that would potentially come from port users. In July 2015, the tariff plan was crafted in line with the strategic pillars to generate cost-effective tariffs in the ports sector that line with strategic pillars.

Port economic regulation is enforced in multiple countries, such as Australia, Brazil, South Africa, India, Netherlands, Greece, the Philippines, Peru, and Portugal (Angelopoulos et al., 2019). According to Gumede and Chasomeris (2017), these regulatory frameworks generally focus on controlling port tariffs and are predominantly based on two main methodologies: the price cap approach and the rate of return approach. The price cap methodology sets a maximum

limit on the prices that can be charged for port services, aiming to promote efficiency and protect consumers from excessive pricing. In contrast, the rate of return methodology allows port authorities to set tariffs that enable them to achieve a specified rate of return on their investments, balancing the need for profitability with regulatory oversight to prevent monopolistic pricing.

In South Africa, the Ports Regulator of South Africa (PRSA) uses a model called revenue-required, which is based on the rate of return technique (Fakir and Chasomeris, 2022). This model is utilised to calculate the proposed tariffs for each financial year, and it assures that port users cover all infrastructure investments and operating expenses, allowing NPA to earn a risk-adjusted rate of return on port assets. Like other entities engaged in commercial port operations, the TNPA must produce revenue by imposing tariffs on its services. This revenue generation is achieved by levying fees in alignment with the tariffs authorized by the Regulator., thereby enabling the TNPA to fulfill its mandated functions as stipulated by the National Port Act (Ports Regulator of South Africa 2021). However, Gumede and Chasomeris (2018) highlighted the inherent limitations of the RR model in the framework of port tariff regulation in South Africa. Entities such as the Ports Regulator and the TNPA acknowledge that the mentioned RR framework was not specifically designed for application in ports. However, the “National Ports Act (Act No. 12 of 2005)” does not prescribe a specific pricing methodology, nor does it explicitly exclude any approach.

The absence of a more suitable alternative allowed the adoption of the RR approach as a provisional measure to guide port tariff determination. Gumede and Chasomeris (2017) emphasize that this model, while functional, may not fully address the unique complexities of port operations and infrastructure investments. They argue that this regulatory gap necessitates ongoing discourse to explore and develop methodologies better aligned with the strategic objectives and economic realities of the South African port sector.

Under the South African ports system and the National Port Act, the revenue generated by TNPA’s services is allocated for various purposes. These include maintaining essential port infrastructure, developing future port infrastructure, sustaining and expanding the marine fleet, and ensuring the upkeep and provision of facilities for existing and future ship repair (Ports Regulator of South Africa, 2017).

This method distinguishes the system of South African ports from other international ports, where project expenses are often subsidized through state or municipal budgets. (Fakir and Chasomeris, 2022). The Ports Regulator considered this method to be inappropriate but chose not to dismiss it, as it aligned with the approach adopted by the National Energy Regulator of South Africa (NERSA) (Ports Regulator, 2011). The lack of a more comprehensive tariff mechanism, the ports regulator permits the use of the RR model. This decision persists notwithstanding submissions indicating that the RR approach fails to incentivise TNPA to enhance its efficiency while it ensures TNPA's profitability regardless of inefficiencies. According to Lee and Lee (2012), the port industry's pricing concepts can be grouped into the following six types: “marginal cost pricing, cost recovery pricing, congestion pricing, strategic pricing, commercial pricing, and Asian Doctrine pricing”.

According to Chasomeris (2011), the port pricing approach and South Africa’s freight system were developed to promote import-substitution industrialization and create jobs locally; consequently, tariffs helped protect the domestic industry and promoted exports. Prior to 2002, the ports of South Africa charged prices without fully recovering the cost for a variety of operations, including marine infrastructure and services. Port dues provided inadequate revenue to cover the related expenses. While cargo handling charges came close to paying their associated costs, they fell short of complete cost recovery. As a result, revenue from cargo functions (ad valorem wharfage) was utilised to fund marine operations (Chasomeris, 2011). Table 2.1 below highlights the TNPA’s revenue streams:

**Table 2.1: TNPA’s revenue streams**

	<b>Port Infrastructure</b>	<b>Revenue Stream</b>
Port land and terminals	Lease port land to terminal operators and other port service and port facility providers in the port(s).	Lease income (rentals)
Wet infrastructure	Lighthouse services infrastructure (lighthouses, buoys, beacons and electronic / radio navigation equipment) , port control and safety, entrance channels, breakwaters, turning basins, aids to navigation within port limits, vessel traffic services, maintenance dredging within ports.	Light dues, port dues, vessel traffic services fees
Dry infrastructure	Quay walls, roads, rail lines, buildings, fencing, port security, lighting (outside terminals), bulk services and in certain cases terminal infrastructure.	Cargo dues, berth dues
Ship repair services	Provide and maintain ship repair facilities	Preparation fee, docking and undocking fees (vessels at repair facilities), berth dues (vessels at repair quays)
Marine services	Pilotage, tug assistance, berthing, running of lines, floating cranes.	Pilotage dues, tug assistance fees, berthing fees, running of line fees, floating crane hire fees

**Source: TNPA (2020, p.16)**

## **2.5 Regulatory Asset Base (RAB)**

The RAB refers to the value of the total assets where the port is permitted to gain a regulated return known as the Return on Capital (ROC), and it forms the basis for setting up a tariff and ensuring that infrastructure investments are efficiently managed while allowing TNPA to recover costs and earn a reasonable profit. This section outlines the key components, methodologies, and implications of the RAB framework within the South African port’s context.

### **2.5.1 Tariff Methodology and RAB Valuation Approaches**

The Tariff Methodology recommends using the Value of Assets (VoA) technique to calculate the RAB. However, as a result of sustainability concerns regarding the VoAs, TNPA uses the Trended Original Cost (TOC) valuation technique. While VoA adheres to modern asset

valuation concepts, its implementation carries financial risks for TNPA (TNPA, 2013). The TOC, on the other hand, tracks asset performance over time, considers depreciation, and gives a more solid valuation base. The decision to move to VoA is linked to the corporatization of TNPA, which the minister is now reviewing. Until such corporatization is established, the TNPA's RAB calculations will continue to be based on TOC, which is more appropriate for its financial structure (TNPA, 2013).

Inflation trending is a pivotal aspect of the tariff methodology employed by the TNPA, as it directly influences the RAB determination together with the Weighted Average Cost of Capital calculation (TNPA, 2013). The TNPA utilizes The Consumer Price Index (CPI) is mainly utilised by TNPA as a key indicator for adjusting financial figures to reflect inflationary pressures, relying on forecasts published by “the Bureau of Economic Research (BER)” or the National Treasury (Transnet, 2022). This approach ensures that the financial returns on assets are maintained realistically, safeguarding the economic sustainability of the TNPA’s operations. Transnet (2022) indicates that accurate inflation trending is essential for effective tariff setting, as it impacts the depreciation calculations for existing assets and the valuation of Capital Work in Progress (CWIP).

The Excessive Tariff Increase Margin Credit (ETIMC) is a regulatory mechanism that aims to manage tariff adjustments in sectors like the TNPA, particularly in response to inflationary pressures (Transnet, 2020). The ETIMC in regulated economies emphasizes the need for consumer protection in monopolistic markets. According to Payne (2020), regulatory frameworks seek to balance the financial sustainability of utility providers with the protection of consumer interests. According to Payne (2020), ETIMC is a corrective mechanism to prevent excessive tariff increases that could arise from inflation, ensuring adjustments remain reasonable and justifiable.

The ETIMC operates by allowing regulators to grant credits to utilities that exceed a specified threshold for tariff increases. This mechanism is particularly relevant in environments where inflation rates surpass expected levels, necessitating adjustments to maintain the financial viability of utility providers while safeguarding consumers from excessive costs. As noted by Borenstein, Bushnell, and Knittel (1999), such mechanisms can help stabilize prices in volatile markets and provide a buffer against sudden economic shocks. However, according to Grater and Chasomeris (2022), such a scenario, where there is a trend of consistently relying on the

ETIMC as a subsidy, is unsustainable due to the insufficient funds available in the account to support continued withdrawals.

### **2.5.2 Asset Management Framework: Fixed Asset Register (FAR)**

The Asset Management Framework at TNPA is anchored in its Fixed Asset Register (FAR), which adheres to the requirements of the Tariff Methodology. The FAR systematically tracks all assets capitalized since 1990, providing a detailed, line-by-line account of acquisitions, disposals, and transfers. To ensure accuracy and consistency, assets are depreciated annually based on their useful life, reflecting their gradual loss of value over time. For Capital Works in Progress (CWIP), depreciation is deferred until the assets are commissioned and become operational. This approach ensures that only fully functional assets contribute to the Regulatory Asset Base (RAB), aligning TNPA's practices with international standards in infrastructure asset management and promoting transparency in financial reporting (TNPA, 2013).

### **2.5.3 Capital Assets and Capital Work In Progress (CWIP)**

The RAB calculation includes CAPEX and CWIP to reflect ongoing and completed infrastructure projects. The CWIP comprises assets under construction, whereas CAPEX refers to planned infrastructure investments. These components ensure that the RAB considers the changing nature of the TNPA's asset base, hence facilitating long-term investment planning (TNPA, 2013).

## **2.6 Market Demand Strategy**

As an SOE, Transnet is required by law to support the socio-economic growth of South Africa by developing the country's infrastructure, creating jobs, and fostering the growth of small businesses and jobs. Its Market Demand Strategy (MDS) demonstrates this. The Authority's investment decisions are largely driven by detailed capital and strategic planning efforts. These initiatives focus on ensuring the availability of sufficient port infrastructure in advance of demand, optimizing vessel and cargo turnaround times, and maximizing the efficient use of assets to support ongoing business operations (Transnet, 2013).

Transnet announced the MDS in 2012 with the goal of reversing previous underinvestment in transportation infrastructure. Transnet anticipated a R300 billion investment project to expand

and upgrade rail infrastructure and South Africa's port over a duration period of 7 years and to identify South Africa's position as the transshipment hub for Sub-Saharan Africa (SSA). The strategy included plans to invest over R50 billion in new locomotives to expand its general freight operations. (Transnet, 2013). As part of this strategy, the SOE launched the largest procurement effort in its entire existence, purchasing 1064 locomotives. However, the NT and the Minister of Finance raised concerns about the project's profitability, which relied on Transnet's freight business growing above GDP growth and charging higher tariffs than inflation (Public Affairs Research Institute report (2018)). The MDS is aimed at promoting economic growth. Nevertheless, according to the Public Affairs Research Institute report (2018), the SOE's accelerated CAPEX strategy has left it exposed to corruption, particularly in procurement.

In developing the Capital Expenditure Plans, the Transnet Market Demand Strategy Report (2013, p. 24) outlines the following core strategies:

**“Long-term port development framework plans:** Port framework plans must be created by the Authority and updated on a regular basis in compliance with the Act. Each of the Authority's nine commercial ports has its own port development plan published in the National Ports Plan (NPP).

**Capacity studies:** The Authority uses simulation techniques to evaluate the present infrastructure's capacity and project future infrastructure capacity. The capacity studies are updated every two years and changed every five years or more frequently as warranted.

**Volume studies:** The most recent data for the short-term investment criteria is the basis for the expected volumes utilised in the Authority's development plans. Transnet's Freight Demand Model is used to anticipate volumes for the long-term investment guidelines.

**Prioritization:** Projects are prioritized based on compliance, long-term viability, and meeting anticipated demand.

**Maintenance Plans:** In order to maintain the safety of port infrastructure and the current port capacity, projects are coordinated with maintenance plans.

**Fleet Plans:** Robust fleet plans from the Authority guide investment in and upkeep of the maritime and aviation fleet (including tugboats, piloted vessels, survey boats, dredging vessels, and helicopters).

**Port Consultative Committees:** The Authority takes a participatory approach when creating the Capital Expenditure program and carrying out the resulting Capital Investment Plan. Port users are consulted on the short-, medium, and long-term port development framework plans and the seven-year capital investment plan. In July 2020, this port-by-port consultation took place as part of a process managed by the DoT, a secretariat provided by SAMSA. The Transnet Freight Demand Model, as stated earlier, is one of the sources of information for these plans”.

## **2.7 Port Capital Expenditure**

Efficient port operations and infrastructure investment are imperative for the shipping industry to accommodate larger vessels. Failure to invest in port infrastructure can result in decreased efficiencies, leading to extended vessel stays at the port and congestion of ships waiting at the dock to access port facilities (Mthembu, 2014; Mthembu and Chasomeris, 2023). The failure to repair the port's equipment caused congestion of cargo outside the Port of Durban, and nearly 71,000 Twenty-Foot Equivalent units (TEUs) remained stranded on vessels due to ongoing equipment breakdowns (Ebrahim, 2023).

In 2015, the TNPA and TPT allocated R37.8 million and R78.1 million, respectively for port upgrades aimed to increase capacity and improve cargo handling efficiency, anticipating increased traffic volumes. From the South African government's perspective, these capital projects are aimed at creating job opportunities (Ndlozi, 2016).

As global trade has surged in recent decades, ports have experienced a notable uptick in the volume of cargo moving between international markets (Gumede and Chasomeris, 2015). The expansion of port infrastructure is crucial to accommodate the increasing volume of international trade (Jeevan, Bandara, Saharuddin, Othman, 2015). According to Mthembu (2014), port activities grow in parallel with an increase in international trade, making investments in port infrastructure necessary. Mthembu (2014) further cited that ports are compelled to make substantial investments in infrastructure to meet the growing demands of global trade volumes, and if the port aims to maintain competitiveness on the global stage, such investments are essential. Insufficient infrastructure of transportation and ports in numerous SSA regions persists as a primary impediment to unlocking the growth potential of the region (Fraser et al., 2020).

Notwithstanding the critical need for infrastructure investments to sustain competitiveness and address the escalating demands of global trade, the Ports Regulator demonstrated a growing underspending on Capital expenditure projects over six years between 2010 and 2015 (Chasomeris, 2020). Bichou (2021) also indicated that the historical trend of the ports receiving insufficient investment persists.

Meyiwa and Chasomeris (2020) cited that the TNPA saw a substantial escalation in their annual profit before tax of 155 percent from the 2016/17 to 218/19 financial years. During the same period, TNPA's projected capital expenditure rose to R5.4 billion from R4.1 billion reported in the previous year. Surprisingly, the capital expenditure incurred plunged by fifty-five percent, dropping from R2 billion to R905 million. During the 2019/20 period, the actual capital expenditure on port infrastructure saw a modest increase to R1,598 billion (TNPA, 2020). Notwithstanding the uptrend in capital expenditure in the 2019/20 period, a downward trajectory in capital expenditure of R684 million in ports was noted in the 2020/21 financial year (TNPA, 2021). According to Grater and Chasomeris, 2022, the substantial decline was intensified by the COVID-19 pandemic, which substantially impacted the year 2020/21 performance. On a global scale, uncertainty remained due to the widespread impact of COVID-19, which was a confirmed pandemic by the World Health Organisation 2020 (Grater and Chasomeris, 2022).

In the 2022/23 Tariff application, the TNPA highlighted the following infrastructure projects:

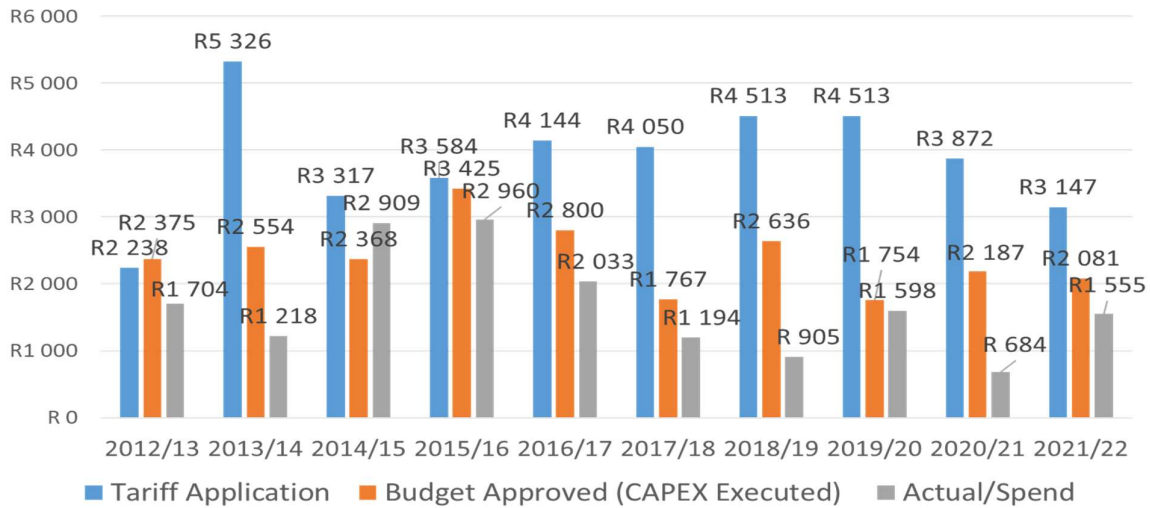
**Table 2.2 TNPA’s Infrastructure Project**

<b>Key Port Infrastructure Projects</b>	<b>Port Location</b>
Replacement of one tug	Richards Bay
Bayvue Railyard Infrastructure Upgrade	Richards Bay
Replacement of water Pipelines and Billing system	Durban
Execution - IV Sea Walls	Durban
Two Replacement Tugs	Cape Town
Acquisition of pollution control vessel	Cape Town
Two Replacement Tugs	East London
Construction of Liquid Bulk terminal	Ngqura
2nd Grab hopper dredger	Dredging

Source (TNPA, 2021, p. 23)

In the 2022/23-year, actual capital expenditure reported by TNPA was R1.5 billion, falling 38.5 percent short of the budget (TNPA, 2023). In the 2022/23 Annual Report, the TNPA cited various contributors to the underspending on capital expenditure, including the reduced spending of tank farm equipment for berths in Ngqura, rail equipment at Richards Bay in the Duine field, the purchase of two dredgers, tugboats, and refurbishment. Consequently, substantial capital needs persist within the port sector, and this significant decline in port system investment contradicts TNPA's intended increases in capital expenditure, raising significant concerns among port users, the Ports Regulator, and TNPA itself (Venter, 2024).

**Figure 2.3: TNPA’s Capital expenditure trends (R’billion)**



Source: Data compiled by the author using data from Mthembu and Chasomeris (2023) and TNPA (2024).

## 2.8 Durban Dig Out Project

The Long-term Planning Framework (LTPF) plan for the Durban Dig-Out Project (DDOP) reconstruction development was scheduled and expected to initial during 2016. However, according to Transnet's (2015b) report, the project has been withdrawn. According to Creamer (2016), the DDOP project was halted given the lower-than-expected economic growth and the significant decline in container volume growth. The DDOP project is expected to commence in 2026 on Durban International Airport's old site (Creamer, 2016).

Former Transnet Chief Executive Officer (CEO) and former Public Enterprises Minister proposed a Public-Private Partnership (PPP) plan known as a “build-operate-and-transfer” to alternatively fund the project. The property was officially handed over to Transnet from Airports Company South Africa (ACSA) in 2012 for the development of a new port (Ndlozi, 2016, p.22). The construction was aimed to offer volume to Pier 1 for a further 2.4 million TEUs, which is presently only capable of handling “700,000 TEUs” annually. The TNPA’s intention was to commence with the project in 2018, and the entity aimed to complete the project in 2023 (Ndlozi, 2016).

After withdrawing from the imminent construction of the DDOP, the TNPA is advancing with two comparatively small developments to expand the facility for cargo at the Durban port (Creamer, 2016). The author posits that efforts have shifted toward optimizing the current

capacity of the Durban port, with an initiative to integrate Salisbury Island into the Durban Container Terminal (DCT) to enhance operational efficiency. The project has incorporated the country's eight commercial ports, with a staggering amount of R54- billion, which is part of Transnet's progressing MDS (Creamer, 2016).

The Long-term Planning Framework, Transnet (2017) estimated that R28 billion in investment is needed over the next 30 years to support expansion projects at the Port of Richards Bay. Key initiatives include land acquisitions for future port development, establishing ship repair facilities and a dry dock, and constructing a Liquefied Natural Gas (LNG) facility. Likewise, R19 billion in capital is required for the Port of Saldanha Bay, with a substantial portion of 48 percent of this investment needed to address immediate growth demands and infrastructure upgrades. The LTPF (2017) further states that a major expansion of the Port of Ngqura with a total investment of R36 million is required. The expansion is necessary to support the manganese export facility relocation from Port Elizabeth and increase container terminal capacity. This update is essential to meet the demand in growth for transshipment and is in line with the TNPA capability objectives. Furthermore, the container terminal capacity is needed in the ports of Cape Town and Port Elizabeth, and the 30 years of development capital requirements in these ports are R21 billion and R14 billion, respectively. The investment required for capacity expansion at the Port of East London is estimated at R4 billion, while the investment needed for Moselle Bay is comparatively smaller, totaling R1.4 billion(Transnet, 2017).

## **2.9 Capital Expenditure in a Regulated State-owned Enterprise**

According to Decker (2023), economic regulation refers to the systematic oversight by government agencies to mitigate potential market inefficiencies and inequities. Economic regulation encompasses various forms, including monopoly regulation and price regulation (Fakir and Chasomeris, 2022). Beria et al. (2015) cited that the regulatory framework is primarily established to mitigate the potential abuse of monopolistic power, which can occur when a single entity or a small group of firms dominate a market, leading to anti-competitive practices. Bichou (2021) advocates for effective governance and regulatory frameworks to enhance port performance.

Szarzec, Dombi, and Matuszak (2021) cited that several economic justifications advocate for state ownership. Firstly, state-owned enterprises (SOEs) can address market failures by

delivering public goods and financing essential infrastructure projects. Additionally, SOEs can play a key role in stabilizing the economy by making counter-cyclical investments, meaning they increase spending during economic downturns to help smooth business cycles. They also contribute to social welfare by maintaining employment in declining industries and protecting vulnerable groups (Matuszak and Kabaciński, 2021). In the 19th century, SOEs in Western countries played a pivotal role in establishing critical infrastructure, particularly in the energy, communication, and transportation sectors. These public enterprises were instrumental in laying the foundation for industrial and economic development by ensuring the creation and expansion of essential utilities and services.

According to Thomas and Thomas (2022), price regulation, especially pertinent in transport markets, entails imposing price controls or caps to prevent excessive pricing and ensure affordability for consumers. Crew and Parker (2006) alluded that price regulation comprises the rate-of-return, price caps, required revenue, and benchmarking regulations. While price caps safeguard consumers against excessive pricing, their implementation can be administratively complex (Merkel & Sløk-Madsen, 2019). Rate of return regulation promotes long-term investment perspectives but may fall short in adequately accounting for investment risk (Chisoro, das Nair, Muzyamba, and Nontenja, 2024).

## **2.10 Impact of Underspending on South Africa's Port**

Ports are vital in the economy of the country by acting as centers of commerce, transportation, and logistics. The ports of South Africa are no different, being vital to both domestic and foreign trade (Mlambo, 2021). On the other hand, underspending on port infrastructure and upkeep can seriously harm these ports' productivity and ability to compete (UNCTAD, 2019). According to TradeMark East Africa (2019), insufficient landside networks that impede the prompt departure of containers from ports, ineffective customs and container clearing procedures, inadequate port infrastructure, and suboptimal port management are all responsible for many handling inefficiencies and prolonged container dwell times. In many developing countries, the need for deeper berths and enhanced quay walls to accommodate mega container ships exceeding 24,000 TEUs remains unaddressed (Park and Suh, 2019). As part of the KwaZulu-Natal (KZN) Ports Master Plan, which is a framework targeted at enhancing the operational proficiency and competitiveness of South Africa's port infrastructure, TNPA outlines an R154 billion initiative, significant development projects, including the

reconstruction, deepening, and lengthening of Berths 203 to 205 at Durban Container Terminal's (DCT) Pier 2 North Quay. This substantial project is scheduled to span a five-year construction period commencing in 2024 (TNPA, 2023).

The absence of a reliable rail network forces contractors to depend heavily on road transport for delivering equipment and materials. This reliance and poor road conditions often result in delays and higher transportation costs. It is worth noting that challenges at South African ports add another layer of risk, as highlighted by James, Colville, and Veldman (2024). The authors further stated that backlogs outside the Port of Durban forced an estimated seventy-nine vessels and over sixty-one thousand containers to remain idle at berth owing to operational difficulties, equipment malfunctions, and adverse weather conditions at the port. Kahyarara (2020) highlighted that inefficiencies in ports are reflected in issues such as extended container dwell times, delays in vessel clearance, protracted documentation procedures, and low container handling efficiency per crane hour are prevalent. This is despite the Durban port being ranked among the world's most active ports, as evidenced by "Lloyd's List's Top One Hundred Ports rankings" (Lloyd List, 2021).

According to Gumede and Chasomeris (2015), South Africa's port system faces a range of interconnected challenges, including inadequate infrastructure, persistent under-investment, outdated technology, and ageing machinery. Additional issues encompass limited port space, inconsistent and elevated pricing of facilities, inefficient scheduling, increasing congestion, and suboptimal functionality of equipment. The authors added that the sector is constrained by skill shortages and lack of dedicated personnel capable of making timely, informed decisions to support industry needs. These challenges collectively undermine the effectiveness and competitiveness of South Africa's port system, necessitating strategic reforms to enhance its performance and sustainability.

According to Jacobs (2023), inefficiencies within South African ports, compounded by decreased productivity due to load-shedding, led to missed export opportunities for miners and increased commodity prices. Consequently, mining output declined by 3.4 percent in the last quarter of 2022, further diminishing the sector's contribution to national GDP. As a result of Transnet's inefficiencies, the mining sector lost revenue estimated at R150 billion. The exports would have contributed R27 billion to the national fiscus (Jacobs, 2023). The author further cited that Glencore's preliminary results attributed the shortage supply of chrome ore from South Africa to logistical issues and port constraints.

## 2.10.1 Economic Impact and Operation Phakisa

The government initiative known as Operation Phakisa was launched in July 2014 to accelerate the 2030 National Development Plan (NDP) and address barriers to public service delivery (Matekenya and Ncwadi 2022). According to Operation Phakisa, growing the maritime industry is one of the Ocean economy's key goals. Veitch (2017) estimates that infrastructure development in the maritime transport industry will contribute an additional R56.5 billion to the growth of the South African economy.

