Influence of the Ideology of the Developmental State on the South African Regulatory State: A Case of Network Industries

Robert D. Nkuna (Student No: 9305682M)

LINK Centre, University of the Witwatersrand

A Thesis Submitted to the Faculty of Humanities in Fulfilment of the Requirements for the Degree of

Doctor of Philosophy in Interdisciplinary Digital Knowledge Economy Studies

Supervisor: Luci Abrahams

July 2022

Declaration

I, Robert D. Nkuna, declare that this thesis is my original work and all the work sourced from others has been adequately referenced. The thesis is submitted in partial fulfilment of the requirements of the degree of Doctor of Philosophy in Interdisciplinary Digital Knowledge Studies at the University of the Witwatersrand. The thesis has not been submitted to any other academic institution.

Signed: 14-07-2022

Acknowledgements

My thanks to those who participated in the study, without whom I would not have reached this stage. Thanks also to my previous personal assistants at the then Department of Telecommunications and Postal Services (DTPS), Tebogo Mathebula and Mpho Matiwane, for supporting and encouraging me not to give up whenever the project was becoming too much of an uphill struggle. My friends Ernest Khosa, Hlengani Moyane and Siyabonga Mahlangu would always check up on me, insisting that giving up was not an option. Special thanks go to my supervisor Luci Abrahams for continuous guidance and for believing that I was capable of finishing my thesis even when I took a demanding job as Director-General of the DTPS. Your insight and interventions were always on point, allowing me to move to a higher trajectory after each engagement.

Lastly, I would like to thank my entire family, especially my supporting father, Sikheto Freddy Nkuna, who unfortunately passed on without witnessing the end of this momentous journey.

Keywords: price regulation, regulatory governance, regulatory state, developmental state, regulatory policy, network industries, future-oriented regulation, adaptive regulation, interdisciplinary studies, institutional theories, comparative case study

Abbreviations

ANC	African National Congress
ACSA	Airport Company South Africa
ASGISA	Accelerated and Shared Growth of South Africa
COSATU	Congress of South African Trade Unions
CPI	Consumer Price Index
DCDT	Department of Communications and Digital Technologies
DFID	Department for International Development
DMRE	Department of Mineral Resources and Energy
DPE	Department of Public Enterprises
ERA	Electricity Regulation Act
GEAR	Growth, Employment and Redistribution Strategy
ICASA	Independent Communications Authority of South Africa
ICT	Information and Communications Technology
IRGC	International Risk Governance Council
IRAs	Independent Regulatory Authorities
LRIC	Long Run Incremental Cost
MYPD	Multi-Year Price Determinations
NECSA	Nuclear Energy Cooperation of South Africa
NERA	National Electricity Regulator Act
NERSA	National Electricity Regulator of South Africa
NDP	National Development Plan
NPC	National Planning Commission
OECD	Organisation for Economic Cooperation and Development
PAJA	Promotion of Administrative Justice Act
REDS	Regional Electricity Distribution Services
RDP	Reconstruction and Development Programme
RIA	Regulatory Impact Analysis
RR	Rate of Return
SACP	South African Communist Party
WTO	World Trade Organisation

Table of Contents

Acknowledgements 3

Abbreviations **5**

Chapter 1 Introduction and Background **14**

1.1 Background to the Policy Problem **14**

1.2 Research Problem Statement **18**

1.3 Purpose Statement and Scope of the Study **18**

1.4 Research Questions **19**

1.5 Approaches to Efficiency in Network Industries and the Benefits of Comparative Case Studies **20**

1.5.1 Regulation in Practice: An Overview of the Role of the IRAs in South Africa 21

1.6.2 Benefits of a Comparative Analysis 32

1.6 Significance and Originality of the Study **35**

1.7 The Rise of the South African Regulatory State **36**

1.7.1 The Institutional Dimension of the Regulatory State 36

1.7.2 Overview of the Rise of the Regulatory State in Developed Countries 41

1.7.3 The Regulatory State in the Developing World 43

1.7.4 The South African Experience 46

1.8 Delimitations of the Study **55**

1.9 Summary of the Chapter **56**

1.10 Outline of the Chapters **57**

Chapter 2 Conceptual Theoretical Framework 59

2.1 Economic Characteristics of the Network Industries and Rationale for Regulation **59**

2.2 Price Regulation versus Economic Regulation **64**

2.3 The Efficiency Challenge in Network Industries Regulation **67**

2.4 Towards a Perspective on the Influence of the Political Ideology of the Developmental State **68**

2.4.1 Regulation Beyond Capture and the Agency Problem 68
2.4.2 The Developmental State Dimension 71
2.5 Improving Efficiency in Regulation 77
2.5.1 Credible Commitment and Regulatory Policy 77
2.5.2 Overcoming Rigidity in Political Institutions 80
2.5.3 Regulatory Impact Analysis and its Limitations 81
2.5.4 Evidence and Regulation in the age of Big Data Analytics 84
2.6 The Role of the Regulatory Agencies 87
2.7 Relevance of Theories of Economic Regulation 93
2.7.1 The Need for Theory 93
2.7.2 Public Interest Theory: Realistic or Wishful Thinking? 96
2.7.3 Positive Theories 98
2.7.4 The Political Economy Theory and its Limitations 101
2.7.5 A Multi-Theory Approach to Regulation: A Neo-institutional Perspective 104
2.8 Summary of the Chapter 113
3.1 Ontological and Epistemological Positions 115
3.1.1 Ontology 116
3.1.2 Epistemology 117
3.2 Qualitative Comparative Case Study Approach 117
3.3 Data Collection 123
3.3.1 Document reviews 123
3.3.2 Court Documents 124
3.3.3. Semi-structured Interviews 125
3.3.4 Sampling 126
3.3.5 Invitations to the Participants 128
3.3.6 Fieldwork and Handling of Interviews 128
3.3.7 Recordings 129

3.3.8 Anonymity 129

3.4 Data Analysis: Systems Thinking Approach 130

3.5 Coding and Pattern Matching 134

3.6 Ethical Considerations 137

3.7 Summary of the Chapter 138

Chapter 4: Regulating an Inefficient Monopoly: A Case of the Electricity Industry in South Africa 139

4.1 The Influence of the Political Ideology on the Institutions of the Regulatory State 139

4.1.1 The Institutional Design of the Electricity Regulatory State 139

4.1.2 The Making of the Institutions of the Regulatory State 142

4.1.3 The Challenge of Institutional Inertia 147

4.2 The Influence of the Institutions of the Regulatory State on Efficiency in Regulation 148

4.2.1 Efficiency Challenge and the Institutional Dilemma 149

4.2.3 Implications for and the Role of NERSA 166

4.3 Approaches to Improve Efficiency in Network Industries 169

4.4 Summary of the Chapter 176

Chapter 5: Policy – Regulatory Tensions in the Midst