The National Development Plan and Operation Phakisa, two significant South African government initiatives, have been the driving forces behind the advancement of the port infrastructure in the country (Operation Phakisa, 2015). TNPA is a proud implementer of the government's Operation Phakisa strategy, which aims to unlock the ocean's economy. This strategy includes major improvements, new facilities for ship repairs, and the development of a hub to serve the oil and gas industry. Table 2.3 below highlights the Operation Phakisa projects from different South African ports

Table 2.3. Operation Phakisa Projects in different South African Ports

<b>Operation Phakisa Port Infrastructure Projects</b>	<b>Port Location</b>
Modifications of 1200 ton slipway cradle	Port Elizabeth
Replacement of Robinson Drydock floating caisson	Cape Town
Replacement of 10 cranes for Shiprepair	Cape Town
Execution : Dry Dock Capstans Upgrade - FEL3&4	Durban
Refurbishment of Graving Dock - Jib Cranes	East London
Sturrock Dry Dock Pump System Upgrade - FEL3&4	Cape Town
Sturrock Dry Dock Electrical Infrastructure Upgrade - FEL3&4	Cape Town
Replacement of Sturrock Drydock Inner Caisson	Cape Town
Replacement of Capstans on all docks - FEL3&4	Cape Town
Robinson Dry Dock Pump System Upgrade - FEL3&4	Cape Town

Source: TNPA (2021, p.19)

According to the International Trade Administration (2020) and Ntuli (2017), South Africa's ports and terminals are recognized as the port's facility trade. Furthermore, the South African government has recognized the sector as one of the areas that would play a crucial role in fostering the economic growth and development of the country. As a result, investment in the industry is important to meeting the NDP 2030 targets, and maritime transport infrastructure improvements should be prioritized.

Deng et al. (2013) concluded an investigation in China that demonstrated the beneficial correlation between economic activity and value-added operations at ports. Bottasso et al. (2013) concluded a study in ten West European nations and demonstrated that growth and job prospects were enhanced by port efficiency as assessed by port capacity. Shan et al. (2014) concluded a finding in China that demonstrated the efficiency of ports and their impact in boosting prosperity both inside a nation and among its neighbours. Chang et al. 2014 cited that a substantial factor that has been linked to South Africa's suboptimal economic performance is its poor port efficiency.

South Africa's ports and terminals serve as key drivers of the country's economic growth. Positioned strategically along one of the world's busiest international shipping routes, the nation presents significant investment opportunities in its diverse maritime sector (Walker, 2018). Consequently, escalating the volume of container terminals and inland depots is necessary to boost production and efficiency using the port's current machinery and infrastructure (Chang et al. 2014). The authors alluded that this will support the sector's efficiency, enhancing economic activity and fostering economic expansion. As part of the initiative of the TNPA to boost socio-economic development, the long-term vision of the KZN Ports Master Plan includes the creation of over 570 thousand job opportunities over the coming 30 years, directly benefiting the regional economy and supporting sustainable growth in the port sector (TNPA, 2023).

To boost port growth, the public sector should support private sector participation in port operations. This would increase overall commerce and economic growth (Matekenya and Nwadi, 2022). According to TNPA (2024), the Durban port is set to undergo a major transformation by TNPA bringing in Zutari, a respected infrastructure and advisory firm, to help refine and update the Island View Precinct Strategy. Initially approved in 2019, this strategy is being reworked to boost sustainability and improve efficiency within South Africa's liquid bulk sector. The Island View precinct is crucial, handling around 74 percent of the

country's liquid bulk imports, including vital products like petroleum, chemicals, and agricultural goods. It will also play an important role in South Africa's shift towards cleaner energy, including managing Liquefied Petroleum Gas (LPG) and other sustainable energy sources.

In the statement, the TNPA further cited that Zutari's task will be to evaluate market trends, assess the current strategy, and create an updated plan that focuses on improving the sector's long-term sustainability, efficiency, and supply chain integrity. The revised strategy is not only aimed at ensuring a steady supply of essential commodities but also at preserving jobs, with nearly 2,000 jobs supported by the precinct as of 2022. TNPA is committed to aligning with international best practices and working closely with stakeholders like the Fuels Industry Association of South Africa (FISA) and the NERSA to ensure the success of this transformation. (TNPA, 2024).

## **2.11 Global Rankings of Container Ports: A Comparative Performance Overview**

The section provides an overview of African port performance globally. The primary goal is to demonstrate the present performance of ports. This is significant because it may provide insight into whether African ports are operating efficiently. Port performance impacts trade efficiency by determining connections and trade costs (UNCTAD, 2020).

It is stated that ports in Africa face significant challenges, including poor and rundown infrastructure and the use of outdated equipment (Saggia, 2017). According to the World Bank, the Durban port has become increasingly uncompetitive, ranked 341st out of 348 container ports worldwide (Steyn, 2023). Hattingh (2023,p.1) also cited that “the World Bank and S&P Global Market Intelligence’s 2022 Container Port Performance Index (CPPI)” ranked South African ports lowest on the global index, with Port of Gqeberha at 291st, Durban at 341st, and Cape Town at 344th out of 348, highlighting the challenges these facilities face in terms of efficiency, infrastructure, and competitiveness.

Hattingh (2023, p.1) cited that South Africa's neighbouring countries ranked higher, “with Mozambique's Port of Beira at 223rd and Maputo at 248th. Namibia's Walvis Bay” also outperformed South African ports, ranking 293rd. These rankings emphasize the relative competitiveness of regional ports and identify possible areas for improvement in South Africa's port infrastructure and operations. According to Perin, Partyka, Lana, and Marcon (2020), the

berth length, cramped stacking yards, and outdated equipment make it difficult for ports to operate efficiently and stay competitive. These limitations prevent them from handling larger ships and higher cargo volumes, creating bottlenecks and slowing down operations. As part of the initiative to improve berth length and congestion, TNPA took the initiative to enhance the port's capacity to accommodate larger vessels and enhance operational efficiency. The proposed upgrades include deepening the berths, basin, and approach channel from their current depth of 12.8 meters to 16.5 meters. Such modifications are expected to address critical limitations in the port's capacity to handle increasing cargo volumes and align with international maritime standards (TNPA, 2023).

According to the recent data (World Bank, 2024), African ports have continually performed poorly when compared to other locations. Table 2.4 compares the highest and lowest ranked ports.

Table 2.4: Ten highest and lowest global ports ranking

<b>Rank</b>	<b>Port</b>	<b>Country</b>
1	Yangshan	China
2	Salalah	Oman
3	Cartagena	Colombia
4	Tangier-Mediterranean	Morocco
5	Tanjung Pelepas	Malaysia
6	Chiwan	China
7	Cai Mep	Vietnam
8	Guangzhou	China
9	Yokohama	Japan
10	Algeciras	Spain
396	Luanda	Angola
397	Dar es Salaam	Tanzania
398	Durban	South Africa
399	Douala	Cameroon
400	Abidjan	Côte d'Ivoire
401	Lagos	Nigeria
402	Tema	Ghana
403	Mombasa	Kenya
404	Ngqura	South Africa
405	Cape Town	South Africa

Source: The author compiled data using information obtained from the World Bank (2024): <http://documents.worldbank.org/curated/en/099060324114539683/P17583313892300871be641a5ea7b90e0e6>

Table 2.4 shows that only one of the African countries is in the top ten performing countries. Most African countries are in the bottom ten. African ports have been shown to perform poorly when compared to other locations. Port efficiency in Africa is widely criticized, with users citing delays, congestion, and poor infrastructure as key challenges to effective operations (Kahyarara, 2020).

## **2.12 Gross Fixed Capital Formation (GFCF)**

Gross Fixed Capital Formation (GFCF) is widely recognized as a primary driver of economic growth. As a measure of investment in an economy, GFCF encompasses expenditures on tangible infrastructure, machinery, and equipment, which are crucial for sustained production capacity enhancement (Iyoha, 2007). According to Stupnikova and Sukhadolets (2019), GFCF is the key section of the expenditure approach for determining the GDP. It represents the net increase in an economy's physical assets and includes infrastructure, machinery, buildings, and equipment investments. As an indicator of productive capacity expansion, it reflects the level of investment activity in an economy and contributes significantly to long-term economic growth and development (Semenya and Ogujiuba, 2024).

A few years ago, South Africa adopted a strategic shift towards privatization policies to stimulate investment activities and enhance capital formation within the country. This approach was driven by the belief that privatization could attract private sector investment, improve operational efficiency, and foster economic growth by unlocking new avenues for capital accumulation. Through the transfer of ownership and management of state-owned enterprises to the private sector, the government intended to encourage greater investor confidence, thereby accelerating the pace of fixed capital formation and contributing to broader economic development (Semenya and Ogujiuba, 2024).

In South Africa the capital expenditure declined significantly, dropping from an average of nearly 30 percent of GDP in the early 1980s to approximately 16 percent of GDP by the early 2000s (NDP, 2030). Public infrastructure spending is currently at historically low levels compared to previous periods. As a result, South Africa has effectively missed capital expenditure in critical infrastructure including public transport, housing, roads, sanitation, water, electricity, ports, and railways. For accelerated and more inclusive growth, the nation

must significantly increase its level of capital investment (Morisset, 2023). According to the NDP, GFCF aims to reach approximately 30 percent of GDP by 2030, with public sector investment accounting for 10 percent of GDP, in order to achieve a sustained impact on economic growth and the provision of essential household services.

### **2.13 Contributing Factors to a Lack of Capital Investments**

Researching the root causes behind the prolonged lack of investment in South Africa's ports is imperative. This issue erodes the country's trade effectiveness and significantly hinders its growth economically (Mitullah et al., 2016). The expansion of port infrastructure is crucial to accommodate the increasing volume of international trade (Thusi and Mlambo, 2023).

Meyiwa and Chasomeris (2020) suggested that Transnet's centralized organisational structure, wherein decisions are made by the Group Chief Executive (GCE) and the board of directors for all functioning divisions, facilitates the redistribution of profits among these divisions. However, this centralized approach has led to insufficient reinvestment of revenues and profits into the port system. The lack of investment in South Africa's ports primarily stems from the failure to reinvest TNPA's revenues and profits adequately into the port system. This shortfall can be attributed to governance challenges and insufficient pricing mechanisms. Port users advocate for cross-subsidization within the port sector. However, they contend that most of TNPA's earnings are diverted to subsidize division of less profitable divisions within Transnet instead of being reinvested into maintaining and upgrading vital port infrastructure and equipment (Meyiwa and Chasomeris 2020; Mthembu and Chasomeris 2023).

Typically, ports exercise control over their infrastructure but often find themselves in competition for funding to enhance them. Across the globe, a persistent discourse stems regarding the most effective means of financing new port infrastructure and fostering development (Cook, 2010). Farrell (2014) also mentioned that port infrastructure finance emerges as a pivotal concern across Africa. In the past decade, a notable surge in developments in port of Africa was propelled by the growth in GDP levels across the African continent (Fraser et al., 2020). Investing in port capacity is undeniably expensive due to its capital-intensive nature, as highlighted by Haralambides (2002). Consequently, these investments often prove unattainable for financially constrained governments in SSA (Fraser et al., 2020).

Maritime transportation faces increasing demand and strain from transportation services, compounded by technological challenges such as outdated infrastructure that causes traffic jams and delays. The Department of Environmental Affairs states that the funding is needed to maintain and enhance port infrastructure (DEA, 2019). Furthermore, Operation Phakisa (2015) identifies several challenges in South Africa's maritime transport and manufacturing sector, including obsolete, inadequate, and costly infrastructure; a lack of skilled workforce; limited market growth support from public procurement; and insufficient support for a national ship registry or the flagging of South African ships, all of which impede industry growth.

According to the literature, the existence and presence of leadership in the execution of infrastructure projects influences its implementation to some extent. Narayanan, Douglas, Guernsey, and Charles (2002) agree that top leadership performance is the most important factor of team success. To ensure effective implementation, leaders must select project leaders who are likely to empower, supervise, and balance the project.

#### **2.14 Stakeholders Perspective**

A stakeholder encompasses any individual or group with an economic interest vested interest in or impacted by the port's activities (Alamouh et al., 2024). Lam and Yap (2019), states that stakeholders are represented by the following four groups: internal stakeholders, the public sector, market players/corporate bodies, and community/interested groups. The authors further cited that stakeholders come from varied backgrounds, including ship owners and logistic service providers.

Given their scale and intricacy, contemporary seaports cannot be regarded as standalone units. As integral components of the transport system, seaports involve extensive cooperation among diverse participants, such as harbour authorities, maritime carriers, and cargo intermediaries (Tijan, Jovi' and Karaniki', 2019).

Key port users, alongside a more robust Port Users Council, significantly contribute to optimizing port performance. In South Africa, Port Consultative Committees play a pivotal role by reviewing Transnet's investment plans, conducting workshops with TNPA, and advising the Ports Regulator and the Department of Transport (DoT) on measures to enhance port performance. Stakeholders firmly believe that ports represent a critical national asset essential for facilitating South African trade and reinforcing its global competitiveness

(Meyiwa and Chasomeris, 2020). Ferrari, Tei, and Merk (2015) cited that ports that actively engage with their relevant stakeholders by delivering tangible advantages through educational programs and community-building projects can greatly enhance their image and maintain reputational integrity. Mthembu and Chasomeris (2022) demonstrate an indication that port stakeholders support the establishment of a Port Community System (PCS) for South African ports. A PCS enables secure information exchange between public and private stakeholders via a single web platform, hence improving port performance, competitiveness, and attractiveness. A PCS promotes openness and accountability, resulting in better port governance procedures.

Stakeholder engagement in Africa can yield significant benefits when the process is tailor-made to meet the needs of individual stakeholders. Given the continent's socio-economic diversity, engaging stakeholders in a customized and context-sensitive manner enhances collaboration and mutual understanding (Munthali and Kaliba, 2024). Munthali and Kaliba (2024) further cited that diverse stakeholder groups can positively influence corporate activities by offering valuable feedback and contributing unique perspectives, which can broaden a company's understanding of its competitive landscape. This inclusive approach not only fosters innovation but also strengthens organisational resilience and adaptability within dynamic African markets. Mwanaumo et al. (2018) indicated that companies that actively and successfully involve major parties in road reconstruction efforts are more inclined to accomplish outcomes that are favorable. The involvement of stakeholders enhances collaboration, fosters shared understanding, and ensures that the project aligns with both community needs and regulatory standards, thereby improving overall project performance and sustainability.

Based on stakeholders' comments, Gumede and Chasomeris (2013) highlighted several persistent challenges in South Africa's ports. These challenges include a lack of cost-based pricing principles, an unjustifiable pricing methodology, congestion, low productivity and inefficiency, inconsistent and unreasonable product pricing, and poor service delivery, among other issues. Similar issues continue to be raised by stakeholders (Meyiwa and Chasomeris, 2020). According to Anthony et al. (2018), cost-benefit analysis is a widely utilised method for assessing the economic viability of infrastructure projects. This approach systematically compares a project's projected costs against its expected benefits, offering a structured framework for informed decision-making in capital expenditure. The cost-benefit analysis aids in determining whether the long-term advantages of a project justify the initial investment.

One of the most prominent themes emerging from stakeholder submissions and interviews was the concern over chronic underinvestment in port infrastructure. Stakeholders cited outdated equipment, frequent breakdowns, and insufficient maintenance as factors undermining operational efficiency and contributing to congestion at key ports such as Durban. For example, one interviewee noted that the “reliability of cargo handling equipment is deteriorating, leading to costly vessel delays and cargo backlogs.” This observation is echoed in the literature. Mthembu and Chasomeris (2023) and Ebrahim (2023) highlight how equipment failures have led to 71,000 TEUs being stranded, with substantial delays at Durban due to insufficient investment in dredgers and tugs. Grater and Chasomeris (2022) further point to underspending on capital projects despite increased profit margins at TNPA, reinforcing stakeholder claims of financial misalignment.

Furthermore, stakeholders voiced frustration over the Required Revenue (RR) model, arguing that it permits tariff increases without incentivizing operational efficiency. One industry respondent expressed concern that “the RR model guarantees TNPA's revenue regardless of performance, thereby removing the incentive to invest strategically.” This critique finds strong support in the academic literature. Gumede and Chasomeris (2017) and Fakir and Chasomeris (2022) contend that while the RR model ensures revenue recovery, it was never tailored for port operations and does not adequately address performance inefficiencies. The alignment between these stakeholder perspectives and scholarly evaluations underscores a shared recognition of the model’s limitations.

Another point of convergence lies in governance and the misuse of TNPA’s port-generated revenues. Stakeholders frequently criticized the centralization of capital allocation within Transnet, stating that port revenues are often diverted to other divisions, leading to inadequate reinvestment in the port system. This concern is consistent with Meyiwa and Chasomeris (2020), who argue that the redistribution of TNPA profits to underperforming divisions has directly hindered port development. The literature supports stakeholder advocacy for ring-fencing port revenues to ensure they are reinvested in infrastructure and service delivery, thus strengthening the case for reform.

In contrast, while the literature advocates for the Asian port doctrine model, where the government plays a strategic and developmental role, some stakeholders expressed hesitation about deeper state involvement, citing political interference and mismanagement. This difference of opinion highlights a gap between theoretical model recommendations and the

concerns of stakeholders, emphasizing the need for a more practical and locally appropriate governance strategy.

## **2.15 Private Public Partnership in Ports**

Investing in port capacity is undeniably expensive due to its capital-intensive nature, as highlighted by Haralambides (2002). According to Oblak, Bistričić, and Jugović (2013), the public sector has traditionally been the dominant investor in the port sector. However, structural changes have occurred, with a growing involvement of private sector participation in capital investments within the port system. The goals of PPP include improving port competitiveness, stimulating regional economies, and reducing government expenditures for capital investments (Acciaro, 2004). World Bank (2018, p.14) indicated that Chinese SOEs are playing an increasingly prominent role in port investments across SSA. “China Merchants Holdings International (CMHI), China Harbour Engineering Company (CHEC), and China State Construction (CSC)” have made substantial contributions to the expansion and rehabilitation of ports in the region. According to Iyer and Nanyam (2021), various financing mechanisms, including PPPs, have facilitated these investments, reflecting a strategic approach to infrastructure development and enabling large-scale projects.

Southern and Western Africa have also increasingly embraced Chinese investments. A notable illustration is the project in Namibia of the Walvis Bay container terminal, constructed by CHEC and officially tendered over to the Namibian Port Authority (Namport) (Musariri, 2017). Namport retains both the authority over and operational control of the port, reflecting a model of infrastructural collaboration that aligns with Namibia's strategic goals while benefiting from Chinese financial and technical support. While there is an observable global trend toward the privatization of port terminals, several countries, including Kenya, South Africa, and Namibia, continue holding dual roles as both regulatory authorities and terminal operators. These governments remain institutionally entrenched in the belief that SOEs are a suitable model for port terminal operations. The economic concepts of “path dependency” and “lock-in” have somewhat restricted institutional path evolution (Fraser and Notteboom, 2016). For instance, the TNPA, and TPT are divisions of Transnet in South Africa, have launched substantial capital investment programs in the country's ports. Transnet conducted feasibility research to determine potential long-term development possibilities for increasing the South

African terminal capacity in the port system. A notable example is the Durban Dig-Out Project, which aimed to construct extra terminal capacity in the position of the previous airport situated south of Durban (Creamer, 2016). Transnet has explored various finance sources, including PPPs, to support the significant investment in port infrastructure. Transnet's corporate parenting structure for its two ports differs from current port finance practices. Benin and other African countries, including Mozambique and Madagascar, have implemented port reform programs (Mundy and Penfold, 2008). Transnet's current institutional situation suggests an off-balance-sheet funding model for capital investments in the TNPA and TPT divisions (Transnet, 2023).

The public sector's inability to consistently adapt to evolving market demands, coupled with its challenges in securing adequate funding from public institution budgets necessary for the sustainable development of ports, has contributed to the increased involvement of the private sector in this industry. Hanock (2020) noted that, despite some advancements fueled by private sector investment in South Africa's port infrastructure, the overall stagnation in development continues to be a major concern.

This trend has led to the signing of numerous public-private partnership agreements, leading to the implementation of new models in port management. While the most efficient ports today still retain a public ownership position, their funding and management have largely been delegated to the private sector (Hanock, 2020). Oblak et al. (2013) concluded a study and found that the growth and development of the container terminal have been driven by joint investments from the public and private sectors. The infrastructure projects are undertaken by the public sector for terminal expansion, while the private partner focuses on investing in port machinery and handling equipment. A recent trend has been noted in South Africa where Transnet has involved a leading global port and container terminal (ICTSI) operating 30 facilities across 20 countries. The container terminal management company will enter a 25-year strategic partnership with Transnet to upgrade and develop Pier 2, the largest terminal on the African continent (Ebrahim, 2024). The involvement of the Philippine company has been welcomed by the logistics group, the South African Freight Forwarders. The logistic group asserted that the private sector participation in ports plays a pivotal part in enhancing efficiency, promoting innovation, and attracting investment in infrastructure while mitigating risks and leveraging specialized expertise. It promotes competition, improves customer service, and generates revenue for governments, yielding significant benefits for port operators and the

broader economy. As a result, the industry has largely welcomed this apparent shift in direction (Ebrahim, 2024).

The increasing adoption of PPPs for infrastructure development is becoming a prominent trend in the transport sector. This approach strengthens and leverages the public and private entities to enhance efficiency, optimize resource allocation, and accelerate project delivery, ultimately addressing the growing demand for improved transport infrastructure. Grimsey and Lewis (2004) emphasize that PPPs are likely to improve project delivery by increasing efficiency and innovation while simultaneously alleviating the financial pressures on the public sector. Through this collaborative model, PPPs facilitate the sharing of risks and resources between public and private entities, contributing to more sustainable and cost-effective infrastructure development.

## **2.16 Chapter Summary**

The literature review sheds light on the intricate scene of South African ports, emphasizing the need for a robust and flexible port doctrine system that matches global best practices. Looking at different port doctrines, Anglo-Saxon, European (Continental), and Asian, shows unique operational philosophies that have an influence on port governance, pricing strategies, and infrastructure development. The required revenue model and market demand strategy are pivotal in ensuring the financial viability of ports, particularly in the context of international trade growth. Capital expenditure, such as the Durban Dig Out Project, is key to boosting port capacity and efficiency. However, the review identifies significant challenges, including the impact of underspending on infrastructure and equipment that affects productivity and competitiveness, which highlights the urgency for strategic investment in port infrastructure. Stakeholders' viewpoints highlight the critical requirement for improved public-private partnerships to encourage investment in port functioning. Finally, addressing the underlying causes of a lack of capital investment is critical to the future of the ports. South Africa may improve its port infrastructure by encouraging a collaborative atmosphere among stakeholders and linking port strategy with national economic goals, thereby increasing trade competitiveness and supporting larger economic development projects.

The chapter that follows highlights and focuses on the research methodology approaches that were used to perform the study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The aim of this chapter is to present the methodology employed in the study titled: An analysis of capital expenditure at South African Ports: trends and stakeholders' comments. This chapter outlines the research design, data collection methods, and data analysis techniques used to examine capital expenditure trends and integrate insights from stakeholder comments. By detailing the systematic approach taken, this chapter aims to provide a clear framework that underpins the study's findings, ensuring the reliability and validity of the results within the context of the South African ports. The informed consent process is thoroughly explained, ensuring participants' rights and understanding of the study. Additionally, the chapter discusses the data analysis procedures and addresses the ethical considerations that guide the research.

##### **3.1.1 Aim of the study**

The study aims to analyse trends in capital expenditure at South African ports and evaluate stakeholder perspectives on these investments. The study seeks to identify patterns in capital investment over time, assess the effectiveness and efficiency of these expenditures in enhancing port infrastructure and services, and explore the impact of stakeholder feedback on future capital planning and investment strategies. By integrating quantitative data on capital expenditure with qualitative insights from stakeholders, the research aims to offer a comprehensive understanding of how capital investments at TNPA influence operational performance and stakeholder satisfaction.

##### **3.1.2 Research Objectives**

The study is systematically guided by the objectives detailed in the first chapter, which have been carefully articulated to direct and structure the research process. These objectives serve as a framework for investigating the core aspects of the study and ensuring that the research remains focused and relevant. Each objective is designed to address specific elements of the research question and contribute to the overall understanding of the topic under investigation.

By delineating these objectives, the study aims to achieve a comprehensive analysis and generate meaningful insights into the research area.

### **3.2 Research Methodology**

According to Creswell (2013), a structured framework of systematic guidelines and instructions that the researcher adheres to in order to achieve the study's objectives is described as research methodology and design. These methodologies encompass the strategies, processes, and techniques employed for interpretation, data collection and analysis, thereby ensuring that the research is conducted in a coherent, rigorous, and methodologically sound manner. The study used a mixed-method approach, utilizing secondary data from publicly available documents, such as Records of Decision documents, Annual Financial Statements (AFS) available on the Transnet Group, the Tariff Methodology Manuals of the Ports Regulator of South Africa, various tariff applications from TNPA, and feedback from stakeholders on the TNPA tariff application. Additionally, the study employs primary data collected through purposive interviews with four individuals who have been directly involved and have expertise in capital expenditure decision-making processes.

While the study employed a purposive sampling method, it is acknowledged that the small sample size of four interviewees presents a limitation. This limited pool of respondents may not comprehensively represent the diverse range of views within South Africa's port sector. The selection was guided by the representativeness and expertise of the participants, who included seasoned professionals from regulatory and operational backgrounds. Their insights provided critical depth and contextual understanding aligned with the study's objectives, even if broader generalizations are limited.

By following this comprehensive approach, the researcher was able to address the research questions effectively, maintain the integrity of the study, and contribute to the validity and reliability of the findings.

### **3.3 Research Approach**

“Mixed methods research is an approach to inquiry that involves collecting both quantitative and qualitative data, integrating these two forms of information, and employing distinct research designs that philosophical assumptions and theoretical frameworks may guide. The

core assumption of this approach is that combining qualitative and quantitative data provides deeper insights than could be obtained from either type of data alone” (Creswell and Creswell, 2018, p.41). The research employs a mixed-methods approach, combining both qualitative and quantitative data to offer an analysis of capital expenditure trends and stakeholder perspectives at South African ports. This methodological design is intended to provide a robust examination of financial data while simultaneously capturing insights from stakeholders. By integrating these two approaches, the study aims to achieve a multidimensional understanding of the factors influencing capital expenditure decisions. The quantitative component facilitates an objective assessment of financial trends, whereas the qualitative component enriches the analysis by exploring stakeholder perceptions and experiences. This integration allows for a more holistic exploration of the dynamics at play, ultimately contributing to a deeper and more nuanced understanding of capital expenditure practices at South African ports.

The mixed methods research is particularly suitable for the study on CAPEX and South African ports. The study focuses on analyzing South African ports' capital expenditure: trends and stakeholders' comments. Mixed methods allow for quantitative data, such as actual CAPEX spent versus planned, and qualitative insights, such as participants' interview responses. By incorporating qualitative interviews alongside quantitative data from tariff applications and financial documents, records of decision, and stakeholders' comments, the research can contextualize numerical findings with personal experiences and insights from those directly involved. Given that the study incorporates stakeholder comments and interviews, mixed methods can facilitate a more participatory approach, enabling stakeholders to voice their concerns and experiences. This engagement can significantly influence policy recommendations and practical implications, highlighting the need for stakeholder inclusion in CAPEX processes.

### **3.4 Data Collection**

Mazhar, Anjum, Anwar, and Khan (2021) defined data collection as a fundamental component of research that involves systematically gathering, evaluating, and analyzing information to obtain precise and reliable insights. This process employs standardized, validated methods to ensure the accuracy and integrity of the data collected, thereby facilitating meaningful and credible research outcomes. This study's data collection incorporated both primary and secondary sources. Birks and Mills (2022) cited that data collection occurs when the researcher

has no control over the data source, a scenario often encountered when gathering information from fixed sources such as documents and literature. The authors further alluded that this approach allows researchers to systematically extract useful information from existing sources without modifying the original content, keeping the integrity of the data and guaranteeing that the analysis reflects the true context and meaning of the material under consideration.

**Secondary Data:** The main sources of secondary data included publicly available documents such as Transnet's integrated reports, annual financial statements, and statistics reports published by TNPA and the Ports Regulator of South Africa. These documents provided quantitative data on capital expenditure trends from the financial year 2018/2019 to FY 2022/2023. Content analysis was employed to examine these documents, allowing for the identification of patterns and trends in capital investment. These documents were manually extracted from the NPA website. The quantitative data was manually recorded on the Microsoft Excel spreadsheet to allow the researcher to determine the capital expenditure trends from the financial year 2018/2019 to FY 2022/23.

According to Crowley and Delfico (1996), content analysis is a systematic research methodology employed to analyse textual data in a standardized manner, enabling researchers to draw meaningful conclusions from the information. By adhering to structured procedures, this method facilitates objective and replicable analysis, providing insights into the underlying patterns, themes, and meanings within the text.

**Primary Data:** To complement the secondary data, purposive sampling was utilised to conduct interviews with key stakeholders. Hoepfl (1997) states that the primary approach in qualitative research is purposeful sampling, as it focuses on selecting information-rich environments that allow for in-depth study. Creswell and Creswell (2018) support this notion “that qualitative researchers select individuals who will best help them understand the research problem and the research questions” (Creswell and Creswell, 2018, p.333). The interviewees included individuals who represented private industry representatives who regularly commented on the annual TNPA tariff applications, as well as an interviewee who had experience working at the Ports Regulator of South Africa. Marshall, Cardon, Poddar, and Fontenot (2013) argued that interviews serve as the primary data source because this method allows the researcher to most effectively access and understand participants’ interpretations of the actions and events that have occurred or are currently taking place. These interviews aimed to gather qualitative insights regarding the challenges, contributing factors, and stakeholder perspectives on capital

expenditure at South African ports. Table 3.1 below provides an overview of the participants in the study:

**Table 3.1 An overview of the participants**

<b>Interviewees</b>	<b>Characteristics of interviewees</b>	<b>Date Interviewed</b>	<b>Duration of the Interview</b>
Interviewee 1	Independent consultant who previously worked for the Ports Regulator of South Africa	08 November 2024	45 minutes
Interviewee 2	Regional specialist in customs and intermodal trade logistics, with in-depth knowledge and extensive expertise of import and export logistics across all South African ports.	21 November 2024	1 hour and 5 minutes
Interviewee 3	The interviewee represents private industry stakeholders, advocating for the interests of ship operators and agents in South Africa.	26 November 2024	50 minutes
Interviewee 4	A senior official in the organisation and the interviewee plays a pivotal role in facilitating stakeholder engagement and ensuring inclusive participation in the development and management of South Africa's ports.	17 December 2024	1 hour and 35 minutes

Source: The author compiled from the list of participants in the study

The researcher also attended forums such as the tariff application road show (PRSA, 2024) and the Durban Port Business Forum, a committee of the Durban Chamber of Commerce and Industry, to gain a comprehensive understanding of port operations in general and particularly the tariff application. The observations contributed to a deeper understanding of the operational procedures within port service.

The stakeholders' submissions, ranging from 1 to 19 pages, represent a diverse group of parties involved in port operations. These include cargo owners, shipping brokers and lines, as well as renters. Below is a description of the characteristics of the organisations that provided comments:

The Cape Chamber of Commerce is “a non-partisan organisation which has been representing businesses for more than 200 years. The Cape Chamber represents more than 2 000 businesses involved in the import, export and trade industry” (Cape Chamber of Commerce, 2017, p.1). NAAMSA, the association of automobile representing the interest of 43 vehicle manufacturers and importers of new vehicles in South Africa (NAAMSA, 2017. p.1). SAMSA is a “statutory structure set up by the government with a view to ensuring that all economic participants at the

country's major ports have equal access and contribution to the management of the port's infrastructure and associated resources" (SAMSA, 2019. p.1).

The South African Association of Freight Forwarders (SAAFF) is a national association representing 443 members across South Africa. SAAFF is regarded as the industry voice on issues affecting freight management. These members play a critical role in trade facilitation, managing over 80 percent of the country's international trade. SAAFF collaborate with government departments and parastatal institutions on key industry matters, including customs, port health, trade permits, border control, cargo handling, and freight security. The association also engages with stakeholders on railway services, road freight legislation, and the export control of perishable goods. Recognizing the global nature of freight forwarding, SAAFF maintains strong relationships with international and regional freight forwarding associations, particularly within Southern Africa. (SAAFF, 2024).

"The South African Association of Ship Operators and Agents (SAASOA) is a section 21 business that represents ship owners and vessel agents. Its members also belong to a variety of international shipping and ship agency associations. SAASOA was founded in 2007 by a merger between ASABOSA, ASL, and CLOF. SAASOA has 106 members across all of South Africa's ports, representing nearly all of the shipping lines and agents who visit or operate on South African coastlines, including Maersk Lines, K Line MSC, Hamburg Sud, and Hapag-Lloyd Africa" (SAASOA, 2015, p.1).

Eastern Cape Maritime Business Chamber a "registered Non-Profit Company (NPC) with the aim to address the imbalances and opportunities in the South African Maritime Industry representing the interests of all local businesses currently and wishing to participate in the sector" (Eastern Cape Maritime Business Chamber. p.1).

Erakis is "an investment holding company for businesses that operate in or support the industrial minerals sector" (Erakis, p.1).

"Anglo American Anglo American is one of the world's largest mining companies, operating across five continents" (Anglo American, 2015, p1). The company extracts and processes a range of commodities, including iron ore, manganese, metallurgical coal, thermal coal, base metals (such as copper and nickel), and minerals like niobium and phosphates. Additionally, Anglo-American is a global leader in the mining of precious metals and minerals, including

platinum and diamonds. In South Africa, the company focuses on four key commodities: platinum, thermal coal, diamonds, and iron ore. (Anglo American, 2015).

Table 3.2 below summarises the total number of stakeholder comments submitted to the PRSA from 2018 to 2022 that commented on the annual NPA tariff applications.

Table 3.2 shows the population of publicly available comments

Tariff application period	Number of Comments Submitted					
	2018/19	2019/20	2020/21	2021/22	2022/23	Total
Number of comments submitted	7	15	14	15	13	64

Source: The author compiled data using information obtained from the PRSA: <https://portsregulator.org/npa-tariff-applications/>

### 3.5 Data analysis

“Data analysis is an ongoing process during research. It involves analyzing participant information, and researchers typically employ general analysis steps as well as those steps found within a specific design. More general steps include organizing and preparing the data; an initial reading through the information; coding the data; developing from the codes a description and thematic analysis; using computer programs; representing the findings in tables, graphs, and figures; and interpreting the findings” (Creswell and Creswell, 2018, p. 291). This study will employ both qualitative and quantitative data analysis techniques to comprehensively address the research objectives related to capital expenditure trends at the TNPA and stakeholder perspectives on tariff applications.

The qualitative data was derived from the purposive interviews conducted with selected stakeholders. Only three interviews sessions were captured on audio-recorded (with participants' consent) and then transcribed. This transcription ensured that all verbal data was accurately captured for analysis. A fourth interviewee only agreed to a telephonic interview, and notes written by hand were taken during the conversation to ensure the participant’s perspective was adequately captured. Thematic analysis was employed to identify, analyse, and report patterns within the qualitative data. Finally, the themes were interpreted in the context

of the research questions, drawing connections to existing literature and discussing the implications of the findings for capital expenditure at TNPA.

The quantitative data was collected from secondary sources, including TNPA's financial reports, annual submissions to the Ports Regulator, and other relevant documents. Relevant quantitative data was compiled from the identified sources. These included figures related to capital expenditure, revenue, and other financial metrics over the specified financial years. A trend analysis was conducted to visualize changes in capital expenditure over the specified financial years. This may involve creating graphs or charts to illustrate the trends and identify any significant fluctuations or patterns (Divecha, Tullu, and Karande, 2023).

The Ports Regulator of South Africa publishes the requested feedback from numerous terminal operators, shipowners, and importers on tariff recommendations filed by the National Ports Authority. These comments are publicly available on the regulator's website. According to Clarke and Braun (2017), thematic analysis is the process of detecting, evaluating, and interpreting patterns of meaning within qualitative data. The authors further state that thematic analysis offers clear and systematic steps for generating codes and themes from qualitative data. The 64 stakeholders' comments submitted over the 5 years (as shown in Table 3.1) were analysed using the NVivo software combined with thematic analysis, which entailed identifying pertinent themes and organizing the collected data into cohesive concepts with the goal of discovering stakeholder recommendations, particularly those regarding tariff structure and capital spending.

### **3.5.1 Thematic Analysis**

According to Clarke and Braun (2017), thematic analysis is the process of detecting, evaluating, and interpreting patterns of meaning within qualitative data. The authors further state that thematic analysis offers clear and systematic steps for generating codes and themes from qualitative data. Codes represent the smallest meaningful units, capturing key aspects of the data that may be relevant to the research question. Thematic analysis is a valuable and effective technique for understanding a group's experiences, thoughts, or actions, as reflected in the data collected (Castleberry and Nolen, 2018). The following five study objectives served as crucial references to guide the thematic analysis. The first objective analysed the capital expenditure trends for South African Ports from the financial year 2018/2019 to 2022/2023. The second objective analysed the stakeholders' comments about capital expenditure at the

South African ports from 2018/2019 to 2022/23 financial years. The third objective investigated the contributing factors and challenges the South African ports face in implementing capital expenditure. The fourth objective ascertained whether any incentives can be implemented to accelerate spending on capital expenditure. The last objective investigated underlying causes and analysed the consequences of underspending on capital expenditure at South African ports. Naeem et al. (2023) suggest the following six steps in thematic analysis:

**i. Transcribing and data familiarization**

Braun and Clarke (2023), describe transcription as the systematic conversion of spoken language from interviews, focus groups, or observations into written text. It preserves the richness and nuances of participants' speech, forming a critical foundation for identifying patterns, themes, and deeper meanings in qualitative analysis. According to Yanto (2023), familiarization refers to the researchers' intentional process of engaging closely with the data through repeated reading and reflection to develop a deep and comprehensive understanding of the dataset.

In this step, the researcher thoroughly analysed the data to acquire an enhanced understanding of the information gathered. The material gathered through interviews was transcribed to better convey each participant's perspective. The researcher transcribed the interviews, omitting fillers, repeated words, nonverbal indications, and background sounds. Grammatical errors were corrected, and the transcripts were refined to enhance clarity. Organisation-specific abbreviations and technical jargon were replaced with standard terminology to ensure consistency and readability.

Additionally, to better understand the stakeholders' perspective, the 64 publicly available stakeholders' comments submitted to the PRSA over the five years from 2018 to 2022 were downloaded and thoroughly studied to identify the main themes. This method allowed the researcher to become acquainted with the obtained data.

**ii. Keyword selection**

Keyword selection in research involves the strategic identification of significant terms or phrases that encapsulate the central ideas of a study or dataset, thereby facilitating accurate analysis, efficient organization, and effective retrieval of information (Naeem et al., 2023).

This step comprised data analysis from interviews and thematic analyses of the stakeholder's comments submitted to the PRSA. The keyword selection step involved finding reoccurring patterns and concepts by labeling them as keywords. These keywords reflect each participant's and all stakeholders, experiences and perceptions obtained directly from the data.

### **iii. Coding**

According to Naeem et al. (2023), coding involves assigning brief phrases or keywords to sections of data to highlight their key ideas, themes, or significance. This process simplified complex text into a more manageable format, making it easier to identify connections related to the research questions.

### **iv. Development of themes**

Theme development is the process of grouping related codes into meaningful clusters to uncover patterns and connections (Naeem et al., 2023). This step allowed the researcher to move from analysing detailed codes and categories to interpreting the data at a broader, more conceptual level. Themes are more than just repeated elements; they represent deeper patterns and insights that bridge the research questions with the data. The researcher synthesized the identified themes into the broader research findings through a structured, multi-step process. First, a thematic map was developed to visually organize and illustrate the interrelationships among themes in relation to the research objectives. Next, narratives were constructed for each theme, articulating their significance, such as how stakeholder engagement shapes CAPEX planning. The themes were then contextualized within the broader findings by linking them directly to the research questions, ensuring relevance and cohesion.

### **v. Developing concepts by interpreting keywords, codes, and themes.**

At this stage, the researcher synthesized findings by linking the thematic insights with financial trends, stakeholder concerns, and regulatory challenges. This report integrates thematic narratives with CAPEX data, offering a holistic view of capital expenditure patterns and their implications for future investment strategies. This allows the researchers an opportunity to choose data extracts that capture the core of each theme and create narratives to illustrate their significance (Naeem et al., 2023). These narratives assist in explaining how the themes relate to the larger tale and emphasize their significance in the context of the research.

## **vi. Formulating report**

The final step of thematic analysis involved synthesizing and presenting the findings from the identified themes. At this stage, the researcher provided a detailed analysis, creating insights from the themes developed in the previous steps to create a comprehensive narrative that highlights the study's key findings.

### **3.6 Targeted Population**

The target population represents distinct subgroups within this wider group, determined by established criteria aligning with the study aims (Alvi, 2016). The target population includes shipping industry leaders and individuals who are experts in the port industry. These individuals are outside of NPA. This targeted population possesses first-hand knowledge and insights into the organisation's capital expenditure trends and provides valuable perspectives. Their perspectives are critical in understanding the underlying factors that influence the South African ports' financial and strategic direction. Given South Africa's significant role in sea trading and the pivotal importance of ports to maritime trade. The targeted population also includes all the stakeholders' annual submissions made to the PRSA from the 2018/19 to 2022/23 financial year.

### **3.7 Sampling Techniques**

In addition to the thematic analyses of the population of port stakeholders' submissions/comments to the PRSA over the period of 2018 to 2022, purposive sampling was employed to select participants with specific knowledge and expertise related to capital expenditure at the ports. This sampling method was chosen to ensure that the sample comprises individuals capable of providing in-depth insights into the decision-making processes and challenges encountered by the authority. According to Hoepfl (1997), purposeful sampling is the primary strategy in qualitative research, as it focuses on selecting information-rich environments that allow for in-depth study. Creswell and Creswell (2018) support this notion "that qualitative researchers select individuals who will best help them understand the research problem and the research questions" Creswell and Creswell (2018, p. 333). The selection criteria targeted individuals who are directly involved in capital expenditure project approvals

or reviews or possess a thorough understanding of the financial and operational aspects of TNPA, thereby enhancing the relevance and richness of the data collected.

### **3.8 Validity and Reliability**

In research, ensuring the validity and reliability of data and findings is essential for establishing the study's credibility and trustworthiness (Pandey and Patnaik, 2014). This section outlines the measures implemented to strengthen the validity and reliability of the investigation into capital expenditure at the South African ports and the perspectives of its stakeholders. Accordingly, this study utilised secondary data available in the public domain. As a result, the findings can be validated for accuracy and are deemed reliable and consistent, given that they can be replicated.

#### **3.8.1 Validity**

According to Sürücü and Maslakci (2020), validity is defined as the level to which the collected data is appropriate and precisely reflects the measuring equipment' intended purpose, and validity can be assessed by correctly interpreting data. Validity assures that the conclusions from the analysis are valid. Oluwatayo (2012) suggests different types of validity, which include content and triangulation validity. Triangulation involves utilizing multiple methods or data sources in qualitative research to gain a comprehensive understanding of a phenomenon (Patton, 1999). It is also recognized as a strategy for enhancing validity by verifying findings through the integration of information from various sources. Triangulation in this study is achieved by obtaining data from the following sources: (1) Comments submitted by various stakeholders, particularly on tariff applications, (2) Annual Financial Statements (AFS) available on the Transnet Group, Ports Regulator of South Africa Tariff Methodology Manuals (3) interviews with individuals who have been directly involved and have expertise in capital expenditure decision-making processes.

In qualitative research, validity ensures that the correct methods have been used to achieve reliable and accurate results (Creswell, 2018). Kolb (2012) highlights that it is the researcher's responsibility to take necessary precautions to ensure the validity of their study. According to Golafshani (2003), a well-conducted qualitative study enhances the understanding of complex situations that might otherwise be difficult to grasp. Furthermore, Creswell (2013) highlights

the direct relationship between the study's validity and reliability and the credibility of its conclusions.

The research instruments, including interview questions and data collection methods, were designed based on an extensive review of the literature. This approach ensured that the instruments comprehensively addressed all relevant dimensions of capital expenditure and effectively captured stakeholders' perspectives.

Additionally, steps were taken to ensure accuracy in data interpretation. The data were analysed using established thematic coding procedures, and interpretations were continuously cross-checked against the original source materials to ensure alignment with participants' intended meanings. These procedures were designed to reduce researcher bias and ensure that the findings genuinely reflect the data collected.

Triangulation involves utilizing multiple methods or data sources in qualitative research to gain a comprehensive understanding of a phenomenon (Patton, 1999). To enhance the validity of the findings, the study employed a mixed-methods approach, incorporating qualitative and quantitative data. This triangulation of data sources resulted in a more thorough understanding of the study problem and helped to corroborate findings across multiple approaches.

### **3.8.2 Reliability**

Reliability refers to the consistency and stability of a measurement or assessment tool over time (Creswell, 2013). Research indicates the extent to which an instrument produces the same results when repeated under similar conditions. A reliable measure consistently yields the same outcomes, thereby enhancing the credibility of the findings and enabling researchers to draw valid and trustworthy conclusions from the data (Creswell and Creswell, 2018).

The data collection approach utilised a consistent and repeatable methodology to maintain uniformity. Quantitative data on capital spending trends were collected from official TNPA publications, assuring the data's accuracy and reliability. Feedback was gathered through interviews with uniform questions aimed to ensure consistency across responses. In addition, coding techniques for analysing qualitative comments were applied systematically to minimize subjective interpretations, ensuring consistency in how the stakeholder feedback was categorized and analysed.

By addressing both validity and reliability, this research seeks to ensure that the findings are not only credible but also applicable and trustworthy, thereby enhancing the overall quality of the study. Validity ensures that the research accurately reflects the phenomena it aims to measure, in this case, capital expenditure practices at the South African ports, while reliability ensures that the results are consistent and replicable over time and across similar studies (Saunders, Lewis, and Thornhill (2016). This dual focus on validity and reliability is critical in establishing the robustness of the research outcomes.

To achieve this, the research employs rigorous methodological procedures that minimize biases, errors, and inconsistencies, thereby strengthening the confidence stakeholders can place in the conclusions. The measures outlined in this section highlight the researcher's commitment to a methodologically sound approach, ensuring that the research findings are not only based on accurate and relevant data but are also dependable and reflective of real-world CAPEX practices. This level of methodological rigor contributes to the integrity of the research process, offering insights that can be trusted to inform policy decisions and strategic planning at the TNPA and similar institutions. Ultimately, by ensuring both validity and reliability, the research provides a solid foundation for contributing meaningfully to the understanding and management of capital expenditure in large, complex organisations like the TNPA.

### **3.9 Ethical Consideration**

This study thoroughly addressed ethical considerations, as the researcher submitted the research proposal to the University of KwaZulu-Natal's Humanities and Social Sciences Ethics Committee. Following a comprehensive review, ethical clearance was granted (Appendix C), ensuring that the study adhered to the ethical standards and guidelines established by the institution. This approval underscores the commitment to upholding the principles of integrity, respect, and accountability throughout the research process. Participants were provided with an informed consent letter detailing the study's purpose, their rights, and the confidentiality of their responses. The study ensured that all collected data was used solely for the purpose of this research and that participants could withdraw at any time without any repercussions. The study adhered to strict data protection protocols by not revealing the names of the interviewees. The 64 publicly available stakeholder's comments for the years 2018 to 2022 submitted to PRSA were analysed, as well as publicly available and audited Annual financial statements that

showed the CAPEX spending of TNPA. ensuring that no sensitive financial information related to TNPA was disclosed without appropriate permissions.

### **3.10 Limitations of the Study**

This study seeks to analyse capital expenditure at the TNPA comprehensively; however, several limitations should be acknowledged. The reliance on publicly available documents may constrain the depth and detail of the financial data, potentially impacting the comprehensiveness of the analysis. Publicly available financial data from entities like the TNPA and the PRSA may lack the clarity needed to evaluate CAPEX decisions at South African ports thoroughly. Missing elements such as project cost breakdowns, timelines, financing structures, and historical investment data make it difficult to track how efficiently funds are allocated or assess such investments' long-term impact. Additionally, external factors such as economic conditions, regulatory shifts, or political pressures are not always clearly documented, further complicating the context behind funding decisions.

These data limitations affect the robustness of conclusions and recommendations derived from the research. Without detailed insights into individual project performance or funding mechanisms, it may become challenging to distinguish between successful and underperforming investments. As a result, the study may rely on broad generalizations, reducing the accuracy and practicality of its recommendations. This lack of details can hinder efforts to propose effective, evidence based strategies for improving CAPEX planning and implementation in South African ports.

Furthermore, the use of purposive sampling may limit the generalizability of the findings to broader contexts. Additionally, while qualitative data analysis inherently carries the risk of subjective interpretation, measures were taken to mitigate potential biases through rigorous systematic coding and the careful identification of themes to enhance the objectivity of the results.

The findings of this study are specific to the South African port system, and generalisation to other regions should be approached with caution, as variations in governance structures, regulatory frameworks, funding models, and operational contexts may significantly influence CAPEX practices in other regions.

### **3.11 Chapter Summary**

This chapter detailed the research methodology adopted for the study of capital expenditure at the South African ports. Employing a mixed-methods approach, the study offers a detailed and comprehensive understanding of the trends and stakeholder perspectives shaping capital expenditure decisions. The subsequent chapters will present the findings obtained from the data analysis and explore their implications for TNPA as well as for the broader maritime industry in South Africa.

## CHAPTER FOUR

### PRESENTATION AND DISCUSSION OF RESULTS AND FINDINGS

#### 4.1 Introduction

This chapter presents and discusses the results from the analysis of capital expenditure at the South African ports. Building on the methodological framework outlined in the previous chapters, it comprehensively evaluates the data gathered through qualitative and quantitative methods. The findings are structured around key themes and trends identified during the research, emphasizing the implications of capital expenditure decisions on port infrastructure development, operational efficiency, and stakeholder satisfaction. This analysis provides critical insights into how these investments impact TNPA's long-term strategic goals and operational outcomes.

The passage effectively sets up the chapter's focus by explaining the analysis of CAPEX trends and their implications. This comparison approach of planned, approved, and actual CAPEX will demonstrate the extent to which the PRSA approved CAPEX allocations using its Records of Decision (ROD). To accomplish this, the researcher reviewed a variety of documents, including tariff application submissions, PRSA's Records of Decision, and stakeholder comments from various parties.

The results will be presented with a critical discussion that contextualizes the findings within the broader context of South Africa's maritime industry. This discussion will interpret the data and examine the interplay between capital investment trends and stakeholder feedback, providing insights into how these dynamics shape future planning and investment strategies at South African ports. In terms of South African port policies and relevant regulations, the National Ports Authority annually submits tariff applications to the Port Regulator. The Regulator then conducts road shows on tariff applications, and according to the National Commercial Ports Policy and the National Ports Act, the regulator invites various stakeholders to submit their views on the tariff application. This dissertation examines and compares the arguments presented by different stakeholders over the 2018/19 to 2022/23 period.

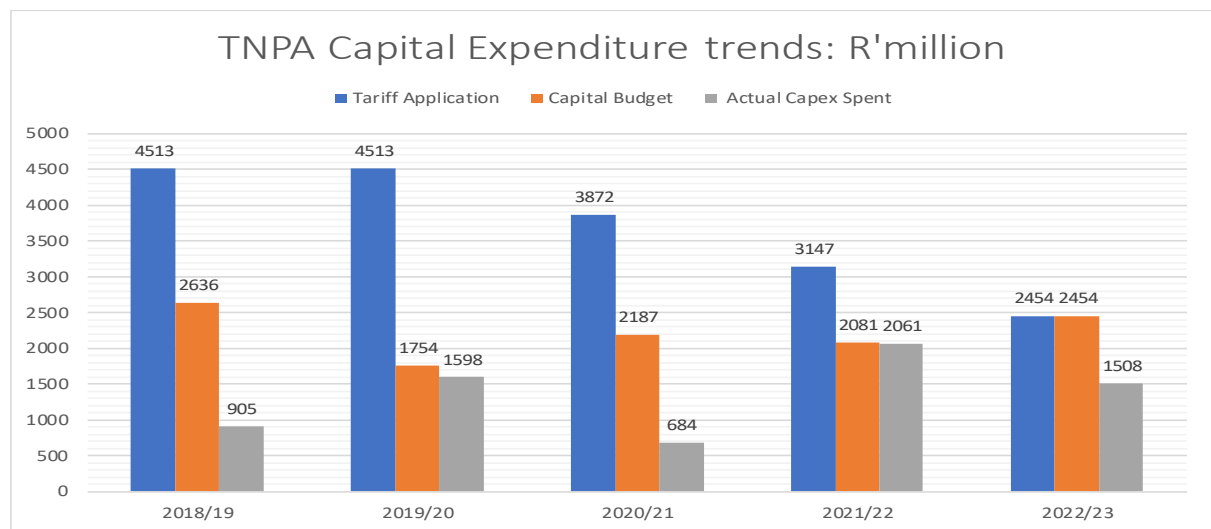
Beyond investment patterns, this chapter also examines how CAPEX decisions influence tariff applications, as regulated by the PRSA. By synthesizing stakeholder perspectives with empirical data, this chapter aims to shed light on the complexities surrounding capital

expenditure decisions and their implications for port operations' overall effectiveness and sustainability. Themes were identified from submissions from stakeholders by coding and evaluating them based on frequency, allowing for the systematic discovery of common themes and patterns. This analysis aims to contribute to a deeper understanding of the dynamics at play within the ports for enhancing capital expenditure practices.

The following section is structured as follows: Section 4.2 provides an analysis of planned, approved, and actual CAPEX for the financial years 2018/19 through 2022/23. Section 4.3 presents stakeholder opinions categorized into main themes, while Section 4.4 digs into a detailed analysis and discussion of these viewpoints. Finally, Section 4.5 contains the chapter's conclusions.

## 4.2 Capital Expenditure Investments

In obtaining the capital expenditure, the required information and data was gathered from the ROD, Transnet tariff applications, and the TNPA financial documents from the years 2018/19 to 2022/23. The Market Demand Strategy (MDS) was announced in 2012 by Transnet, with the goal of reversing previous underinvestment in transportation infrastructure. Transnet anticipated an R300 billion investment project to expand and upgrade South Africa's port and rail infrastructure over a seven-year period and to identify South Africa as a regional standpoint transshipment hub for SSA for the next 7 years (Meyiwa and Chasomeris, 2020). Figure 4.1 below shows and analyses the South African port's capital expenditure over the 5-year period.



**Figure 4.1. TNPA Capital Expenditure Trends**

**Source: Author compiled from data extracted from TNPA, 2023**

Figure 4.1 demonstrates the trends in capital expenditure for NPA across five financial years (2018/19 to 2022/23). Three categories of data are compared for each year: Tariff Application (amount requested or expected in the tariff plan), Capital Budget (amount allocated in the budget), and Actual Capital expenditure Spent (amount effectively utilised). For every year, the tariff application significantly exceeds the approved capital budget. This indicates a persistent gap between the funds requested and those allocated, suggesting either budgetary constraints or a mismatch in funding priorities. The gap is particularly large in 2018/19 and 2019/20, where the tariff application is around R4.5 billion, while the capital budget is approximately R2.6 billion and R1.75 billion, respectively.

The actual CAPEX spent is consistently lower than both the tariff application and the approved budget, reflecting the underutilization of allocated funds. The shortfall between the capital budget and the actual spending widens in some years, notably in 2020/21, where only R684 million of the R2.19 billion budget was spent.

Tariff applications show a declining trend from R4.51 billion in 2018/19 to R2.45 billion in 2022/23. Capital budgets also decrease over the years, from R2.63 billion in 2018/19 to R2.45 billion in 2022/23, possibly due to constrained funding availability. Actual CAPEX spent fluctuates, peaking in 2022/23 at R1.51 billion, which is the highest proportion of the budget utilised in the five-year period. The persistent underutilization of the allocated budget raises concerns about operational efficiency and delays in project execution. In 2020/21, only about 31 percent of the allocated budget was spent, highlighting inefficiencies. The 2022/23 financial year shows significant improvement in actual CAPEX spending of R1.51 billion out of R2.45 billion, with a higher percentage of budget utilization compared to previous years. This may signal better project management or a focus on delivering planned initiatives. The following section discusses the themes identified during the data analysis.

While South Africa's NPA has introduced frameworks like the MDS, its CAPEX performance continues to lag global benchmarks. For instance, top-performing Asian ports invest strategically in mega-hub infrastructure through state support and PPPs, while South African ports have repeatedly fallen short of budgeted CAPEX targets. This divergence contributes to the country's low global efficiency rankings and highlights a critical need for reform in governance and reinvestment strategies.

### **4.3 Themes on South African Ports Tariff Application and Capital Expenditure**

In analyzing the CAPEX trends, it is crucial to understand the stakeholder's perspective, as it reveals the dynamics affecting investment decisions and infrastructure development. The data collection and analysis process revealed several themes that reflect the complexities of South African ports' CAPEX practices. These themes highlight operational challenges and stakeholders' and participants' insights on the adequacy and efficiency of capital expenditure. By presenting and discussing these themes, this study aims to explain the factors influencing capital investment decisions and the broader implications for the port authority's operational and strategic objectives.

**Table 4.1 summarizes the themes and coding discovered from content analysis of stakeholder submissions and the interviews conducted.**

**Table 4.1. Themes and codes identified in the port stakeholders submitted comments and interviews**

Theme	Description	Example Codes	Frequency
1. Lack of Spending and Lifespan of Infrastructure	Concerns about ageing and deteriorating port infrastructure due to delayed maintenance and investment.	Ageing assets, deferred maintenance, obsolete equipment	14
2. Contributing Factors and Consequences of Underspending	Centralised decision-making and lack of reinvestment cited as key reasons for underperformance.	Governance failure, CAPEX shortfalls, disinvestment	4
3. Measures and Incentives to Accelerate CAPEX	Stakeholders propose Public-Private Partnerships (PPPs), autonomy, and improved oversight.	PPPs, incentives, disbursement efficiency	4
4. Regulatory Asset Base (RAB)	Questions raised about valuation methods and their transparency in tariff-setting processes.	TOC vs VoA, asset depreciation, return on capital	10
5. Tariff Above Inflation	Frustration over annual tariff increases outpacing inflation without corresponding service or infrastructure improvements.	Cost mismatch, pricing concerns	13
6. Tariff Methodology	Criticism of the Required Revenue model for lacking incentives for efficiency or accountability.	RR model flaws, outdated pricing logic	9
7. Profitability and Cross-subsidization	Concerns that TNPA's surplus is diverted to support other Transnet divisions rather than reinvested locally.	Internal transfers, non-port expenditure	7
8. Impact on Economy and Monopoly Power	Ports' monopolistic structure affects pricing, competitiveness, and limits economic potential.	Monopoly effects, economic drag	11
9. Job Opportunities	Delays in port expansion and maintenance are seen to hinder job creation and socio-economic upliftment.	Employment impact, missed economic targets	10
10. Unresolved Issues	Stakeholders highlight that many concerns have been raised for years but remain unaddressed.	Legacy issues, lack of reform	4
11. Port Congestion	Equipment failure and infrastructure bottlenecks contribute to chronic delays and inefficiencies.	Vessel queues, extended dwell times	7
12. Global Competition	South African ports fall behind regional peers in infrastructure, investment, and operational efficiency.	Global ranking, lost competitiveness	10

**Source: Compiled by author**

#### **4.3.1 Lack of spending and lifespan of infrastructure**

Infrastructure development and effective capital management are critical to the competitiveness and sustainability of South African ports. However, comments from various stakeholders over the 2018/19 to 2022/23 financial year have shown structural concerns related to the underutilization of allocated CAPEX. These inefficiencies have not only delayed important infrastructure projects but have also resulted in financial clawbacks, higher tariffs, and operational bottlenecks, all of which have a direct influence on the nation's economic activity. While global trade has surged in recent decades, ports have experienced a notable uptick in the volume of cargo moving between international markets (Gumede and Chasomeris, 2015). The expansion of port infrastructure is crucial to accommodate the increasing volume of international trade (Jeevan, Bandara, Saharuddin, Othman, 2015); stakeholders have raised concerns about the lack of spending and lifespan of the infrastructure, which will be discussed below.

The study revealed that a total of 13, representing 20 percent of the stakeholder's submissions over a period of 2018/19 to 2022/23, raised concerns about the lack and lifespan of infrastructure spending. The interviewee one indicated that the lack of appropriate CAPEX allocation and timely maintenance erodes the value of critical port assets. Maintenance, which often requires CAPEX components, is essential for extending the lifespan of assets and ensuring their functionality. Failure to maintain or replace aging infrastructure and equipment compromises port efficiency and reliability, diminishing South Africa's ability to handle ship calls and cargo throughput effectively. In the 2018/19 comments, SAMSA argued that there are significant inconsistencies between the requested CAPEX and actual implementation, raising concerns about the effective allocation and utilization of funds.

To support the stakeholder's perspective, the interviewee two shared the same sentiments and echoed the following: Ports face challenges due to inadequate allocation of funds for essential upgrades and maintenance of equipment, impacting operational efficiency. Aging equipment leads to frequent breakdowns, such as with straddle carriers, affecting port operations. Delays in container handling and inefficiencies in balancing landside and waterside operations negatively impact logistics and customer satisfaction. The interview two highlighted that funding is not an issue in the South African port system; rather, the challenge lies in the use and allocation of the funds. The regulatory process, anchored in the tariff methodology, ensures

a structured approach to determining and managing revenue requirements for port authorities. The tariff methodology serves as the foundation for the authority's spending and funding adequacy, aligning with regulations and governance frameworks.

Each year, the port authority submits its tariff applications outlining strategic objectives and motivations for funding. This submission undergoes detailed analysis by the regulator, considering port development frameworks, master plans, and feedback from consultative committees. The regulator ensures alignment between the proposed plans and the needs of South Africa's economy, focusing on unlocking efficiencies within the port system. While the regulator consistently approves funding requests, issues arise in the execution and utilization of the allocated funds by the authority. For example, while most port master plans have been signed off, some, such as the KwaZulu Natal Masterplan, face challenges due to insufficient justification for proposed expansions, such as the authority's determination to increase capacity from 4 million TEUs to 11 million TEUs without presenting a well-substantiated or sound justification for this expansion. Ultimately, the system's success depends on how well the authority aligns its capital investment plans with economic priorities and stakeholder feedback.

Additionally, SAMSA (2017) indicated that insufficient CAPEX spending has a direct influence on the lifespan and reliability of port infrastructure, causing long-term sustainability challenges. The TNPA must have adequate space and resources to implement the CAPEX plans approved by respective Port Consultative Committees (PCCs). Some CAPEX projects have been omitted from the official schedule, raising questions about accountability and potentially hindering stakeholders' ability to evaluate the full scope of planned investments. The interviewee two revealed that the persistent challenges in CAPEX allocation and management have resulted in misaligned spending priorities, which have diverted resources away from projects critical to meeting economic goals and regulatory mandates. For example, certain projects were undertaken without necessary approvals, undermining the strategic alignment of investments. Such inefficiencies have placed additional economic strain on the port system and hampered progress toward national objectives. Additionally, according to the interviewee four, the project delays result in the underdevelopment of the port system in terms of the development plans that are approved by the Port Consultative Committees.

Furthermore, approved capital projects have also been scaled back, potentially exposing the port system to operational and financial risks. Particularly, issues at the Ports of Mossel Bay and Richards Bay illustrate the negative impacts of these omissions and reductions on

infrastructure and operational efficiency. The 2019/20 tariff application submission highlighted serious concerns about the TNPA's lack of competent capital project management performance (SASOL, 2018). They emphasized that inefficiencies in capital project implementation have led to significant expenses, particularly for operationalizing berth IV5 in the previous years. SASOL stressed the importance of practical consequences for the TNPA to improve oversight of management and outcomes in this crucial sector. They also stated that the existing strategy does not incentivise effective capital project execution, burdening port users with unwarranted inefficiencies. Additional concerns were raised by SASOL in the 2019/20 submission (SASOL, 2018), which highlighted the need for greater transparency in how TNPA manages and reports on CAPEX. The current lack of detailed operational information makes it difficult for port users to assess the efficiency of TNPA's CAPEX. SASOL specifically calls for more detailed information, particularly for chemical products exported in containers and bulk. This level of transparency is necessary to ensure that port users are not bearing the costs of inefficiency.

The Department of Trade, Industry, and Competition (2020), in their 2021/22 submission to the Ports Regulator, cited that it is imperative that the Ports Regulator ensures the TNPA adheres to its planned investments in port infrastructure for the period 2021/22 to 2023/24, as outlined in its tariff proposal. Such investments are crucial for enhancing the overall efficiency of port operations, thereby contributing to improved service delivery and greater cost-effectiveness. By effectively implementing these infrastructure developments, the TNPA can facilitate smoother logistics, reduce operational delays, and mitigate inefficiencies, ultimately fostering a more competitive and sustainable port system.

SAASOA (2018) pointed out that the TNPA has been spending considerably less on CAPEX to maintain its existing capital base than the depreciation charge allowed. Specifically, they noted that the TNPA spent only R1 billion on CAPEX for both expansion and maintenance purposes in its 2017/18 financial statements, which is significantly lower than the depreciation charges. Additionally, they highlighted that the TNPA's historical CAPEX spending has been minimal, with only slightly more than R1 billion spent in previous financial years, such as R2 billion in 2016/17 and R2.9 billion in 2015/16. This lack of investment in new capital raises concerns about the sustainability of the TNPA's asset base and its financial health. CMA CGM (2019) expressed similar concerns regarding the misappropriation of funds intended for operational improvements. CMA CGM believes this lack of transparency and accountability undermines trust and discourages reinvestment in port infrastructure, affecting efficiency and

reliability. SAASOA (2020) indicated that the persistent underspending of CAPEX has led to significant clawbacks each year. Maritime Business Chamber's (2021) comments concluded that the TNPA has consistently projected a high CAPEX but has not made corresponding investments. According to interviewee two, the TNPA submits a tariff application and details the anticipated capital projects to be implemented in the forthcoming years, which are decided by the Ports Regulator if viable, and the Ports Regulator subsequently allocates funds. However, the issue of significant underspending remains a challenge. The TNPA has planned to construct an access road as part of the Durban Port development, which includes improving the access road, terminals, and all facilities at Island View. However, these infrastructure developments are still pending, even though they should have been funded through capital expenditure years ago.

NAAMA (2020, p.7) indicated that “there is a very low level of investment within the South African ports, which can be directly linked to the automotive industry 2035 South African Automotive Master Plan”. NAAMSA (2021) emphasized the prioritization of asset improvement and procurement initiatives aimed at enhancing operational efficiency and service delivery within the port system. This includes the incorporation of working capital CWIP into the RAB. While there is broad support for the expected outcomes of Key Projects, Operation Phakisa Projects, and Strategic Capital Investment Projects, NAAMSA expressed criticism regarding the limited immediate and direct benefits derived from these initiatives.

According to interviewee four, underinvestment has broader economic implications. It undermines South Africa's global competitiveness by increasing the cost of doing business, particularly through higher logistics and port handling costs. The reduced efficiency of ports hampers the competitiveness of South African exports, impacting the nation's ability to compete in global markets. Moreover, the ripple effect of inefficiencies in ports contributes to higher inflation and limits economic growth potential.

#### **4.3.2 Contributing factors and Consequences of underspending**

Interviewees were asked about factors and causes they believe contribute to the underspending on CAPEX at the NPA. The interviewees confirmed the aspects of leadership and organisational instability, the impact on human resources and organisational structure, and leadership in decision-making as key factors/causes contributing to underspending. The interviewees reflected on the following:

#### 4.3.2.1 Contributing Factors

- **Leadership and Organisational Instability**

The TNPA has faced prolonged instability at its leadership level in recent years, significantly impacting its functionality and effectiveness. This includes the suspension of the CEO during the 2024 period, alongside several General Managers (GMs) overseeing crucial functions like infrastructure and finance. Many senior leaders have been either suspended or have left their roles, leading to a vacuum in decision-making and undermining the TNPA's ability to execute its mandates. These disruptions have affected the TNPA's adherence to its regulatory obligations under the Ports Act of 2005.

- **Impact on Human Resources and Organisational Culture**

The relocation of the authority's headquarters, an initiative costing over a billion rands, has negatively affected organisational culture and human resources. Employees and their families experienced significant disturbance, as many were forced to relocate from Durban and Johannesburg to Port Elizabeth without adequate external analysis or impact assessments. This decision also exposed poor infrastructure planning, with the new headquarters accommodating only 60 percent of the workforce. Consequently, overcrowding and reduced employee morale have further strained productivity and collaboration.

- **Leadership and Decision-Making**

The leadership challenges extend beyond instability to include significant lapses in decision-making, particularly regarding CAPEX. The authority has exhibited both under-spending on critical projects and over-spending on non-strategic initiatives. Projects that lacked approval from oversight bodies, such as the NPCC, were still implemented, reflecting gaps in governance and accountability. These practices have called into question the authority's ability to allocate resources effectively in alignment with its strategic objectives.

Interviewee two reflected on delays in capital projects due to corruption and mismanagement, inefficiencies in execution and planning, and skills gaps and processes.

Much of the challenge is attributed to the outsourcing of capital projects, which often results in delays and inefficiencies. Corruption in tender processes has severely affected the TNPA's ability to execute planned projects. In some instances, such as the North Quay deepening,

corrupt practices led to project cessation and subsequent delays. Inefficiencies in tender preparation and project management, coupled with insufficient skills among CAPEX personnel, hinder timely project execution. Inadequacies in the quality of tender documentation leave projects vulnerable to legal challenges, as demonstrated by issues surrounding the Durban Container Terminal (DCT) privatization. Projects like the Bayhead Road widening highlight the slow progress in critical infrastructure upgrades, where feasibility studies take years to initiate and finalize, further delaying project implementation. Projects often experience delays due to issues such as late delivery of equipment, as exemplified by the delayed arrival of tugs that prevented the inclusion of associated expenditures within the financial year.

Another factor emphasized by interviewee four pertains to challenges associated with the implementation of the Public Finance Management Act (PFMA), which is perceived as a significant constraint to the efficient execution of capital projects. The interviewee highlighted that the PFMA implementation is associated with challenges, including creating confusion within managerial and executive structures and complicating approval processes. The PFMA and procurement legislation/regulations often hinder CAPEX performance. In a bid to accelerate the procurement processes, the TNPA has approached the National Treasury to express concerns and seek approval for deviations from procurement processes in a manner that is responsible, honest, and transparent.

#### **4.3.2.2 Consequences of underspending**

This study highlighted the significant consequences of underspending in South African ports. The interviewees revealed that the consequences of underspending are dire for the port users and reflected on the following.

The interviewee two revealed that one significant consequence of underspending on CAPEX by the National Ports Authority is the failure to modernize and expand port infrastructure in line with the growing demands of global shipping. This is particularly evident in projects such as the deepening of berths at Durban Port, which, due to delays and mismanagement, have yet to be completed. The failure to deepen the North Quay berths to accommodate larger vessels has resulted in financial losses. Ships are unable to fully load or unload, leading to inefficiencies in cargo handling and additional operational costs. For instance, ships are only

able to load two-thirds or three-quarters of their cargo capacity, which undermines economic efficiency and increases the cost of exports. Moreover, delayed projects often lead to spiraling costs. The berth deepening project, which was initially planned for completion several years ago, has faced delays due to corruption-related shutdowns. Now, with the project restarting, the cost has reportedly nearly doubled. This increase in cost reflects the financial consequences of delayed CAPEX, as funds initially allocated for the project are insufficient, requiring additional budget approval from the National Treasury.

In addition to the cost overruns, delayed infrastructure development also has operational consequences. For example, large vessels that could not access South African ports, such as Cape Town, due to insufficient berth depth, have had to divert to other ports, causing congestion and delays in those facilities. This diversion impacted export schedules, particularly in critical sectors like citrus exports, where fresh produce must be shipped in a timely manner. The inability to handle larger vessels also reduces port capacity, leading to bottlenecks that disrupt the export of goods, causing financial losses and missed business opportunities. Another example of poor infrastructure planning is the failure to properly widen the port entrance. This decision has resulted in the need for further widening, even though earlier plans should have accounted for the growing size of vessels. As vessels continue to grow, failure to anticipate these changes leads to inefficient use of port facilities and increased costs for necessary modifications.

Interviewee three revealed that the underspending on port infrastructure and equipment in South Africa has led to significant operational inefficiencies and increased costs, particularly in container terminals. A key example is the reliance on straddle carriers for moving containers within terminals. While these machines are essential for port operations, their maintenance costs are exceptionally high due to the complexity of their mechanical, hydraulic, and electronic systems. The breakdowns of straddle carriers have become a persistent issue, with a fleet of 89 straddle carriers often reduced to only 45-50 units in operation on any given day. This frequent downtime impacts the efficiency of container handling, with units continually being sent to the workshop for repairs.

The limited number of operational straddle carriers is further divided between various terminal functions, including waterside operations (loading and unloading containers from ships), landside operations (loading containers onto trucks for delivery), and rail operations (loading containers onto rail wagons for inland transport). The imbalance in the distribution of these

carriers across these functions results in bottlenecks, particularly in the truck loading process, leading to delays in container handling. This inefficiency affects the scheduling and reliability of the truck booking system, which is crucial for timely deliveries.

In addition, the competition between road and rail transport highlights another consequence of inadequate capital expenditure. While rail is a more cost-effective option, it is often significantly slower, taking around 37 to 40 hours to transport containers from ports to inland depots such as Gauteng. In contrast, trucks, though more expensive, can deliver containers to clients' premises the next morning, providing a faster and more reliable option for businesses, especially manufacturers reliant on timely delivery of raw materials. The preference for road haulage over rail increases congestion on South African roads and contributes to safety concerns, with the frequent occurrence of truck accidents.

#### **4.3.3 Measures and incentives to accelerate CAPEX**

The challenges faced by the TNPA in accelerating CAPEX are multifaceted, encompassing structural issues and governance issues. Some of these issues require a strategy that aligns with the PFMA, enhancing operational autonomy and ensuring the prioritization of projects based on availability and readiness.

The interviewees revealed that the existing methodology on asset valuation already incorporates an incentive, as increased CAPEX leads to the construction of additional assets, resulting in a greater return on what is referred to as the Regulatory Asset Base. Consequently, as the asset base expands, the returns will also increase. Regardless of whether the return is a fixed amount, the percentage yield will rise with the construction of more assets. Therefore, there is an inherent mechanism that encourages investment in CAPEX. However, the TNPA's control may limit its ability to leverage this incentive fully. They may have attempted to enhance the valuation of CAPEX or the assets themselves to achieve higher returns. As port users, we do not support this method of asset valuation, as it presents a significant issue by allowing for the possibility of receiving higher returns without any actual construction, merely inflating asset values. Thus, there should be a disincentive against the revaluation of assets.

Interviewee two highlighted that effective planning and communication with stakeholders are critical to optimizing capital projects within the port industry. The case of delayed berth-deepening projects highlights the potential for accelerated spending through improved

oversight and strategic decision-making. Major capital projects, such as these, could benefit from the involvement of the NT to provide independent oversight and enhance governance within the sector. Additionally, incorporating skilled and independent professionals focused exclusively on CAPEX management in the port sector could ensure accountability and efficiency in supply chain processes and project execution. This approach could address inefficiencies and mitigate risks associated with alleged corruption, particularly within entities like Transnet.

Interviewee three indicated that implementing performance-based incentives, such as bonuses, can serve as a motivational tool to enhance staff productivity and operational efficiency within the port sector. Interview findings indicated that instances of perceived “go-slow” activities, while not formally classified as strike action, contribute to operational delays, including vessel berthing and congestion. These inefficiencies not only disrupt the supply chain but also hinder the timely execution of CAPEX. Establishing structured incentive schemes, alongside robust monitoring and evaluation mechanisms, may mitigate such delays, thereby fostering a more conducive environment for accelerating CAPEX implementation.

Based on the discussion with the interviewee, it was indicated that adherence to the PFMA remains critical for ensuring accountability and transparency in the capital projects process. To mitigate delays associated with regulatory compliance, TNPA must streamline its processes to obtain approvals, particularly when deviations are necessary. Proactive and timely submission of deviation requests, coupled with transparent communication, will reduce bottlenecks. A critical measure is the TNPA’s focus on bankable and approved projects that have undergone rigorous feasibility and review processes. By conducting a detailed review, TNPA can ensure that projects entering the execution pipeline are ready for immediate implementation. This includes validating the availability of requisite skills and resources in the market to support project delivery. Moreover, leadership stability and the availability of skilled personnel are essential for effective project execution. The voluntary severance packages previously offered resulted in a loss of experienced staff, creating a gap that has been inadequately filled by inexperienced replacements. A recalibration of human resources is necessary, balancing the inclusion of new talent with the retention and mentorship of skilled professionals to maintain institutional knowledge and operational capacity. Efficient project management and procurement processes are at the heart of accelerating capital expenditure. TNPA must invest in the development of robust systems and training programmes to enhance its expertise.

Mentorship initiatives, combined with improved recruitment and retention strategies, will ensure that project delivery aligns with the authority's mandate and economic objectives.

The TNPA board plays a vital role in overseeing and approving strategic initiatives. Strengthening the board's capacity through targeted governance reforms and providing it with adequate resources will facilitate more efficient decision-making. In turn, this will enable TNPA to overcome delays linked to bureaucratic processes and focus on delivering impactful capital projects. Furthermore, open and consistent communication with stakeholders, including government entities and industry players, is essential for building trust and managing expectations. Acknowledging and addressing delays transparently will foster greater collaboration and support for TNPA's initiatives.

#### **4.3.4 Regulatory Asset Base**

The Regulatory Asset Base (RAB), which signifies the total value of assets on which the TNPA is entitled to earn a return, plays a crucial role in determining the Revenue Requirement (Transnet, 2018). Out of the 64 comments submitted, 10 (16 percent) of stakeholders commented on the RAB over the five-year period. The following section discusses the extracts from the stakeholder's submissions.

The current valuation method for the RAB received criticism for its inherent shortcomings by the NPCC, particularly its negative influence on tariff estimates, which results in increased revenue requirements. In the 2021/22 submitted comments, the Department of Trade and Industry proposed a lower RAB to reduce the revenue required, which will consequently have some effect on the tariff imposed on stakeholders. The stakeholders, such as SAAFF and Cape Chamber of Commerce and Industry, concurred that the practice of revaluing pre-1990 assets based on replacement cost rather than historical cost had been a persistent source of contention among these stakeholders. There was a consensus that this methodology exaggeratedly inflates the RAB, thereby enabling NPA to generate revenue from assets that were originally financed entirely by taxpayers many decades ago, without additional investment on its part.

The results of the content analysis support those obtained from interviews, revealing a consistent alignment between the two data sources. The participants' reflections indicated that the different methodologies for the valuation of assets emphasized a shift from using replacement costs to repayment values for the RAB. Interviewee One explained that the

previous approach, which relied on the optimized replacement costs, was problematic because it allowed the NPA to inflate the asset values without making actual investments in new assets. Instead, the regulator moved towards a financial capital maintenance approach, which is based on the Trended Original Cost, thereby disincentivising the revaluation of assets solely for profit generation. This change aims to ensure that the valuation reflects actual financial performance rather than inflated asset values.

SAAFF (2021) commented on the opening Net Book Value (NBV) for the 2022/23 financial year, which revealed an increase when compared to the NBV for the previous year as outlined in the ROD and mentioned that the discrepancy remains unexplained within the documentation, raising concerns about the accuracy and transparency of the reported figures. Additionally, the association has previously raised concerns regarding the calculation of the RAB. In response to these concerns, the Regulator articulated a revised methodology for determining the RAB in its 2018 guidance. The new approach was designed to provide a more accurate reflection of the asset base, which, had it been applied, would have resulted in a considerably reduced RAB. This reduction would have had significant implications for the Authority's tariff applications and revenue generation.

However, a decision was made to retain the TOC calculation model, which only marginally reduced the RAB value in the subsequent years. While this approach has provided some continuity, SAAFF believes that it does not fully address the underlying concerns regarding the accuracy and fairness of the RAB calculation. The Association remains committed to a comprehensive review of the RAB methodology and anticipates that this review will occur once the NPA is corporatized.

Such a review would enable a more precise valuation of the RAB, which is essential for ensuring that tariff structures and business operations are based on reliable and fair asset valuations. Additionally, the persistent failure of the TNPA to implement the approved hybrid methodology for valuing the RAB remains a significant concern. Adopting the approved methodology would lead to a more accurate RAB valuation, reducing the required revenue and resulting in lower average port tariffs.

Four interviewees described that the corporatization of the authority is central to its ability to operate autonomously and independently, aligning with the objectives outlined in the Ports Act. Full corporatization would enable the TNPA to independently report to the Department of

Transport, such as the Airports Company South Africa (ACSA) functions independently of airlines and other stakeholders. This independence could potentially directly impact the TNPA's capacity and capability to fulfill its mandate effectively. Capital investment emerges as a core element within this process, further reinforcing the importance of separating the authority from Transnet to function as a separate entity. This narrative is also supported by Meyiwa and Chasomeris (2020), who recommend that the TNPA be established as a stand-alone entity, separate from Transnet. They argue that this restructuring would align the governance framework with international best practices for landlord ports, thereby reducing conflicts of interest, enhancing transparency and accountability, and attracting private investment into the port system. This structural independence is critical for the authority to effectively serve South Africa's economic interests. Interviewee Four further highlighted that despite the requirement stipulated in the Act for the establishment of an independent board upon its promulgation, which should have been implemented nineteen years ago, this has not been realized. The entity continues to lack its own independent board and remains under the oversight of the Transnet board, undermining its intended autonomy.

In the 2021/22 comments, SAASOA highlighted that between 2008/9 and 2018/19, the TNPA employed the Depreciated Optimised Replacement Cost (DORC) methodology to assess the value of its RAB. However, the Ports Regulator raised concerns regarding the application of the DORC methodology, particularly with respect to assets such as quay walls, jetties, breakwaters, sea walls, dredged channels, basins, and graving docks. Resulting in a significant increase in the TNPA's RAB in 2008. Despite these concerns, the Regulator accepted the valuation, primarily due to the lack of an alternative at the time. In 2013, the Ports Regulator initiated an independent assessment by its own consultants, targeting an evaluation of roughly a quarter of the RAB. However, this independent valuation was not finalized due to budgetary limitations.

#### **4.3.5 Tariff above inflation**

Oner (2019, p.31) defines inflation as "the rate of increase in prices over a given period of time." It generally refers to a broad metric, such as an overall increase in prices or a rise in the cost of living in a country. According to Tshiakambila, (2016, p.56), "Inflation in South Africa is measured by the CPI, which is a current social and economic indicator that is designed to measure changes over time in the general level of prices of consumer goods and services that

households acquire, use or pay ” The South African Reserve Bank (SARB) is responsible for monetary policy, including managing inflation. As defined by the SARB, South Africa’s CPI inflation target range is set at 3 to 6 percent. Figure 4.2 indicates the percentage change in port tariffs from 2019 to 2023 in comparison to the average inflation rate.

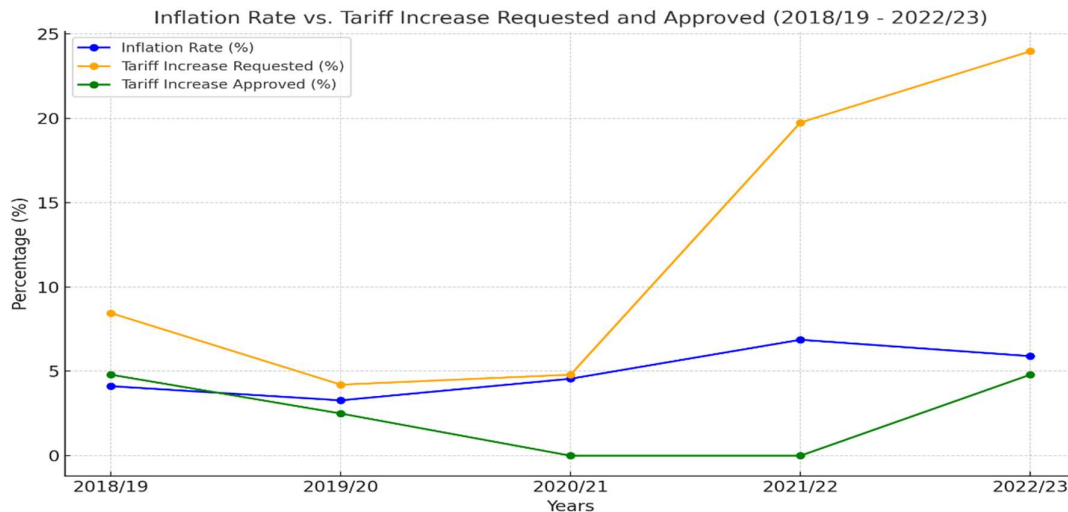


Figure 4.2 Inflation Rate NPA Tariff Increase Requested and Approved

Source: Author created using information compiled from Ports Regulator of South Africa (2018-2023) and Trading Economics (2024).

The inflation rate varied significantly between 4.12 percent (2018/19) and 5.90 percent (2022/23), peaking at 6.87 percent in 2021/22. This suggests heightened economic pressures, particularly during and after the COVID-19 pandemic, which disrupted global supply networks and pushed prices higher (World Bank, 2024). The requested tariff increases ranged widely, with notable highs in 2021/22 (19.74 percent) and 2022/23 (23.96 percent). These significant increases were partly a result of lower trade volumes and the need for significant cash to fund rising operational costs, maintenance, and infrastructure upgrades under inflationary pressures. The NPA used the Required Revenue model to calculate an average annual tariff increase of 23.96 percent for the 2022/23 financial year. Recognizing the potential impact of such a significant hike, the NPA requested to utilize R1.25 billion from the ETIMC facility. This adjustment aimed to alleviate the burden on stakeholders by reducing the proposed tariff increase to a more manageable 9.40 percent (Port Regulator, 2021).

The PRSA consistently approved average tariffs lower than the proposed tariffs by the NPA. Despite the proposed increase in both 2020/21 and 2021/22 financial year PRSA, no tariff increase was approved, reflecting regulatory or policy decisions, likely prioritizing economic stability and mitigating the financial burden on stakeholders. This decision reflects a cautious approach to balancing regulatory oversight with the economic realities faced by businesses and consumers. A substantial discrepancy exists between the requested and approved tariff increases, especially in the 2021/22 and 2022/23 financial years, where the proposed tariff increases significantly surpassed historical patterns and inflation rates.

According to the stakeholder's submissions made to the PRSA over a five-year period (2018/19 to 2022/23) regarding tariff applications, with a specific focus on tariffs exceeding inflation. A total of 64 submissions were received from various stakeholders, of which 13 specifically raised concerns about tariffs being above inflationary levels. The argument surrounding tariff increases above inflation reveals substantial opposition from

across various sectors. The key arguments reflect concerns about economic sustainability, competitive positioning in global markets, and the broader implications for trade and business operations. The following section will discuss the findings derived from comments on tariffs exceeding inflation submitted by various stakeholders.

The CPI plus 3 percent formula was expressly questioned for its suitability. The lack of transparency and reason for this model is viewed negatively, with stakeholders criticizing it as excessive and unsuitable. The drawback is that the formula does not appropriately account for the financial impact on businesses and the economy as an entirety. Stakeholders frequently emphasize the broader economic context, highlighting that the proposed tariff increases are disproportionate to the prevailing financial climate. For example, in the 2022/21 financial year, comments submitted by the Cape Chamber of Commerce and Industry (2021) assert that the country's financial crisis renders any administered price increases above inflation "unreasonable and unacceptable." This sentiment underscores the strain that excessive tariffs place on businesses already grappling with challenging economic conditions.

Stakeholders emphasized the negative impact of tariff increases on South Africa's global competitiveness and trade operations. In the 2022/23 financial year, Anglo-Americans (2021) highlighted that excessive tariff increases, nearing double digits, could stall export activities. Such increases amplify operational costs, reduce profit margins for exporters, and hinder the

ability of South African ports to compete in international markets. Additionally, inefficiencies, such as berthing delays, exacerbate the financial burden on users. In contrast, in the 2022/23 comments, VUKA Marine (2021) advocates for the continuation or expansion of cost reductions for South African-registered ships engaged in international transport. Their approach demonstrates the need to foster a competitive advantage for domestic firms through cost incentives rather than imposing higher tariffs.

The SAAFF (2020) reminded TNPA of its duty to ensure affordable, efficient port services aligned with global cost trends. Stakeholders perceive that the proposed increases deviate from this mandate by pushing tariffs above the targeted inflation rate of 3 to 6 percent and global benchmarks.

The South African Oil and Gas Alliance (SAOGA), representing the upstream and complementary downstream oil and gas industries in South Africa, has submitted comments for the 2021/22 financial year, advocating for a reduction in port tariffs that adversely affect the sector. The Alliance contends that the excessive port tariff charges significantly undermine the competitiveness of South Africa's ship and rig repair industry, rendering it less competitive compared to its global counterparts. SAOGA (2020) further emphasizes that port tariffs in South Africa are markedly higher than those of international competitors, posing a substantial barrier to growth and market positioning. Additionally, concerns were raised regarding the inadequacy of port equipment in South Africa, which often necessitates supplementary equipment hire at additional cost. To address these challenges, SAOGA has called for port tariffs in the ship and rig repair industry to be maintained at a minimum level. This measure, they argue, would not only enhance the competitiveness of the industry but also stimulate economic growth by fostering industrial activity and creating employment opportunities within the sector.

Interviewees Two and Four pointed out the existence of financial reserves (e.g., the ETIMC fund) that could be utilised to mitigate tariff increases. This reserve mechanism offers a potential pathway to balance financial needs without disproportionately burdening users. The Ports Regulator's methodology, designed to balance allowable revenue and operational costs, is seen as a critical tool for addressing these concerns effectively. Eastern Cape Maritime Chamber (2021) indicated that the core concern of TNPA should not be focused on tariff increases but rather on improving port efficiency. As a result of heightened tariff increases, neighboring countries are capturing a significant portion of business due to the high costs of

South African ports, slow vessel turn-around times, and the lack of infrastructure development and upgrading.

#### **4.3.6 Tariff Methodology**

The findings revealed that in its previous submission for the financial year 2021/22, the SAAFF (2020) highlighted significant concerns regarding the inherent limitations of the current tariff methodology, as reflected in the Authority's executive summary from that year's application. Interviewee Four highlighted that the tariff methodology serves as the foundation for the authority's spending and funding adequacy, aligning with regulations and governance frameworks. The tariff methodology operates as a multi-year process, allowing for stability and predictability in tariff adjustments. It serves as an anchor point for all tariff-related activities, including the determination of RR. However, the SAAFF (2020) anchored that the limitations have once again become evident in the most recent application. Specifically, the tariff methodology mandates disproportionate increases when the volume and revenue growth from prior years fall short of expectations, coupled with relatively low volume growth assumptions. These increases often exceed what would be considered appropriate in a low-growth economic environment. According to interviewee One, the methodology incorporates the RR model, which calculates the NPA's necessary revenue to meet its operational and investment objectives. This model is a key determinant in aligning funding availability with strategic goals. The authority has a legislated obligation to adhere to the tariff methodology. This compliance ensures that the allocation of funds and capital investments aligns with the regulatory framework and industry expectations.

SASOL (2018) highlighted that the connection between CAPEX management and the tariffs charged by the TNPA is crucial. Inefficient capital projects and overspending ultimately affect the cost structure of the ports, which is reflected in higher tariffs for port users. SASOL (2018) calls for better alignment between CAPEX performance and tariff adjustments, ensuring that the inefficiencies and financial burdens from poorly executed capital projects are not passed on to port users. Clear and transparent CAPEX reporting should be an integral part of the tariff application process to ensure that the TNPA's capital spending is both effective and justifiable.

The methodology where TNPA profits flow through to Transnet has raised concerns where SASOL (2018) emphasized that this practice results in port users effectively cross-subsidizing other Transnet activities. This observation highlights a critical need for a more equitable

financial framework to ensure that revenue generated by TNPA directly supports its operations and infrastructure rather than subsidizing unrelated activities.

The Cape Chamber of Commerce and Industry (2019; 2020) criticized the continued reliance on outdated tariff methodologies in both the 2020/21 and 2021/22 financial years. This approach was deemed inadequate for addressing current economic realities and was described as needing replacement with more adaptive and transparent methodologies.

The SAAFF (2021) noted inherent limitations in the current tariff methodology. Specifically, it highlights that unrealistic volume and revenue growth assumptions lead to excessive tariff increases, exacerbating low economic growth conditions. The reliance on the ETIMC to cushion port users against sharp tariff hikes that arguably should not be imposed depletes funds intended for customer benefit. While temporarily alleviating high tariff increases, this approach may not address the structural weaknesses in the methodology, creating long-term sustainability risks.

#### **4.3.7 Profitability and Cross-subsidization**

The stakeholders' comments from the different years highlight a persistent concern about cross-subsidization within Transnet, particularly related to the flow of profits from the TNPA to other divisions of Transnet. The issue remains a key point of contention, affecting port users' costs and the overall financial structure of Transnet.

The Cape Chamber of Commerce and Industry (2017) comment suggests that the TNPA has become a "cash cow" for Transnet, which implies that TNPA's financial performance, particularly its profit, is utilised to support the broader Transnet Group, likely at the expense of port users. The findings from the content analysis were consistent with the responses from interviewee One; the interviewee indicated that funds intended for CAPEX are reportedly redirected to less profitable divisions within Transnet, further exacerbating the issue of underspending on CAPEX. Furthermore, the lack of independence in decision-making regarding CAPEX and the absence of control over the TNPA's own bank accounts negatively impact the entity's financial autonomy. Revenue collected daily is redirected to Transnet's bank accounts, limiting the entity's ability to manage and allocate funds directly toward its CAPEX needs. Complete financial control would enable the entity to independently manage its financial resources.

This may suggest that the TNPA generates significant revenue without adequate reinvestment or returns to stakeholders, potentially resulting in higher costs for port users. SASOL (2018) echoed similar concerns, arguing that TNPA has been generating excessive profits, a trend observed in its revenue reports over several years, and specifically points out that these profits have been funded by port users, implying that the tariff structure might be disproportionately high, causing financial strain on businesses relying on port services.

SASSOA (2018) raised concerns with TNPA's asset valuation, noting that for nearly a decade, the TNPA has profited excessively from the use of "elderly capital stock" assets that, according to their argument, have been overvalued in the calculation of RAB. This overvaluation, combined with a lack of significant new capital investments, has allowed TNPA to earn what they describe as "supernormal profits." Furthermore, this overvaluation has reportedly led to minimal reinvestment in new capital infrastructure, which could signal an inefficient allocation of resources, as the authority appears to prioritize profit generation over infrastructure investments.

All four interviewees highlighted that the TNPA steadily demonstrates strong profitability, with the Port Regulator's support ensuring its ability to generate and exercise revenue within the framework of the tariff methodology. However, a critical observation pertains to the reinvestment of profits. Despite generating a healthy profit annually, there is a lack of clarity regarding whether these profits are effectively reinvested into the TNPA's authority to strengthen its operations, capital projects, and strategic objectives. This raises questions about the alignment of profit utilization with organisational development and the broader goals of enhancing port efficiency and economic contribution.

#### **4.3.8 Impact on Economy and Monopoly Power**

The formulation and implementation of tariff structures play a crucial role in determining the competitiveness and sustainability of industries within South Africa. Over the years, stakeholder feedback on tariff applications has provided invaluable insights into the challenges and concerns faced by businesses, particularly in the context of a struggling economy. Tariff applications, while necessary to sustain operations and infrastructure, often ignite debate due to their potential to increase financial burdens on already vulnerable industries.

Stakeholders consistently highlight the strained economic conditions, including a weak national economy, a volatile currency, and the impact of global and domestic economic downturns. Specific comments, such as those from ArcelorMittal (2019) and the Cape Chamber of Commerce and Industry (2020), highlight the unsustainability of tariff increases under current economic conditions. For example, ArcelorMittal (2019) comments emphasized the inability of the local steel industry to absorb increased costs, citing a depressed economy as the main driver. The Cape Chamber of Commerce and Industry (2020) noted that the methodology for determining tariff increases failed to consider South Africa's broader economic realities.

The comments from 2021 and 2022 reflect the compounded challenges brought by the COVID-19 pandemic. Stakeholders such as Erakis (2020; 2021) and DTIC (2020) noted the economic toll of forced shutdowns, loss of income, retrenchments, and decreased business activity. These findings point to the need for policy adjustments that consider the broader economic impact of external shocks, such as pandemics, to mitigate their effects on businesses and the economy at large.

NAAMSA (2017) argued that the proposed tariff increases for 2018/19 contradict the directive of the NPA to decrease the cost of conducting and operating business in South Africa and promote economic growth. Furthermore, it conflicts with the vision of the Department of Public Enterprises (DPE), which seeks to unlock growth and foster industrialization within the country. The SAAFF concluded that the TNPA continues to face significant challenges in fully understanding and addressing the broader economic implications of its tariff decisions on the South African economy. This concern has been echoed by numerous stakeholders across various sectors, who have consistently expressed dissatisfaction with TNPA's approach to tariff determination and its perceived disregard for the economic realities faced by businesses. These findings suggest that tariff proposals need to be formulated with greater sensitivity to prevailing economic challenges, ensuring affordability and sector-specific considerations.

The findings suggest that TNPA is accumulating profits from the ports. Transnet is able to charge inflated prices due to its monopoly status on all South African ports. These high monopoly profits result in the transfer of financial resources from port users to TNPA. It is the responsibility of the Ports Regulator of South Africa to examine and address any misuse of monopoly power.

## **Monopoly Power**

The Cape Chamber of Commerce and Industries (2017) cites evidence of substantial overcharging, with cargo dues reported to be 874 percent higher than the global average. This indicates a lack of competitive pricing mechanisms typically found in more competitive markets, reinforcing the notion of monopolistic practices. The Cape Chamber of Commerce (2017) argues that the revenue generated by TNPA is not being used productively, with allegations of wasteful spending and corruption within Transnet. This inefficiency is characteristic of monopolies, where the absence of competition can lead to mismanagement of resources. The existence of a regulatory body, the Ports Regulator, is intended to oversee tariff applications and ensure fair treatment. However, the Cape Chamber of Commerce and Industries comments suggest that the regulatory framework may not be sufficient to counteract the monopolistic tendencies of TNPA, as they call for a "claw-back" provision to address historical overcharging.

### **4.3.9 Job opportunities**

The Cape Chamber of Commerce and Industry (2020) emphasizes that excessive tariffs hinder the competitiveness of exporters, particularly in labour-intensive sectors like agriculture. This reflects the broader economic implications of monopolistic practices, where high costs can stifle growth and innovation within the economy. Osho Cement (Pty) Ltd's (2017) initiatives, particularly through the establishment of the Cementitious Grinding Facility at Coega IDZ, are expected to create significant job opportunities; this aligns with the company's commitment to local employment. Osho Cement (2017) believes that the project is positioned to create meaningful job opportunities, enhance local skills, and stimulate economic growth in the Eastern Cape region, contributing positively to the overall development of South Africa. FPT Group Pty Ltd (2018), a prominent terminal operator in most major ports across South Africa, has expressed robust support for Osho Cement's application. The company emphasizes that the establishment of Osho Cement's operations will significantly contribute to the development of the Coega Port. This development aligns with the strategic goal of enhancing port infrastructure, fostering increased cargo handling capacity, and strengthening the region's logistics network. Moreover, FPT Group highlighted the potential for substantial job creation, thereby addressing unemployment challenges and boosting local economic development.

SASOL (2018) highlighted that the lack of adequate infrastructure, particularly in port operations, directly affects job creation and economic stability, and inefficiencies may result in production curtailment, ultimately leading to job losses. ArcelorMittal South Africa (2019) raised concerns to the Ports Regulator about proposed increases in cargo dues for the 2020/2021 period. The company suggested that the increases of 4.8 percent for break bulk and 7.4 percent for coal above inflation threaten their competitiveness in both exporting finished steel and importing raw materials. The company highlighted that these higher logistics costs, which already make up a significant portion of their expenses, potentially harm local manufacturing, jeopardize job sustainability, and worsen the unemployment crisis in South Africa. ArcelorMittal South Africa (2020) shared the same sentiment in the 2021/22 comments submission, noting that it is not feasible for the industry to absorb these additional costs without severe repercussions. The tariff proposed could jeopardize the viability of the local steel industry, which directly supports approximately 190,000 jobs. Erakis (2020) also argued that the result of the tariff increase could add to the already struggling local businesses, which could potentially exacerbate job losses.

#### **4.3.10 Unresolved Issues**

Over the five-year period from 2018/19 to 2022/23, four key stakeholders raised concerns regarding the proposed tariff increases by the TNPA. These stakeholders emphasized the need for TNPA to give due consideration to unresolved issues previously highlighted during consultation processes. The recurring nature of these concerns suggests a significant gap in addressing stakeholder feedback, underscoring the importance of integrating stakeholder input into tariff determination to ensure a fair and transparent process that reflects the operational realities and economic challenges faced by affected industries.

Stakeholders such as the NPCC pointed out that issues previously submitted to the PRSA had not been addressed. This sentiment underscores the frustration over unacknowledged feedback, suggesting a disconnect between stakeholder engagement and actionable outcomes. The persistence of these unresolved issues diminishes stakeholder confidence in the consultation process, highlighting the need for a more effective feedback mechanism. Ocean Africa raised concerns regarding the reoccurrence of anomalies in tariff applications, noting that issues corrected in one cycle, such as those from 2017/18, resurfaced in subsequent years (2018/19). NAAMSA acknowledged the ROD but emphasized that the intended benefits were not

realized. They reiterated the need for a baseline comparator to benchmark South Africa's port network against global standards. This recurring request underscores stakeholders' concerns regarding the competitiveness and efficiency of South African ports in the global trade landscape. The absence of benchmarking not only hinders meaningful evaluation but also limits the ability to address inefficiencies within the port network effectively. These stakeholders have noted that critical issues were either not addressed or were inadequately communicated, even during official roadshows or presentations.

#### **4.3.11 Port Congestion**

The NPCC (2017) noted significant congestion problems, particularly in the Durban and Richards Bay ports. The NPCC expresses concern that discussions regarding these issues are ongoing but show little progress, indicating a lack of effective resolution strategies. The comments submitted highlighted that the real-time loss risk for shipping lines due to congestion is substantial, with a staggering USD 17 million in losses recorded since 2005. This figure underscores the financial implications of port inefficiencies and the urgent need for improvements.

At the Port of Richards Bay, the average anchorage detention time has exceeded 5.8 days per vessel call, which exacerbates delays and increases operational costs for shipping companies. The NPCC points out that siltation in shipping lanes, particularly in Durban, has reduced the draft from 12.5m to 12.2m, directly impacting vessel operations. This issue is compounded by inadequate dredging maintenance, which is critical for maintaining pilotable depths and ensuring efficient port operations.

The Anglo-American (2021) comments highlighted significant delays at the Richards Bay port, with excessive marine service closures recorded in the previous year. For instance, in 2020, there were 48 days of weather-related delays, while the current year-to-date for 2021 shows 41 days of delays, indicating a persistent issue with port efficiency. The COVID-19 pandemic has exacerbated existing challenges, leading to increased delays due to testing requirements and operational restrictions. Anglo-America (2021) further noted that only one private launch boat was operational, which was insufficient for the port's needs, further contributing to delays.

The performance of Transnet, particularly in terms of rail services, has been criticized. The report indicates a reduced tonnage exported due to Transnet's inefficiencies, with a significant

drop in the number of vessels calling at Richards Bay. This has resulted in a backlog and a reduction in revenue flows into the South African economy. Delays have led to increased demurrage costs for shippers as they bear the financial burden of slow turnaround times and port inefficiencies. Anglo-Americans (2021) emphasized that the risk of demurrage is entirely on exporters, which places additional financial strain on them. This points to poor infrastructure and maintenance as contributing factors to port congestion. It mentions the deteriorating state of port roads and the lack of basic services, which further complicates operations and efficiency. The findings indicate that port congestion and delays at Richards Bay are multifaceted issues that stem from both operational inefficiencies and external factors such as the COVID-19 pandemic. The interviewee Three highlighted that the ongoing delays not only affect the immediate operations of the port but also have broader implications for the South African economy, particularly in terms of export revenues and competitiveness in the global market. The underspending on CAPEX also affects the confidence of stakeholders, including shipping lines and international trade partners. Delays and inefficiencies observed in recent years, particularly during disruptions at Durban's port, highlighted the critical role of collaborative efforts to address these challenges. Stakeholder forums such as the Port Consultative Committees and National Ports Consultative mechanisms provide avenues for democratized participation in port management but require the TNPA to prioritize CAPEX and maintenance.

The Cement and Concrete SA (CCSA) (2021) highlighted in 2022/23 significant congestion issues at South Africa's ports, which adversely impact logistics efficiency and disrupt supply chain operations. This congestion has a cascading effect on the prioritization and clearance of imported goods, particularly those considered non-critical, such as cement and clinker. The Cement company noted that severe port congestion has prompted calls to prioritize the offloading of urgently needed or critical commodities over non-essential imports like cement and clinker. This strategy aligns with the government's localization objectives, encouraging the support of local industries over imported alternatives. The congestion issue underscores the importance of prioritizing local production capacity, which remains underutilised. The local cement industry, capable of producing 20 million tonnes annually, operates at only 13 million tonnes due to the influx of imported cement and clinker, exacerbated by port inefficiencies.

Erakis (2021) indicated that the escalation in Free on Board (FOB) costs, coupled with rising freight rates, a shortage of equipment, limited vessel space, and intense competition for

shipping capacity—particularly from exporters of fresh produce, minerals, and commodities—creates significant barriers to growth and success for small and medium-sized enterprises.

As highlighted in the 2022/23 NAAMSA submission to the Ports Regulator, port congestion remains a critical challenge for the South African automotive industry. The automotive sector, a vital contributor to South Africa's economy, relies heavily on efficient and cost-effective port operations to maintain competitiveness in global markets. However, the industry continues to experience systemic inefficiencies, such as berthing delays, vessel turnaround time, and truck turnaround time. These inefficiencies directly impact the automotive supply chain, resulting in higher logistics costs, production delays, and reduced competitiveness.

The NAAMSA (2021) submission further states that port delays affect the timely export and import of automotive components and vehicles. This challenge is compounded by the industry's price sensitivity, where any inefficiencies translate into higher costs. While the Tariff Review acknowledged reductions in container cargo dues and export charges, automotive cargo owners still face significant premiums. A 123 percent premium recorded in 2019/20 remains a major concern. The automotive industry was not immune to the disruption caused by the pandemic. The pandemic severely disrupted the global and domestic supply chains, causing backlogs in port operations. These disruptions intensified pre-existing port inefficiencies, further delaying recovery.

VUKA Marine (2021) proposed a prioritized berthing system for South African-registered ships arriving from foreign ports. This recommendation seeks to address port congestion by ensuring timely access to berths for vessels under the national flag.

#### **4.3.12 Global competition**

Although TNPA remains profitable, its continued price increases pose significant challenges for port users in maintaining sustainable profit margins. NAAMSA (2017) contended that the proposed tariff increases on motor vehicles and containers further undermine the competitiveness of South Africa's ports. NAAMSA has also argued that these increases are inconsistent with the NPA's directive to reduce the cost of conducting a business in South Africa. The SAAFF (2017) acknowledges that substantial progress has been made in narrowing the pricing gap between TNPA and its international counterparts. However, the gap remains

considerable, and the progress achieved is likely to be significantly undermined or even reversed by the magnitude of the proposed tariff increases.

ArcelorMittal South Africa (2019) and SAGO (2019) highlighted that the proposed tariff increases for break bulk and coal, ship, and rig repair industry by the TNPA adversely affect the company's ability to competitively export finished steel products and import essential raw materials. SAGO agreed with ArcelorMittal South Africa's sentiment that the increase in tariff compromises the competitiveness of the oil and rig industry, causing some companies to cease operation. ArcelorMittal South Africa further cited that increases further diminish South Africa's competitiveness against major steel-producing and exporting nations, such as China, exacerbating challenges for the local steel industry in maintaining its position in global markets. CMA CGM (2019) highlighted that South Africa's ports are not considered cost-effective compared to global standards due to inefficiencies and high port expenses. Frequent berthing delays and additional marine charges significantly increase operational costs, averaging approximately \$700 per hour, further discouraging carriers from utilizing South African ports. The Cape Chamber of Commerce and Industry (2021) highlighted that the proposed tariff increases, if implemented, are likely to have a detrimental impact on TNPA interests by accelerating the tendency of ocean carriers to bypass South African ports. There is already evidence of vessels selecting the neighbouring ports, such as the port of Maputo and Walvis Bay, a trend that is expected to intensify if the new tariffs are approved. This shift further undermines South Africa's position as a preferred maritime hub in the region. Anglo-America (2021) believes that the impact of competition and costs must be maintained in order to attract and retain international trading partners; this could be achieved by ensuring that the Richards Bay port remains a port of choice and that South Africa is a preferred country in international trade.

#### **4.4 Discussion**

The study offers insights into the allocation, management, and impact of CAPEX within South African ports. Over the 2018/19 to 2022/23 period, highlighting recurring inefficiencies, such as the persistent underutilization of approved budgets, delays in infrastructure projects, and misaligned spending priorities. These findings emphasize the complex interrelation between governance, economic priorities, and operational challenges. This section contextualizes the findings of the study within the literature.

- **Tariff Methodology and Economic Implications**

The study indicated that the current tariff methodology employed by the NPA has inherent limitations, which have been echoed in previous research. For instance, Chasomeris and Gumede (2022) argue that ineffective tariff structures can lead to monopolistic practices, resulting in excessive profits for port authorities at the expense of port users. This aligns with the findings from the stakeholders, who reported cargo dues are suggestively greater than the global average, suggesting a lack of competitive pricing mechanisms. The implications of such tariff structures are profound, as they not only affect the cost of doing business but also influence the overall economic landscape of South Africa. The economic toll of high tariffs is further compounded by external shocks, such as the COVID-19 pandemic, which has exacerbated existing challenges in the port sector (Grater and Chasomeris, 2022). Stakeholders have highlighted the need for policy adjustments that consider these broader economic impacts, reinforcing the argument that tariff proposals must be sensitive to prevailing economic conditions. This perspective is maintained by Beria et al. (2015), the author emphasized the significance of aligning port pricing with economic realities to foster growth and competitiveness.

The study critiques the tariff methodology and RAB practices, which stakeholders argue inflate costs and hinder competitiveness. For example, the use of replacement cost valuation for pre-1990 assets has been criticized for exaggerating the RAB, leading to higher tariffs. Stakeholders emphasized the need for a more transparent and equitable tariff methodology. Comparatively, countries with adaptive and stakeholder-inclusive tariff models have demonstrated better alignment between port pricing and economic objectives (Ferrari et al., 2015). Revising the RR methodology to reflect the actual RAB values and financial performance could reduce revenue requirements and enhance tariff fairness (Grate and Chasomeris, 2022; Chasomeris and Gumede, 2022).

- **Global Competitiveness**

The study's findings show that aged infrastructure and delayed projects limit South Africa's capacity to compete worldwide. For example, the inability to deepen Durban Port's North Quay berths caused financial losses since ships could not completely load or unload. Clark et al. (2004) examine similar concerns, pointing out that port inefficiencies raise logistical costs, impair export competitiveness, and result in wasted economic opportunities. Furthermore,

stakeholders reported that delays in infrastructure projects, such as the Bayhead Road expansion, worsen operational bottlenecks. In comparison, ports in Southeast Asia have used timely infrastructure upgrades to increase capacity and attract global commerce (Bottasso et al., 2013). South African ports must prioritize infrastructure development to remain competitive in a fast-changing global commerce landscape.

Additionally, the study highlights the impact of port inefficiencies on critical industries, such as agriculture and manufacturing. Stakeholders noted that delays and high tariffs disproportionately affect export-oriented sectors, diminishing their ability to compete in global markets. These findings are similar and consistent with research by Chang et al. (2014), which underscores the significance of efficient port operations for supporting trade and economic growth.

South Africa's declining port competitiveness continues when compared to regional and global counterparts such as Maputo, Walvis Bay, and Singapore. According to the 2022 Container Port Performance Index by the World Bank major ports such as Durban, Cape Town, and Ngqura ranked among the lowest globally, with Durban placed 398th out of 405. In contrast, Maputo in Mozambique ranked 248th and Walvis Bay in Namibia 293rd, underscoring the relative operational advantage of neighboring ports. These ports have attracted growing volumes of cargo due to more efficient customs processes, lower congestion, and improved infrastructure. Meanwhile, leading Asian ports like Singapore benefit from integrated governance models, significant state investment, and public-private partnerships features lacking in South Africa's hybrid and often fragmented port governance. The Asian port doctrine, with its centralized, development-focused approach, has enabled sustained efficiency gains and infrastructure modernization. Serving as a model, South Africa could adopt to enhance global competitiveness and reduce costly cargo delays.

- **Lack of maintenance**

The lack of maintenance and the underinvestment in port infrastructure in South Africa has been widely discussed by various stakeholders, and these issues have profound consequences for the country's competitiveness in the global market. As evidenced in the stakeholder submissions from the 2018/19 to 2022/23 financial years, the inadequacies in CAPEX allocation have led to operational inefficiencies, underutilization of assets, and delays in vital infrastructure projects, all of which have tangible effects on the economy.

The deficiency of appropriate maintenance and underinvestment in port infrastructure in South Africa is a pressing issue that impacts the competitiveness of the South African ports and the broader economy. According to the CPPI report provides an important global perspective on how port performance directly correlates with infrastructure investment, including maintenance and upgrades. The failure to allocate adequate funds for CAPEX, along with inefficiencies in fund utilization, exacerbates delays, increases operational costs, and undermines South Africa's global competitiveness. Moving forward, the government and port authorities must prioritize infrastructure maintenance and investment to avoid further erosion of the country's economic potential and to align with global best practices.

This discussion is further contextualized with insights from the World Bank's CPPI, which provides a global benchmark on port performance and efficiency. Hattingh (2023, p.1) mentioned that the "World Bank and S&P Global Market Intelligence's 2022" CPPI ranked South African ports lowest on the global index, with Port of Gqeberha at 291st, Durban at 341st, and Cape Town at 344th out of 348, highlighting the challenges these facilities face in terms of efficiency, infrastructure, and competitiveness. Additionally, the World Bank (2023) the CPPI ranked the South African port the lowest amongst the SSA region, with the port of Port Elizabeth (Gqeberha) at 391<sup>st</sup>, Durban 399<sup>th</sup>, Ngqura 404<sup>th</sup>, Cape Town 405<sup>th</sup>.

- **Leadership and Organisational Instability**

The study identifies leadership instability as a significant barrier to effective CAPEX execution. The suspension of senior managers and organisational disruptions have undermined the NPA's ability to deliver on its mandates. Literature by Mpofu (2010) reveals that infrastructure project fulfillment is, to some extent, governed by the existence and presence of leadership in project implementation. This is echoed by Narayanan, Douglas, Guernsey, and Charles (2002), who cited that the performance of top leadership is the main determinant of the success of teams. To ensure successful implementation, leadership needs to identify project leaders that are likely to empower, monitor, and balance the project. Stakeholders also highlighted issues related to governance, including the mismanagement of funds and lack of accountability, which stakeholders perceive as a constraint to efficient project execution. Addressing these governance issues requires strategic reforms to enhance leadership stability and operational efficiency.

Recently, the South African landscape of SOEs, particularly Transnet, has undergone significant changes driven by leadership changes aimed at fostering better operational

efficiency and economic growth. The removal of several CEOs, as noted by the Durban Chamber of Commerce and Industry (Steyn, 2023), highlighted the urgent call for reform within the organisation, which plays a critical role in the logistics and transport sectors of the nation.

The frustrations expressed by business representatives can be contextualized within broader discussions about governance and accountability in SOEs. Research indicates that leadership stability is crucial for the effective functioning of SOEs, as consistent leadership can foster trust and improve stakeholder relations (Jeremiah, Atiku, and Villet, 2023). The recent leadership changes at Transnet may indicate a strategic realignment to address these concerns and enhance operational effectiveness.

Moreover, the Government of National Unity (Government Communication, 2024) creation and the appointment of a new Transport Minister (Department of Transport, 2024) is a pivotal moment that may facilitate reforms within Transnet. The literature emphasizes the importance of political stability for economic development (Mlambo, 2021). Integrating the NPA under the Department of Transport is a strategic move aimed at streamlining operations and enhancing regulatory oversight, which has historically been a challenge in South Africa's port management (Marine Review Africa, 2024). This shift could potentially lead to more coordinated policies that better serve the logistic needs of the country.

Public-private partnerships are emerging as a critical mechanism for stimulating public infrastructure, including the Durban Container Terminal project. However, the ongoing legal contestations surrounding the Durban Container Terminal project underscore the complexities that can arise in implementing such partnerships (Maree, 2024). Literature indicates that legal and regulatory barriers are significant challenges that can block the successful realization of PPP initiatives (Rezouki and Hassan, 2019).

In conclusion, the recent changes in leadership at Transnet, combined with the new governmental framework and the exploration of PPPs, signal a potential turning point for the organisation. While optimism prevails, it is crucial for stakeholders to navigate the associated challenges diligently. Future research should prioritize evaluating the effectiveness of approaches and their effect on the operational and economic performance of Transnet and the broader transport sector in South Africa.

- **Economic Impact**

The economic implications of CAPEX inefficiencies are far-reaching. Delayed infrastructure projects, such as berth deepening, have increased operational costs and reduced export competitiveness. For instance, the study notes that vessels unable to access South African ports due to insufficient berth depth often divert to alternative ports, such as Maputo and Walvis Bay. This trend aligns with findings by James (2024), who argues that inefficiencies in South African ports drive trade to more efficient regional competitors.

Additionally, the findings of Mthembu and Chasomeris (2023) emphasize that the lack of investment in tugboat maintenance is not merely an operational concern but a fundamental economic issue with widespread implications. Ports that fail to address inefficiencies in marine services risk higher operational costs, declining competitiveness, and reduced economic contributions to national and regional trade. Additionally, effective governance of marine services is crucial to ensure that investment decisions align with long-term port development goals. By addressing these issues, ports can enhance efficiency, maintain competitiveness, and support broader economic growth. Overall, inadequate investment in tugboats limits economic growth, as ports with unreliable marine services struggle to attract global trade. Addressing these challenges requires strategic investment, fleet renewal, and effective governance of marine services to enhance efficiency, reduce costs, and maintain port competitiveness (Mthembu and Chasomeris, 2023).

- **Capital expenditure trends**

The study's findings show a consistent discrepancy between the funds requested in tariff applications and those allocated in the capital budget, raising concerns about the NPA's capacity to invest in critical infrastructure investments. The result aligns with the finding in the literature on port investment, which indicates that insufficient financing might impede operational efficiency and competitiveness. For example, Mlambo (2021) examines the crucial importance of funding in port-related infrastructure development, pointing out that insufficient investment may lead to congestion and inefficiencies, reducing the port's economic viability.

One of the study's critical findings is the underutilization of allocated CAPEX funds, with significant discrepancies between the approved budgets and actual expenditures. For example, only 31 percent of the allocated budget was utilised in 2020/21. This inefficiency aligns with

observations in the literature (Chasomeris and Gumede, 2022); South Africa's port system faces a range of interconnected challenges, including "inadequate infrastructure, persistently reduced investment, outdated machinery, and ageing equipment" (Mthembu and Chasomeris, 2023), where delayed implementation of critical infrastructure projects are common in developing economies (Gumede and Chasomeris, 2015). According to Jeevan et al. (2015), efficient CAPEX utilization is crucial for port competitiveness and economic growth, especially as global trade volumes increase.

Stakeholders in the study emphasized the adverse consequences of inefficiencies, such as the depletion of asset value and reduced infrastructure lifespan. This finding resonates with Fraser and Notteboom (2016), who argue that poor maintenance and delayed investments diminish port efficiency and reliability. Addressing these inefficiencies requires robust governance frameworks and transparent financial practices to ensure optimal resource allocation.

Additionally, the trend of declining capital expenditure relative to tariff applications suggests a misalignment between the NPA's financial strategies and the operational needs of the ports. This misalignment is echoed by Chang et al. (2014), who conducted an input-output investigation of the economic effect of port sectors on the South African economy, found underinvestment in port infrastructure can have cascading effects on local economies, emphasizing the need for strategic investment to enhance port performance and regional economic development.

- **Monopoly Power and Regulatory Challenges**

The findings also highlighted regulatory challenges faced by the NPA, particularly concerning its monopoly status over South African ports. The literature indicates that monopolistic practices can lead to inefficiencies and mismanagement of resources, as evidenced by the allegations of corruption cited by the Cape Chamber of Commerce (2017) within Transnet. The Ports Regulator of South Africa is tasked with overseeing tariff applications and ensuring fair treatment; however, the findings suggest that there may be a disconnect between regulatory oversight and the realities of port operations. This concern is supported by the work of Bichou (2021), who emphasizes the need for effective governance and regulatory frameworks to ensure that port authorities operate in a manner that promotes competition and efficiency. The study's findings suggest that the NPA's current practices may not align with these principles, raising

questions about the effectiveness of existing regulatory mechanisms in addressing the challenges posed by monopoly power.

The NPA, being a division of the Transnet Group rather than a subsidiary, has had significant implications for the governance, regulation, and performance of South African ports. The NPA Act of 2005 clearly outlined the intention for the NPA to become a subsidiary of Transnet, but this transformation has faced delays and challenges over the years. Although initially expected to happen by September 2025, the latest tariff application from the NPA now forecasts that the change will occur by the 1<sup>st</sup> of April 2025. While the timeline has shifted, the shift to subsidiary status is seen as a critical step for improving the regulation, governance, and financial health of ports of South Africa. Meyiwa and Chasomeris (2020) alluded that the TNPA should be established “as a stand-alone entity” separate from Transnet. They argue that this restructuring would align the governance framework with international best practices for landlord ports, thereby reducing conflicts of interest, enhancing transparency and accountability, and attracting private investment into the port system.

- **The role of stakeholders**

The research highlighted the value of stakeholder involvement in shaping tariff methodologies and capital expenditure decisions. Stakeholders, including industry associations and business representatives, have consistently expressed dissatisfaction with the NPA's approach to tariff determination, highlighting the need for greater sensitivity to the economic realities faced by businesses. According to Tijan, Jovi' and Karaniki' (2019), the size and complexity of modern seaports cannot be viewed as single entities. As integral components of the transport system, seaports involve extensive cooperation among various stakeholders, including port authorities, shipping companies, and freight brokers.

Furthermore, the economic implications of stakeholder feedback are significant. As noted in the study, the proposed tariff increases could accelerate the tendency of ocean carriers to bypass South African ports in favour of neighbouring ports, undermining South Africa's position as a preferred maritime hub. This trend is concerning, as it could lead to a decline in trade and economic activity, reinforcing the need for the NPA to adopt a more collaborative approach to tariff setting and capital investment.

- **Risk assessment**

The persistent inefficiencies in CAPEX implementation and infrastructure development across South Africa's port system present tangible risks to both economic performance and institutional credibility. One major risk is infrastructure failure due to deferred maintenance and underinvestment, which can lead to terminal congestion, equipment breakdowns, and increased turnaround time, thereby exacerbating port inefficiency and reducing global competitiveness.

In addition, financial penalties may be incurred by the NPA and port operators due to breach of service-level agreements or delays in handling cargo, which can strain already limited resources. These operational bottlenecks may also affect downstream industries reliant on efficient logistics, such as manufacturing and agriculture. Moreover, the lack of consistent CAPEX execution, coupled with weak oversight and frequent leadership changes, fuels investor uncertainty, particularly among private sector stakeholders considering long-term infrastructure partnerships or concession agreements.

These risks collectively undermine the objectives of the ports reform agenda and South Africa's broader aspirations to serve as a regional trade hub. Consequently, a credible and accountable CAPEX framework, improved institutional governance, and transparent tariff-setting mechanisms are crucial to mitigating these risks and restoring confidence among users and investors alike.

#### **4.5 Chapter Summary**

The analysis of capital expenditure in South African ports paints a concerning picture of inefficiencies in budget use, infrastructure development, and regulatory processes. These issues have far-reaching consequences for the efficiency of operations and the competitiveness of the ports. Although ports serve as the key factor in enabling international trade, the underutilised CAPEX allocation, combined with leadership instability and governance challenges, has hindered progress in infrastructure maintenance and development. This has led to operational bottlenecks, reduced competitiveness, congestion, and higher costs for port users.

Stakeholders have repeatedly called for urgent reforms in the management of CAPEX. They stress the importance of transparent reporting, focusing on critical projects, and aligning investments with economic priorities. Many have criticized the current tariff methodology and

regulatory asset-based practices for driving up costs and limiting the competitiveness of the ports. To address these concerns, strategic governance reforms, inclusive planning, and a focus on leveraging CAPEX to improve efficiency and sustainability are essential.

Modernizing South Africa's ports requires tackling leadership and organisational challenges, simplifying procurement processes in an accountable, honest, and transparent manner, and fostering better collaboration with stakeholders. By taking these steps, the NPA can ensure that its investments in capital expenditure not merely boost growth in the economy and enhance global attractiveness but also contribute meaningfully to South Africa's development goals.

In the chapter that follows, the researcher will summarise the findings and provide recommendations for potential areas of future research.

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The study aimed to analyse the capital expenditure for South African ports by analyzing the capital expenditure trends during the 2018/19 to 2022/23 financial years, along with stakeholders' comments. The chapter's aim is to link the five study objectives to the findings and provide a conclusion and recommendations.

The five study objectives are as follows:

1. To analyse the capital expenditure trend at South African ports from the financial year 2018/19 to 2022/23.
2. To evaluate the stakeholder's comments about capital expenditure at South African ports from the financial year 2018/2019 to 2022/23.
3. To investigate the contributing factors and challenges faced by the South African ports in the implementation of Capital projects.
4. To ascertain whether any/incentives can be put in place to accelerate spending on Capital projects.
5. To investigate the underlying consequences of underspending on Capital expenditure at South African ports.

The data gathered on stakeholders' comments was analysed using thematic analysis. Additionally, the study employed a qualitative research approach by conducting interviews with four individuals who are experts in the port industry. The data collected was analysed using the NVivo software combined with the traditional thematic analysis, which entailed identifying pertinent themes and organizing the collected data into cohesive concepts.

This chapter also seeks to provide recommendations emanating from the interviews and the analysis of the stakeholder's comments and highlight any possible areas for future research. The chapter is structured as follows: Section 5.2 presents a summary of findings relevant to each of the five objectives. 5.3 provides the conclusion from the study, Section 5.4 Recommendations of the study, and Section 5.5 provides Limitations and Areas for Future Research.

## **5.2 A Summary of Findings relevant to each research objective**

The study is aimed at addressing the five research objectives, and a brief summary of the findings related to these objectives is presented below. The study's findings will subsequently serve as the foundation for formulating the recommendations.

### **5.2.1 To analyse the capital expenditure trend at South African ports from the financial year 2018/19 to 2022/23.**

The research objective one emanated from the first research question: What is the capital expenditure trend at South African Ports from FY 2018/2019 to FY 2022/2023?

The study revealed notable fluctuating and consistent differences between the tariff application (requested funds) and the approved capital budgets, indicating budgetary constraints or mismatched funding priorities.

In the 2018/19 tariff year, the NPA submitted a Tariff Application of R4.51 billion, but only R2.63 billion was approved in the Capital Budget. However, the Actual CAPEX Spent was significantly lower at R905 million, highlighting a severe underutilization of funds and a substantial shortfall between the requested and approved amounts.

For 2019/20, the Tariff Application remained at R4.51 billion, but the Capital Budget was reduced to R1.75 billion. Despite this reduction, Actual CAPEX Spent was R1.59 billion, reflecting an improvement in fund utilization compared to the previous year. However, actual spending still fell short of the requested amount.

In 2020/21, the Tariff Application dropped to R3.87 billion, with an approved Capital Budget of R2.19 billion. However, Actual CAPEX Spent was only R684 million, representing just 31 percent of the allocated budget. This marked the most significant underutilization of funds in the five-year period, likely due to project delays or operational bottlenecks affecting fund utilization.

In 2021/22, the NPA submitted the Tariff Application of R3.15 billion; however, only R2.08 billion was approved in the Capital Budget; however, the Actual Capital spent was R2.06 billion, a trend marked an improvement in fund utilization, with nearly the entire budget spent, showing better project execution.

The fluctuation over the period, with the highest utilization rate, was observed in 2022/23, amounting to R1.51 billion spent over an amount of R2.45 billion; this suggests potential improvements in project execution and management efficiency. This indicates a potential enhancement in project management and a focus on delivering planned initiatives, although overall underutilization remains a concern. The persistent shortfalls and inefficiencies in budget utilization raise concerns about operational efficiency and project delays.

The dissertation identifies a persistent pattern of underspending by TNPA despite rising projected CAPEX. This trend reflects institutional and operational inefficiencies, particularly in procurement, equipment failures, and delayed project execution (TNPA, 2023). The implications point to a mismatch between strategic intentions and actual implementation capacity. This analysis can be deepened by recommending performance-based CAPEX and improved transparency in reporting.

The findings suggest a need for better alignment between requested and allocated funds, as well as improved strategies for capital budget utilization to enhance project delivery.

### **5.2.2 To evaluate the stakeholder's comments about capital expenditure at South African ports from FY 2018/2019 to 2022/23.**

Stakeholders raised numerous interests concerning the capital expenditure practices of the TNPA. A recurring theme in their comments is the persistent underspending of the approved CAPEX budget; stakeholders, including CMA CGM, NAAMSA, and the Eastern Cape Maritime Chamber, have highlighted that while the NPA projects high CAPEX, actual investments do not align with these projections. Moreover, stakeholders have pointed out that the funds intended for CAPEX are often redirected to less profitable divisions within Transnet, which exacerbates the issue of underinvestment in critical infrastructure. This practice has led to a perception that the NPA operates as a “cash cow” for Transnet, generating significant revenue without adequate reinvestment into port facilities. TNPA is a division of the Transnet Group, and this has resulted in a perceived lack of independence in financial decision-making that further complicates the situation, as revenue collected is redirected to Transnet’s accounts, limiting the TNPA’s ability to spend funds effectively on its own CAPEX requirements.

Stakeholders have also raised concerns about the impact of these inefficiencies on South Africa’s global competitiveness. The underinvestment in port infrastructure increases logistics

and handling costs, which hampers the competitiveness of South African exports. Additionally, issues such as port congestion, particularly in the Port of Durban and the Port of Richards Bay, have been highlighted, with significant financial losses attributed to these inefficiencies NPCC (2017). Furthermore, stakeholders raised further issues surrounding the CAPEX at the NPA, including challenges related to infrastructure lifespan, the regulatory asset base, NPA corporatization, global competitiveness, profitability, port congestion, and tariff structures. Criticism was particularly directed at the existing tariff methodology, which has been critiqued as many stakeholders claim that it allows TNPA to make excessive profits and does not appropriately incentivise improved CAPEX maintenance and productivity of the ports. Stakeholders such as SASOL (2018) emphasized the importance of transparent reporting and aligning investments with broader economic priorities to address these issues effectively.

Stakeholders repeatedly raised concerns about unjustifiable pricing methodologies, infrastructure neglect, and lack of reinvestment (Meyiwa and Chasomeris, 2020). These views support the need for reform in governance models and call for a participatory port planning framework.

### **5.2.3 To investigate the contributing factors and challenges faced by the South African ports in the implementation of Capital projects.**

The NPA faces several challenges in implementing capital projects, including leadership instability, governance issues, and inefficiencies in budget use. These factors have led to operational bottlenecks and higher costs for port users. Stakeholders have highlighted the need for urgent reforms in management practices, including simplifying procurement processes and fostering better collaboration with stakeholders to enhance project execution and infrastructure development. The operational challenges, including the suspension of senior management, have created decision-making vacuums and undermined the execution of capital projects. Relocation of headquarters led to reduced morale and overcrowding, further straining productivity. Mismanagement and corruption, particularly in tender processes, exacerbate delays and inefficiencies.

The implementation of the PFMA complicates procurement processes, causing approval bottlenecks, and it hinders CAPEX performance, making it challenging for the NPA to respond swiftly to operational needs. Regulatory and legislative frameworks are perceived as significant constraints to efficient capital project execution. The regulatory framework is often hindered

by the NPA's lack of an independent board, affecting its autonomy and governance efficiency. Delays in infrastructure development increase operational costs, reduce port efficiency, and lead to missed business opportunities.

Ports fail to accommodate larger vessels, resulting in financial losses and cargo diversions to neighbouring ports. Stakeholders criticize inflated tariffs and lack of alignment between investments and economic priorities. Inconsistent reporting on CAPEX projects and spending diminishes stakeholder confidence. Ageing infrastructure and inefficiencies have hindered South Africa's competitiveness in global trade, with stakeholders advocating for urgent modernization and better project execution.

The analysis highlighted several institutional barriers, such as centralized decision making in Transnet, governance overlaps, and an outdated RR model, that hamper effective CAPEX execution.

#### **5.2.4 To ascertain whether any/incentives can be put in place to accelerate spending on Capital projects.**

To accelerate spending on capital projects, stakeholders suggest implementing strategic governance reforms, focusing on critical projects, and enhancing transparency in reporting. Additionally, fostering collaboration with stakeholders and simplifying procurement processes in a responsible and transparent manner are essential measures that could facilitate more efficient capital expenditure practices. Moreover, simplifying and expediting the approval processes for capital projects is crucial. The TNPA should work towards reducing bureaucratic bottlenecks associated with the PFMA by establishing clear guidelines for deviation requests and ensuring timely communication with stakeholders. This would facilitate quicker decision-making and project initiation. Implementing performance-based incentives for staff involved in project management and execution can enhance productivity and operational efficiency. Bonuses or other rewards for meeting project milestones or completing projects ahead of schedule can motivate personnel to prioritize CAPEX initiatives and reduce instances of perceived “go-slow” activities that contribute to delays. Investing in training and development programmes for CAPEX personnel is essential. By enhancing the skills and competencies of staff, the NPA can improve project management capabilities and ensure that projects are executed efficiently. This includes mentorship programmes to retain institutional knowledge while integrating new talent. Engaging independent professionals to oversee major capital projects can enhance accountability and governance. This independent oversight can help

mitigate risks associated with corruption and inefficiencies, ensuring that projects are executed transparently and effectively.

Encouraging private sector investment in capital projects through PPP can accelerate infrastructure development. By providing tax incentives or guarantees for private investors by the National Government, such as reduced corporate tax rates for companies involved in infrastructure through PPPs, the NPA can leverage additional resources and expertise to expedite project implementation. Additionally, establishing robust monitoring and evaluation mechanisms to track project progress and spending can help identify delays early and implement corrective actions. Regular reporting on CAPEX performance can ensure accountability and facilitate timely interventions when projects are at risk of falling behind schedule.

### **5.2.5 To investigate the underlying consequences of underspending on Capital expenditure at South African ports.**

The consequences of this underspending include reduced operational efficiency, increased congestion at ports, and higher costs for users, ultimately undermining the competitiveness of South African ports (and trade) in the global market. Stakeholders have called for a more collaborative approach to tariff setting and capital investment to address these issues effectively. High tariffs, exacerbated by the lack of competitive pricing mechanisms, have been reported by stakeholders. These costs are often passed on to businesses relying on port services, leading to financial strain and reduced competitiveness in the global market. The failure to invest adequately in capital projects has led to ageing infrastructure, which compromises the NPA's ability to handle increasing cargo volumes and meet global shipping demands. This deterioration can result in operational bottlenecks and reduced reliability.

### **5.3 Recommendation of the study**

It is essential to evaluate the effect of re-valuating the RAB using a financial capital maintenance approach, grounded in historical cost and TOC, on the financial sustainability of the NPA and the associated costs incurred by port users.

The corporatization of the NPA (where the NPA becomes a subsidiary of Transnet) must be accelerated to ensure that revenues and profits are effectively reinvested into the port system

for the maintenance and upgrading of essential infrastructure. Additionally, this transition would facilitate the establishment of fair and competitive pricing structures that align with the interests of port users. Corporatization would also prevent TNPA's profits from being utilised to cross-subsidize other less profitable divisions, thereby enhancing transparency and financial accountability. Restructure the NPA as a financially autonomous, independent entity with a dedicated board and operational separation from Transnet SOC Ltd, in line with the National Ports Act. This could include legislative amendments to reinforce NPA's independence and accountability mechanisms.

Given the dynamic of the port infrastructure developments, it is imperative that the NPA adopt and expand the PPP models; the private sector involvement has demonstrated significant potential in driving sustainable growth and efficiency in the port sector. The growing participation of private partners in the port development projects highlights the growing trend towards collaboration between the public and private sectors to meet the capital-intensive demands of port expansion. The government should invest in developing clear, transparent, and well-structured PPP frameworks that clearly define the role, responsibilities, and financial arrangements between the PPPs and the SOEs. This will ensure effective partnerships and timely delivery of projects within the budget.

To reduce stagnation in port development and increase competitiveness in the region, the government should embrace the expertise, efficiency, and innovation brought by private sector involvement. By partnering with businesses investing in modern port technology, SOEs can be able to optimize resources and infrastructure capacity. The PPP should be encouraged to focus on innovation in port management, machinery, and handling equipment. This is demonstrated in several ports around the world; the example is the involvement of the China Shipping Container Line in utilising Piraeus as a centre of transshipment. Private involvement in optimizing port operations can significantly improve port efficiency. Productivity increased volumes and efficiency at that container terminal with the Chinese terminal operator (Psaraftis and Pallis, 2012).

To address the concern raised by stakeholders, it is recommended that the TNPA implement a more transparent and accountable financial management framework. The framework could include an independent oversight by establishing an independent oversight body to monitor CAPEX projects and spending, ensuring that funds are redirected towards critical infrastructure projects. Enhancing communication and stakeholder engagement to ensure feedback is

acknowledged and acted upon will rebuild trust in the consultation process. Moreover, developing a baseline to compare South Africa's ports against global standards, allowing for meaningful evaluation of performance and identification of areas for improvement. The NPA and PRSA should also consider revising the tariff methodology to ensure it reflects a competitive pricing mechanism, thereby alleviating the financial burden on port users and fostering a more conducive environment for investment.

Working collaboratively with regulatory bodies to simplify and expedite approval processes under the PFMA, allowing for more agile responses to capital project needs. Focusing on training and developing the skills of personnel involved in CAPEX management to improve project execution and management capabilities and allocate enough resources for the upkeep and improvement of current infrastructure to extend the lifespan of assets and improve overall port efficiency.

It is recommended that the NPA prioritize the implementation of these measures in a phased approach, starting with the most critical areas, such as streamlining approval processes and enhancing performance incentives. Additionally, engaging key participants, including government entities and corporate sector partners, in the development of these strategies will foster collaboration and ensure that the measures are effectively tailored to meet the unique challenges faced by the port sector. By doing so, the NPA can create a more conducive environment for accelerated capital spending, ultimately leading to improved infrastructure and enhanced competitiveness in the global shipping industry.

#### **5.4 Limitations and Areas for Future Research**

The research interviewed only four participants, who are independent consultants and the main representatives of their organisation; these individuals possess expertise in the port sector. The research only encompassed a five-year period. To enhance and enrich an in-depth understanding of the capital expenditure within the South African ports, future research should consider broadening the scope by including additional key port users and representatives from shipping lines and agents. These key stakeholders would provide valuable insight. Additionally, interviewing representatives from the Department of Transport (DoT), TNPA, and other relevant stakeholders would present a more thorough perspective of the issues surrounding the implementation of capital expenditure. Expanding the range of participants in

future studies will ensure a more holistic understanding of the challenges, perspectives, and collaborative opportunities related to CAPEX.

Furthermore, future studies on capital expenditure trends at the NPA could explore a range of areas to deepen understanding and address current limitations. Firstly, researchers could investigate the sustained effect of capital investment decisions on operational performance as well as economic growth, including comparative studies across similar organisations in Sub-Saharan Africa. Secondly, studies could focus on evaluating innovative financing models or public-private partnerships to mitigate underspending and accelerate capital project delivery.

## **5.5 Conclusion from the study**

The stakeholder comments regarding capital expenditure at the South African ports from FY 2018/2019 to 2022/23 reveal a landscape marked by significant challenges. The persistent underspending of CAPEX, misallocation of funds, and lack of transparency have led to operational inefficiencies that threaten the competitiveness of South African ports. Stakeholders' frustrations underscore the urgent need for a reevaluation of financial management practices within the NPA to ensure that capital investments align with the growing demands of global trade.

Additionally, the NPA's challenges in implementing capital projects stem from a complex interplay of factors, including budget underutilization, corruption, regulatory constraints, ageing infrastructure, and inadequate strategic planning. These challenges not only hinder the NPA's operational efficiency but also have broader implications for South Africa's economic attractiveness and the effectiveness of its port system.

Accelerating spending on capital projects within the South African ports requires a multifaceted approach that addresses existing inefficiencies and promotes a culture of accountability and performance. By streamlining approval processes, implementing performance-based incentives, investing in skills development, ensuring independent oversight, incentivising private sector participation, and establishing regular monitoring mechanisms, the NPA can enhance its CAPEX execution and ultimately improve port infrastructure. Expanding PPPs in the port sector offers a promising path toward enhancing infrastructure investment and efficiency.

## 6. REFERENCES

Acciaro, M. (2004). Private sector financing of container terminal infrastructure, Erasmus University, Rotterdam.

Alamouh, A. and Ölçer, A., (2024). Navigating the future: analysing maritime autonomous surface ship projects and anticipating future needs. In Maritime Transport Conference (No. 10). Universitat Politècnica de Catalunya. Iniciativa Digital Politècnica.

Alvi, M. H. (2016). A manual for selecting sampling techniques in research. Pakistan: University of Karachi, Iqra University.

Angelopoulos, J., Chlomoudis, C., Flegkas, C., Leonardou, P. & Vrysagotis, V., (2019), 'Uncharted waters-independent regulation for port concessions', in Paper presented at the International Association of Maritime Economists Conference, Athens, 25–28 June, pp. 1–23.

Anglo-Americans, (2021). Port Regulator of South Africa. National Ports Authority Tariff Application 2022/23 – 2024/25. [Online] Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed on 06 November 2024).

Anthony E. Boardman, Greenberg, D.H., Aidan R. Vining and Weimer, D.L., (2018). Cost-benefit analysis: Concepts and practice. Cambridge University Press.

ArcelorMittal, (2019). Ports Regulator of South Africa: National Ports Authority Tariff Application 2020/21 – 2022/23. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2020-21-2022-23/> (Accessed on 26 November 2024).

ArcelorMittal, (2020). Ports Regulator of South Africa: National Ports Authority Tariff Application 2021/22 – 2023/24. Stakeholders' submissions and comments in response to the NPA Tariff Application. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2021-22-2023-24/> (Accessed on 15 November 2024).

Bennathan, E. & Walters, A. A., (1979). Port Pricing And Investment Policy For Developing Countries, The World Bank : Oxford University Press.

Beria, P., Ramella, F., and Laurino, A. (2015). Motorways economic regulation: A worldwide survey. *Transport Policy*, 41, 23–32. <https://doi.org/10.1016/j.tranpol.2015.03.010>

Bichou, K., (2021), Development of a strategic plan for port performance improvement in South African container terminals, United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki.

Birks, M. and Mills, J., (2022). Grounded theory: A practical guide.

Borenstein, S., Bushnell, J., & Knittel, C. R. (1999). Market Power in Electricity Markets: Beyond Concentration Measures. *The Energy Journal*, 20(4), 65-88. <https://doi.org/10.5547/ISSN0195-6574-EJ-Vol20-No4-3>.

Bottasso, A., M. Conti, C. Ferrari, O. Merk, and A. Tei. (2013). The impact of port throughput on local employment: Evidence from a panel of European regions. *Transport Policy* 27: 32–38. <https://doi.org/10.1016/j.tranpol.2012.12.001>.

Braun, V. and Clarke, V., 2023. Toward good practice in thematic analysis: Avoiding common problems and being a knowing researcher. *International journal of transgender health*, 24(1), pp.1-6.

Cape Chamber of Commerce and Industry, (2017). Ports Regulator of South Africa. Tariff Application 2018 – 2019 Comments. [Online] Available at: <https://portsregulator.org/tariff-application-2018-2019-comments/> (Accessed on 26 November 2024).

Cape Chamber of Commerce and Industry, (2019). Ports Regulator of South Africa: *National Ports Authority Tariff Application 2020/21 – 2022/23*. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2020-21-2022-23/> (Accessed on 26 November 2024).

Cape Chamber of Commerce and Industry, (2021). Port Regulator of South Africa. National Ports Authority Tariff Application 2022/23 – 2024/25. [Online] Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> [Accessed on 06 November 2024].

Castleberry, A., and Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning*, 10(6), 807–815. <https://doi.org/10.1016/j.cptl.2018.03.019>.

Cement and Concrete SA, (2021). Port Regulator of South Africa. National Ports Authority Tariff Application 2022/23 – 2024/25. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed 06 November 2024).

Chang, Y. T., S. H. Shin, and P. Lee. (2014). Economic impact of port sectors on south African economy: An input–output analysis. *Transport Policy* 35: 333–340. <https://doi.org/10.1016/j.tranpol.2014.04.006>.

Chasomeris, M. and Gumede, S., (2022). Regulation, governance and infrastructure pricing in South Africa's ports sector. In *Regulation and Finance in the Port Industry: Lessons from Worldwide Experiences* (pp. 53-67). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-030-83985-7\\_4](https://doi.org/10.1007/978-3-030-83985-7_4)

Chasomeris, M., (2011), June. Port Pricing in South Africa. In *European Conference on Shipping Intermodalism & Ports* (pp. 22-24).

- Chasomeris, M.G., (2015). Port infrastructure pricing: A critique of the revenue required methodology. *International journal of transport economics: Rivista internazionale di economia dei trasporti*: XLII, 2, 2015, pp.153-170.
- Chisoro, S., das Nair, R., Muzyamba, C. and Nontenja, N., (2024). A review of economic regulation in the South African transport sector.
- Clark, X., D. Dollar, and A. Micco. (2004). Port efficiency, maritime transport costs, and bilateral trade. *Journal of Development Economics* 75: 417–50.
- Clarke, V. and Braun, V., (2017). Thematic analysis. *The journal of positive psychology*, 12(3), pp.297-298.
- CMA CGM, (2019). Ports Regulator of South Africa: *National Ports Authority Tariff Application 2020/21 – 2022/23*. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2020-21-2022-23/> (Accessed on 26 November 2024).
- Cook, C.T. (2010), “Funding Port-Related infrastructure and development: the current debate and proposed reform”, *Fordham Urb. LJ*, Vol. 38, p. 1523.
- Creamer. T., (2016). Durban Haboour Dig-Out Project. (Online) Available at: <https://www.rasmussenproperties.co.za/news/durban-harbour-dig-out-port/>. (Accessed on 01 August 2024).
- Creswell, J. (2013). *A concise introduction to mixed methods research*: Sage Publications.
- Creswell, J. and Creswell, J., 2018. *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*. 5th ed. Los Angeles: Sage.
- Crew, M.A. and Parker, D. eds., 2006. *International handbook on economic regulation*. Edward Elgar Publishing.
- Crowley, B.P., and Delfico, J.F., (1996). *Content Analysis: A Methodology for Structuring and Analyzing Written Material*. Program Evaluation and Methodology Division. United States General Accounting Office. September.
- Decker, C., 2023. *Modern economic regulation: An introduction to theory and practice*. Cambridge University Press.
- Deng, P., S. Lu, and H. Xiao. (2013). Evaluation of the relevance measure between ports and regional economy using structural equation modeling. *Transport Policy* 27: 123–33.
- Dissertation Documents. 2023. *Dissertation Documents – 20230828*. Learn2024: University of Kwa-Zulu-Natal, Graduate School of Business and Leadership. 2024|GSOB8D3|W1/2: *Dissertation submission Guide* (ukzn.ac.za) (Accessed 23 January 2025).

Department of Trade, Industry, and Competition, (2020). Ports Regulator of South Africa: National Ports Authority Tariff Application 2021/22 – 2023/24. Stakeholders' submissions and comments in response to the NPA Tariff Application. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2021-22-2023-24/> (Accessed on 15 November 2024).

Department of Transport, (2024). (Online) Available at: [https://www.transport.gov.za/?page\\_id=18](https://www.transport.gov.za/?page_id=18) (Accessed 06 January 2025).

Divecha, C.A., Tullu, M.S. and Karande, S., 2023. Utilizing tables, figures, charts and graphs to enhance the readability of a research paper. *Journal of Postgraduate Medicine*, 69(3), pp.125-131. DOI: 10.4103/jpgm.jpgm\_387\_23

Dyer, J., (2014). The consequences of Durban's proposed port development. Presentation at the University of KwaZulu-Natal's Centre for Civil Society, Durban.

Ebrahim, N., (2023). Chaos' at Durban port with an estimated 71 000 containers stuck at sea. (Online) Available at: <https://www.news24.com/fin24/economy/chaos-at-durban-port-with-an-estimated-71-000-containers-stuck-at-sea-20231120>. (Accessed on 30 August 2024).

Eastern Cape Maritime Chamber, (2021). Port Regulator of South Africa. National Ports Authority Tariff Application 2022/23 – 2024/25. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed 06 November 2024).

Ebrahim, N., (2024). Filipino port giant's takeover at key Durban terminal now expected mid-year. (Online) Available at: <https://www.news24.com/fin24/economy/filipino-port-giants-takeover-at-key-durban-terminal-now-expected-mid-year-20240325> (Accessed on 30 August 2024).

Erakis, (2020). Ports Regulator of South Africa: National Ports Authority Tariff Application 2021/22 – 2023/24. Stakeholders' submissions and comments in response to the NPA Tariff Application. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2021-22-2023-24/> (Accessed on 15 November 2024).

Fakir, M. and Chasomeris, M.G., (2022). 'Ports regulation in South Africa: An equitable tax rate approach', *Journal of Economic and Financial Sciences* 15(1), a736. <https://doi.org/10.4102/jef.v15i1.736>.

Farrell, S. (2014), "Attracting private finance into African ports", in Meersman, H., Van de Voorde, E., Vanellander, T. (Eds), *Port Infrastructure Finance*, Informa Law from Routledge, 181-209.

Ferrari, C., A. Tei and O. Merk (2015), "The Governance and Regulation of Ports: The Case of Italy", *International Transport Forum Discussion Papers*, No. 2015/01, OECD Publishing, Paris, <https://doi.org/10.1787/5jrw1khtxts1-en>.

FPT Group Pty Ltd, (2018). Ports Regulator of South Africa. *National Ports Authority Tariff Application 2019/20*. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2019-20/> (Accessed on 05 November 2024).

Fraser, D., Mpikheleli, T. and Notteboom, T., (2020). A valuation approach of port funding strategies with application to a container terminal concession in Sub-Saharan Africa. *Maritime Business Review*, 6(2), pp.147-172.

Fraser, D. and Notteboom, T., (2016). Port development in Sub-Saharan Africa: Competitive forces, port reform, and investment challenges. *Dynamic Shipping and Port Development in the Globalized Economy: Volume 2: Emerging Trends in Ports*, pp.53-78.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-606.

Government Communications, (2024). Media Statement. (Online) Available at: <https://www.gcis.gov.za/newsroom/media-releases/media-statement-operationalisation-government-national-unity-minister> (Accessed 13 January 2024).

Grater, S. and Chasomeris, M.G., (2022). Analysing the impact of COVID-19 trade disruptions on port authority pricing and container shipping in South Africa. *Journal of Transport and Supply Chain Management*, 16, p.772.

Grimsey, D. and Lewis, M., (2007). *Public-private partnerships: The worldwide revolution in infrastructure provision and project finance*. Edward Elgar Publishing.

Gumede, S. and Chasomeris, M., (2015), 'Maritime port pricing and governance: Trends and stakeholder comments', *Journal of Economic and Financial Sciences* 8(1), 47–62. <https://doi.org/10.4102/jef.v8i1.83>.

Gumede, S. & Chasomeris, M.G., (2017), 'A critique of South Africa's National Ports Authority's revenue required pricing methodology', *International Journal of Transport Economics* 44(4), 611–632. <https://doi.org/10.19272/201706704006>.

Gumede, S. & Chasomeris, M., (2018), 'Pricing strategy and tariff structure for a port authority: A case study of South Africa', *Maritime Policy & Management* 45(6), 756–769. <https://doi.org/10.1080/03088839.2018.1446103>.

Gumede, S.A., (2012). *Assessing stakeholders' perspectives on maritime port pricing in South Africa* (Doctoral dissertation).

Hancock, T. (2020). Lack of port development a concern. *Engineering News*. (Online) Available at: <https://www.engineeringnews.co.za/article/port-infrastructure-falters-on-unstable-leadership-2020-03-27>. [Accessed 30 September 2024].

Haralambides, H. (2002), "Competition, excess capacity and the pricing of port infrastructure", *International Journal of Maritime Economics*, Vol. 4 No. 4, pp. 323-347. <https://doi.org/10.1057/palgrave.ijme.9100053>.

Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany: SUNY Press.

Havenga, J., et al., (2016). International trade logistics costs in South Africa: Informing the port reform agenda. *Research in Transportation Business & Management*, 22, pp.263-275.

Havenga, J.H., et al., (2023). The macrologistics effect of a state-owned enterprise, Transnet, on the South African economy. *Journal of Transport and Supply Chain Management*, 17, pp.1-18.

Hattingh, C., (2023). South Africa's ports: a significant barrier to trade. (Online) Available at: <https://focusontransport.co.za/south-africas-ports-a-significant-barrier-to-trade/>. (Accessed 01 on August 2024).

Hoepfl, M. C. (1997). Choosing Qualitative Research: A Primer for Technology Education Researchers. *Journal of Technology Education*, 9(1) 47-63.

Hutson, T. (2023). Locations-of-the-South-African-commercial-portmap 700. (Online) Available at: <https://africaports.co.za/2023/07/09/africa-ports-ships-maritime-news-10-july-2023/locations-of-the-south-african-commercial-portmap-700/> (Accessed on 25 July 2024).

International Monetary Fund. (2024). Back to Basics Inflation. (Online) Available at: <https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Inflation#:~:text=What%2C%20then%2C%20is%20inflation%2C,of%20living%20in%20a%20country> Accessed (27 on November 2024).

International Trade Administration (2024). South Africa country commercial guide. (Online) Availableat: <https://www.trade.gov/country-commercial-guides/south-africa-ports-and-marine>. U.S Department of Commerce. (Accessed on 03 August 2024).

Iyer, K.C.; Nanyam, V.N. (2021). A grounded theory approach in the identification of enabling and inhibiting factors affecting the performance of container terminals. *Transportation in Developing Economies* [online]. vol. 7, no. 2, p. 24. (Accessed: 13 May 2024) Available at: <https://doi.org/10.1007/s40890-021-00133-4>

Iyoha, M. A. (2007). *Intermediate Macroeconomics*. Benin: Mindex Publishing.

Jacobs, S. (2023). South African miners lost R150 billion in exports last year. (Online) Available at: <https://dailyinvestor.com/business/11422/south-african-miners-lost-r150-billion-in-exports-last-year/> (Accessed on 27 July 2024).

James, A., et al., (2024). Navigating troubled waters: Unpacking South Africa's port challenges and charting a course for transformation. (Online) Available at: <https://www.clydeco.com/en/insights/2024/01/navigating-troubled-waters-unpacking-aouth->

[africa#:~:text=Backlogs%20outside%20the%20Port%20of,bad%20weather%20at%20the%20port.](#) (Accessed on 27 July 2024).

Jeevan, J., Ghaderi, H., Bandara, Y.M., Saharuddin, A.H. and Othman, M.R., (2015). The implications of the growth of port throughput on the port capacity: The case of Malaysian major container seaports. *International Journal of e-Navigation and Maritime Economy*, 3, pp.84-98.

Jeremiah, A., Atiku, S.O. and Villet, H.J., 2023. Leadership effectiveness and sustainability of State-Owned Enterprises. In *Leadership and Governance for Sustainability* (pp. 55-80). IGI Global.

Johnston, M.P., (2014). Secondary data analysis: A method of which the time has come. *Qualitative and quantitative methods in libraries*, 3(3), pp.619-626.

Kahyarara, G. (2020). Investment in Port Infrastructures across Africa Coastlines. (Online) Available at: <https://allafrica.com/stories/202008260455.html> (Accessed on 27 July 2024).

Kolb, S. M. (2012). Grounded theory and the constant comparative method: Valid research strategies for educators. *Journal of Emerging Trends in Educational Research and Policy Studies*, 3(1), 83-86.

Lam, J.S.L. and Yap, W.Y., (2019). A stakeholder perspective of port city sustainable development. *Sustainability*, 11(2), p.447.

Lee, T.C., Wu, C.H. and Lee, P.T.W., (2011). Impacts of the ECFA on seaborne trade volume and policy development for shipping and port industry in Taiwan. *Maritime Policy & Management*, 38(2), pp.169-189. <https://doi.org/10.1080/03088839.2011.556674>

Lee, T.-W. P. & Flynn, M., (2011). Charting A New Paradigm Of Container Hub Port Development Policy: The Asian Doctrine. *Transport Reviews: A Transnational Transdisciplinary Journal*, 31, 791-806.

Lee, P.T-FW. and Lam, J.S.L., (2017). A review of port devolution and governance models with compound eyes approach. *Transport Reviews*, 37(4), pp.507-520.

Leech, N.L. and Onwuegbuzie, A.J., (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School psychology quarterly*, 22(4), p.557.

Llyod List, (2021). One Hundred ports. (Online) Available at: <https://lloydslist.com/-/media/lloyds-list/images/top-100-ports-2021/top-100-ports-2021-digital-edition.pdf>. (Accessed on 27 July 2024).

Maree, J. (2024). Opinion: Private sector calls for overhaul of Durban Container Terminal Pier 2 plan. (Online) Available at: <https://www.freightnews.co.za/article/opinion-private-sector-calls-overhaul-durban-container-terminal-pier-2-plan> (Accessed 16 December 2024).

Marine Review Africa, (2024). Transnet assigned to the Department of Transport (Online) Available at: <https://maritimereview.co.za/Articles/ArtMID/397/ArticleID/424/Transnet-assigned-to-the-Department-of-Transport> (Accessed 30 January 2025).

Maritime Business Chamber, (2021). Port Regulator of South Africa. *National Ports Authority Tariff Application 2022/23 – 2024/25*. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed 06 November 2024).

Marshall, B., Cardon, P., Poddar, A. and Fontenot, R., (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. *Journal of computer information systems*, 54(1), pp.11-22.

Matekenya, W. and Nwadi, R., (2022). The impact of maritime transport financing on total trade in South Africa. *Journal of shipping and trade*, 7(1), p.5.

Matekenya, W. and Nwadi, R., (2022). The impact of maritime transport financing on total trade in South Africa. *Journal of shipping and trade*, 7(1), p.5.

Matuszak, P. and Kabaciński, B., (2021). Non-commercial goals and financial performance of state-owned enterprises—some evidence from the electricity sector in the EU countries. *Journal of Comparative Economics*, 49(4), pp.1068-1087.

Mayedwa, V.A., (2018). The role of the state-owned enterprises in the developmental state of South Africa: A case study of Transnet.

Mazhar, S.A., Anjum, R., Anwar, A.I. and Khan, A.A., (2021). Methods of data collection: A fundamental tool of research. *Journal of Integrated Community Health* (ISSN 2319-9113), 10(1), pp.6-10.

Meyiwa, A. and Chasomeris, M., (2016). Restructuring port governance in South Africa. *Journal of Economic and Financial Sciences*, 9(3), pp.854-873.

Meyiwa, A., and Chasomeris, M. (2020). South Africa's port doctrine: Dilemmas and the way forward', *Maritime Studies* 19 (2), 179–191. <https://doi.org/10.1007/s40152-020-00166-2>

Mpofu, S., (2010). Strategic leadership challenges in the management of projects in the parastatals. Unpublished doctoral dissertation), University of the Witwatersrand, Johannesburg, South Africa.

Mlambo, C., (2021). The impact of port performance on trade: The case of selected African states. *Economies*, 9(4), p.135.

Morisset, J, (2023). Waking South Africa's Economy Up Requires the Government and Businesses to Work Together. (Online) Available at: <https://blogs.worldbank.org/en/africacan/waking-south-africas-economy-requires-government-and-businesses-work> (Accessed on 01 August 2024).

Mthembu, S.E., and Chasomeris, M.G. (2023), 'An assessment of the capacity and the performance of marine services in South Africa's ports', *Journal of Transport and Supply Chain Management* 17(0), a879. <https://doi.org/10.4102/jtscm.v17i0.879>.

Mthembu, S.E., and Chasomeris, M. (2024). Revisiting marine services pricing in South Africa's ports. *WMU Journal of Maritime Affairs*, 23(1), pp.5-24. DOI <https://doi.org/10.1007/s13437-023-00320-7>

Mundy, M., and Penfold, A. (2008). Beyond the bottlenecks: ports in Sub-Saharan Africa. Background paper, 8. (Online) Available at: <https://www.eu-africa-infrastructure-tf.net/attachments/library/aicd-background-paper-8-ports-sect-summary-en.pdf> (Accessed on 25 July 2024).

Munthali, A., and Kaliba, C. (2024). The Utilization of Stakeholder Management Frameworks for the Successful Completion of Construction Projects in Zambia. *European Modern Studies Journal*, Volume Vol 8 No 4.

Musariri, C. (2017). China Harbour Engineering Company reshaping Walvis Bay port: A Chinese success story in Namibia. (Online) Available at: <https://www.namport.com.na/news/204/China-Harbour-Engineering-Company-reshaping-Walvis-Bay-port-A-Chinese-success-story-in-Namibia/> (Accessed on 25 July 2024).

Mwanaumo, E. M., and Mambwe, M. (2018). Effect of Management Strategies in Entrenching Organisational Safety Culture in the Electricity Industry of Zambia. *Journal of Construction Business Management (JCBM)*, 3(1), 27-37.

NAAMSA, (2017). Ports Regulator of South Africa. *Tariff Application 2018 – 2019 Comments*. (Online) Available at: <https://portsregulator.org/tariff-application-2018-2019-comments/> (Accessed on 26 November 2024).

NAAMSA, (2020). Ports Regulator of South Africa. *National Ports Authority Tariff Application 2021/22 – 2023/24*. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2021-22-2023-24/> (Accessed 10 November 2024).

NAAMSA, (2021). Port Regulator of South Africa. *National Ports Authority Tariff Application 2022/23 – 2024/25*. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed 06 November 2024).

Naeem, M., Ozuem, W., Howell, K., and Ranfagni, S. (2023). A step-by-step process of thematic analysis to develop a conceptual model in qualitative research. *International Journal of Qualitative Methods*, 22, p.16094069231205789.

Narayanan, V.K., Douglas, F.L., Guernsey, B., and Charnes, J. (2002). How top management steers fast cycle teams to success. *Strategic leadership*, 30(3), 19-27.

National Ports Act 12 of 2005. c.5. Government Gazette. Cape Town. Available at: [https://www.gov.za/sites/default/files/gcis\\_document/201409/a12-051.pdf](https://www.gov.za/sites/default/files/gcis_document/201409/a12-051.pdf). (Accessed 01 June 2024).

Ndlozi, M.T. (2016). Port investment risk: Qualitative review of South African port investment valuation framework.

NPCC, (2017). Ports Regulator of South Africa. Tariff Application 2018 – 2019 Comments. (Online) Available at: <https://portsregulator.org/tariff-application-2018-2019-comments/> (Accessed on 26 November 2024).

Ntuli, D. (2017). Comprehensive maritime transport policy for South Africa. Department of transport.

Oblak, R., Bistričić, A. and Jugović, A. (2013). Public-private partnership-Management model of Croatian seaports. *Management: Journal of Contemporary Management Issues*, 18(1), pp.79-102.

Oluwatayo, J. A. (2012). Validity and reliability issues in educational research. *Journal of Educational and Social Research*, 2(2), 391-400.

Oner, C. 2019. Inflation: Prices on the rise. *Back to Basics: Economic Concepts Explained*, p.30.

Operation Phakisa (2015) Unlocking the economic potential of South Africa's Oceans. Department of Agriculture, Forestry & Fisheries. Annual report.

Osho Cement (Pty) Ltd's. (2017). Ports Regulator of South Africa. Tariff Application 2018 – 2019 Comments. (Online) Available at: <https://portsregulator.org/tariff-application-2018-2019-comments/> (Accessed on 26 November 2024).

Pandey, S.C. and Patnaik, S., (2014). Establishing reliability and validity in qualitative inquiry: A critical examination. *Jharkhand Journal of Development and Management Studies*, 12(1), pp.5743-5753.

PARI. (2018). *Transnet Inquiry Reference BOOK*. (Online) Available at: <https://pari.org.za/wp-content/uploads/2018/08/Transnet-Inquiry-Report-V1-Final.pdf>. (Accessed on 27 July 2024).

Park, N.K., and Suh, S.C. (2019). Tendency toward mega containerships and the constraints of container terminals. *Journal of Marine Science and Engineering*, 7(5), p.131.

Payne, H., (2020). Private (Utility) Regulators. *Environmental Law*, 50(4), pp.999-1053.

Perin, J.S., Partyka, R.B., Lana, J., and Marcon, R. (2020). Determinants Of Performance On Container Terminals/Determinantes Do Desempenho De Terminais De Container/Determinantes Del Desempeno De Terminales De Contenedores. *Revista Eletronica de Estrategia e Negocios*, 13(S3), pp.2-24.

Ports Regulator of South Africa (2018), *Methodology for the Valuation of the National Ports Authority's Regulatory Asset Base*". (Online) Available at: <http://www.portsregulator.org>. (Accessed on 27 July 2024).

Port Regulator of South Africa, (2020). National Ports Authority Tariff Application 2021/22 – 2023/24. (Online) Available at: <https://portsregulator.org/national-ports-authority-tariff-application-2021-22-2023-24/> (Accessed on 26 November 2024).

Ports Regulator of South Africa, (2021). National Ports Authority Tariff Application 2022/23 – 2024/25. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed on 27 July 2024).

Ports Regulator of South Africa, (2024). Tariff Application FY 2025/26 TO 2027/28. (Online) Available at: <https://portsregulator.org/npa-tariff-applications/> (Accessed on 06 December 2024).

Psaraftis, H.N., and Pallis, A.A. (2012). Concession of the Piraeus container terminal: turbulent times and the quest for competitiveness. *Maritime Policy & Management*, 39(1), pp.27-43. Doi: <http://dx.doi.org/10.1080/03088839.2011.642316>

Rezouki, S.E., and Hassan, J.K.A. (2019). An evaluation of barriers obstructing the applicability of Public Private Partnership (PPP) in infrastructure development. *Civil Engineering Journal*, 5(12), pp.2643-2664.

SAAFF, (2020). Ports Regulator of South Africa: National Ports Authority Tariff Application 2021/22 – 2023/24. Stakeholders' submissions and comments in response to the NPA Tariff Application. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2021-22-2023-24/> (Accessed on 15 November 2024).

SAAFF, (2021). Ports Regulator of South Africa. *National Ports Authority Tariff Application 2022/23 – 2024/25*. Responses to this consultation. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed on 26 November 2024).

SAASOA. About Us [Online] Available at: <http://www.saaso.com/index.php/about-us> (Accessed on 31 January 2025).

SAASOA, (2018). Ports Regulator of South Africa. *National Ports Authority Tariff Application 2019/20*. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2019-20/> (Accessed on 05 November 2024).

SAASOA, (2020). Ports Regulator of South Africa. *National Ports Authority Tariff Application 2021/22 – 2023/24*. [Online] Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2019-20/> (Accessed on 15 November 2024).

Saggia, G. (2017). The Future of African Ports. Available online: <https://www.maritimeexecutive.com/editorials/the-future-of-african-ports> (Accessed on 27 July 2024).

SAMSA, (2017). Ports Regulator of South Africa. *Tariff Application 2018 – 2019 Comments*. (Online) Available at: <https://portsregulator.org/tariff-application-2018-2019-comments/> (Accessed on 26 November 2024).

SAOGA, (2020). Ports Regulator of South Africa. National Ports Authority Tariff Application 2021/22 – 2023/24. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2019-20/> (Accessed on 15 November 2024).

Sánchez, R. J., J. Hoffmann, A. Micco, G. V. Pizzolitto, M. Sgut, and Wilmsmeier, G. (2003). Port efficiency and international trade: Port efficiency as a determinant of maritime transport costs. *Maritime Economics & Logistics* 5: 199–218.

SASOL, (2018). Ports Regulator of South Africa. National Ports Authority Tariff Application 2019/20. Stakeholders' submissions and comments in response to the NPA Tariff Application and Port Tariff Incentive Programme applications. (Online) Available at: <https://portsregulator.org.gebzinvest.co.za/national-ports-authority-tariff-application-2019-20/> (Accessed 26 November 2024).

Saunders, M., Lewis, P., and Thornhill, A. (2016). *Research methods for business students*. Harlow: Pearson Education.

Semenya, D., and Ogujiuba, K. (2024). Evaluating the Effectiveness of Investment in Boosting South Africa's Economic Growth: A Comparative Analysis across Different Administrations. *Administrative Sciences*, 14(8), p.173.

Shan, J., M. Yu, and C. Lee. (2014). An empirical investigation of the seaport's economic impact: Evidence from major ports in China. *Transportation Research Part E* 69: 41–53.

Statista. (2024). African countries with the highest Gross Domestic Product (GDP) in 2024 (Online). Available at: <https://www.statista.com/statistics/1120999/gdp-of-african-countries-by-country/>. Accessed 27 January 2025.

Steyn, L. (2023). Durban terminal: Filipino ports giant raring to go, but Transnet leadership void could cause delays. (Online) Available at: <https://www.news24.com/fin24/economy/durban-terminal-filipino-ports-giant-raring-to-go-but-transnet-leadership-void-could-cause-delays-20231014> (Accessed on 21 July 2024).

Steyn, L. (2024). Durban business chamber calls for axing of Transnet CEO and execs. (Online) Available at: <https://www.news24.com/fin24/companies/durban-business-chamber-calls-for-axing-of-transnet-ceo-and-execs-20230915> (Accessed on 16 January 2025).

Stupnikova, E., and Sukhadolets, T. (2019). Construction sector role in gross fixed capital formation: Empirical data from Russia. *Economies*, 7(2), p.42.

Suárez-Alemán, A., Astesiano, G. and de León, O.P. (2020). *Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean*.

Sürücü, L., and Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), pp.2694-2726.

Szarzec, K., Dombi, Á., and Matuszak, P. (2021). State-owned enterprises and economic growth: Evidence from the post-Lehman period. *Economic Modelling*, 99, p.105490.

Thomas, D.W., and Thomas, M.D. (2022). George stigler's theory of economic regulation at 50-introduction to a special issue. *Public Choice*, 193(1), pp.1-5.

Tijan, E., Jović, M., Karanikić, P. (2019). Economic and Ecological Aspects of Electronic Transportation Management Systems in Seaports. In Proceedings of the Maritime and Port Logistics Bar Conference, Bar, Montenegro (Accessed on 27 July 2024).

Thusi, X., and Mlambo, V.H. (2023). “The Effects of Africa's Infrastructure Crisis and its Root Causes” International Journal of Environmental, Sustainability, and Social Science, 4(4), 1055-1067.

Tshiakambila, E.K., (2016). An empirical analysis of the relationship between food inflation and passenger vehicle purchases in South Africa (Doctoral dissertation, University of South Africa).

Transnet National Port Authority. (2019). Annual Report. (Online) Available at: <https://www.transnet.net/InvestorRelations/AR2019/Transnet%20National%20Ports%20Authority.pdf> (Accessed on 15 July 2024).

Transnet National Port Authority. (2022). PORT DEVELOPMENT FRAMEWORK PLANS 2022 Update (Online) Available at: <https://www.transnetnationalportsauthority.net/Infrastructure%20and%20Port%20Planning/Documents/Port%20Development%20Framework%20Plans%20Update%202022.pdf> (Accessed on 15 July 2024).

Transnet National Port Authority. (2023). Annual Report. (Online) Available at: <https://www.transnet.net/InvestorRelations/AR2023/Transnet%20National%20Ports%20Authority%20Report.pdf>. (Accessed on 27 July 2024).

Transnet National Port Authority. (2023b). TNPA requests proposals for berth deepening and lengthening at the Durban container terminal (Online) Available at: <https://www.transnetnationalportsauthority.net/Corporate%20Affairs/Press%20Releases/MEDIA%20STATEMENT%20TNPA%20requests%20proposal%20for%20berth%20deepening%20lengthening%20at%20the%20DBN%20Container%20Terminal.pdf> (Accessed on 27 July 2024).

Transnet National Port Authority. (2023c). Port Statistics (Online) Available at: <https://www.transnetnationalportsauthority.net/Commercial%20and%20Marketing/Pages/Port-Statistics.aspx>. (Accessed on 01 August 2024).

Transnet National Port Authority. (2023d). Operation Phakisa. (Online) Available at: [https://www.transnetnationalportsauthority.net/Infrastructural%20Development/Documents/Operation%20Phakisa%20Brochure\\_LR.pdf](https://www.transnetnationalportsauthority.net/Infrastructural%20Development/Documents/Operation%20Phakisa%20Brochure_LR.pdf) (Accessed on 27 July 2024).

Transnet National Port Authority (2024). TNPA appoints transaction advisor to validate island view strategy. (Online) Available at: <https://www.transnetnationalportsauthority.net/Corporate%20Affairs/Pages/Press-Releases.aspx> (Accessed on 17 November 2024).

TradeMark East Africa. 2019. Trade Facilitation Agreement Facility. (Online) Available online: <https://tfafacility.org/Trademark-East-Africa>. (Accessed on 27 July 2024).

Trading Economics, (2024). South Africa Consumer Price Index (CPI). (Online) Available at: <https://tradingeconomics.com/south-africa/inflation-cpi>. (Accessed 26 November 2024).

Transnet, (2013). Your Guide to MDS. (Online) Available at: [https://www.transnet.net/Media/Documents/MDS%20BOOKLET\\_2013.pdf](https://www.transnet.net/Media/Documents/MDS%20BOOKLET_2013.pdf) (Accessed 09 September 2024).

Transnet. (2017). Transnet Long Term Planning Framework. (Online) Available at: <https://www.transnet.net/BusinessWithUs/pages/ltpf.aspx> (Accessed on 16 August 2024).

UNCTAD. (2019). Economic Development in Africa Report 2019: Made in Africa: Rules of Origin for Enhanced Intra-African Trade. (Online) Available at: <https://unctad.org/press-material/facts-figures-0> (Accessed on 27 July 2024).

UNCTAD. (2020). UNCTAD's Review of Maritime Transport 2020: Highlights and Figures on Africa. (Online) Available at: <https://unctad.org/press-material/unctads-review-maritime-transport-2020-highlights-and-figures-africa> (Accessed on 27 July 2024).

Van Den Berg, R., De Langen, P.W., and Van Zuijlen, P.C. (2017). Revisiting port pricing; a proposal for seven port pricing principles. *WMU Journal of Maritime Affairs*, 16, pp.421-438.

Venter, L., (2024). Ports Regulator halts tariff hike amid economic strain. (Online) Available at: <https://www.freightnews.co.za/article/ports-regulator-halts-tariff-hike-amid-economic-strain>. (Accessed on 24 July 2024).

Veitch, C., (2017). South African Maritime transport and Marine manufacturing sector. *African Business Information*. (Online) Available at: <https://www.whoownswhom.co.za/store/info/4509?segment=South+Africa+Maritime+Transport+and+Marine+Manufacturing+Sector> (Accessed on 25 July 2024).

VUKA Marine, (2021). Ports Regulator of South Africa. National Ports Authority Tariff Application 2022/23 – 2024/25. Responses to this consultation. (Online) Available at: <https://portsregulator.org/tariffs-2022-23-tnpa-tariff-application/> (Accessed 26 November 2024). Walker, T., (2018). Securing a sustainable oceans economy: South Africa's approach. *ISS Southern Africa Report*, 2018(14), pp.1-24.

Wilmsmeier, G., and J. Hoffmann. (2008). Liner shipping connectivity and port infrastructure as determinants of freight rates in the Caribbean. *Maritime Economics & Logistics* 10: 130–51.

World Bank, (2018). Port Development and Competition in East and Southern Africa: Prospective and challenges. Available at:

<https://documents1.worldbank.org/curated/en/927461561663095167/pdf/Main-Report.pdf>(Accessed on 05 December 2024).

World Bank, (2024). The Container Port Performance Index 2023 : A Comparable Assessment of Performance based on Vessel Time in Port (English). Washington, D.C. : World Bank Group. (Online) Available at: <http://documents.worldbank.org/curated/en/099060324114539683/P17583313892300871be641a5ea7b90e0e6> (Accessed on 05 December 2025).

World Bank, (2024). What Explains Global Inflation. (Online) Available at: <https://www.worldbank.org/en/research/brief/global-inflation>. (Accessed on 25 November 2024).

Yanto, E. S. (2023). The what and how of essential thematic analysis. The Qualitative Report, 28(11), 3120-3131. <https://doi.org/10.46743/2160-3715/2023.6744>

Yousef, A.N.A. (2024). The impact of the development of maritime logistics on the Aqaba Port's trade movement and the sustainability. Strategic Financial Review, 1(2), 108-161. <https://doi.org/10.59762/sfr1220240710133308>

## 7. APPENDICES


### Appendix A: Informed Consent Form

#### UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

#### APPLICATION FOR ETHICS APPROVAL For research with human participants

#### INFORMED CONSENT RESOURCE

Information Sheet and Consent to Participate in Research

Researcher: Nokulunga N. Nzimande      Contact Details 

Email address [223099817@stu.ukzn.ac.za](mailto:223099817@stu.ukzn.ac.za)

Supervisor: Professor Mihalís Chasomeris      Contact Details:

Email address: [chasomerism1@ukzn.ac.za](mailto:chasomerism1@ukzn.ac.za)

Date: 05 December 2024

Dear Colleague

My name is Nokulunga Nzimande (223099817). I am an MBA student studying at the University of KwaZulu-Natal. You are being invited to participate in a study that involves research on Capital expenditure trends at South African Ports. The title of my research is: An analysis of capital expenditure for South African ports: trends and stakeholders' comments. The aim of this research is to analyse trends in capital expenditure for South African ports and evaluate stakeholder perspectives on these investments. The study seeks to identify patterns in capital expenditure over time, assess the effectiveness and efficiency of these expenditures in enhancing port infrastructure and services, and explore the impact of stakeholder feedback on future capital planning and investment strategies”.

The study will not involve risks and discomforts and the study will provide no direct benefits to participants.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSSREC/00007525/2024).

In the event of any problems or concerns/questions, you may contact the researcher at [REDACTED]; email 223099817@stu.ukzn.ac.za alternatively, the supervisor as per the contact details mentioned above or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

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Tel: 27 31 2604557- Fax: 27 31 2604609

Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)

There is no compulsion that you respond to any questions during this interview; participation is wholly optional. You are free to choose not to participate or to withdraw from the project at any time without any negative consequences. There will be no monetary compensation for participating in this study. Your confidentiality and anonymity will be protected by myself and the Supervisor through strict data access controls, including the use of an encrypted database and password-protected files. The information gathered from this interview will only be used for the study. To protect your privacy, personal identifiers such as names, addresses, and contact information will not be published. This precautionary measure will ensure that the collected data cannot be used to identify specific individuals.

.....

## CONSENT DECLARATION

I..... have been informed about the study entitled An analysis of capital expenditure for South African ports: trends and stakeholders' comments by Nokulunga Nzimande. I understand the purpose and procedures of the study.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to. If I have any further questions/concerns or queries related to the study, I understand that I may contact the researcher at [REDACTED] or [223099817@stu.ukzn.ac.za](mailto:223099817@stu.ukzn.ac.za). If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

### HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: [HSSREC@ukzn.ac.za](mailto:HSSREC@ukzn.ac.za)

Additional consent, I hereby provide consent to:

Audio-record my interview YES / NO

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**Signature of Participant**

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**Date**

## **Appendix B: Interview Schedule**

### **An analysis of capital expenditure for South African ports: trends and stakeholders' comments**

#### **Interview Questions**

There is no compulsion that you respond to any questions during this interview; participation is wholly optional. You are free to choose not to participate or to withdraw from the project at any time without any negative consequences. There will be no monetary compensation for participating in this study. Your confidentiality and anonymity will be protected by myself and the Supervisor through strict data access controls, including the use of an encrypted database and password-protected files. The information gathered from this interview will only be used for study.

1. Do you believe the National Ports Authority (NPA) allocates adequate funds for its capital projects?
2. What factors/causes do you believe contribute to the underspending on CAPEX at the NPA?
3. What are the consequences of underspending on CAPEX at the NPA?
4. Is the NPA generating enough profit to adequately finance its capital projects?
5. Would you say that the tariff approved by the Ports Regulator of South Africa (PRSA) adequately covers the costs of capital projects?
6. Do you believe that capital projects would see improvement if the NPA operated as a subsidiary (rather than a division) of the Transnet group, and how would that affect CAPEX?
7. What factors contribute to the differences between the tariff allowed/approved by the Ports Regulator of South Africa and the actual CAPEX spent by the National Ports Regulator?
8. How does the NPA respond to concerns or suggestions raised by stakeholders regarding capital expenditure projects?
9. What measures and incentives can be put in place to accelerate spending on Capital projects?

## Appendix C: Ethical Clearance



25 October 2024

**Nokulunga Nongcebo Nzimande (223099817)**  
Grad School of Bus & Leadership  
Westville Campus

Dear NN Nzimande,

**Protocol reference number:** HSSREC/00007525/2024

**Project title:** An analysis of capital expenditure for South African ports: trends and stakeholders' comments

**Degree:** Masters

### Approval Notification Expedited Application

This letter serves to notify you that your application received on 19 August 2024 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

**Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.**

**PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.**

**Incidents of adverse events and serious adverse events (AEs and SAEs) should be reported in writing to HSSREC, the study sponsors, and any regulatory authority (where appropriate), within 7 working days of the occurrence for local sites and 14 days for all other South African sites.**

This approval is valid until 25 October 2025.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-040414-040).

Yours sincerely,



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**Professor Dipane Hlalele (Chair)**  
/nng

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#### Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4557/3587 Email: [hssrec@ukzn.ac.za](mailto:hssrec@ukzn.ac.za) Website: <http://research.ukzn.ac.za/Research-Ethics>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

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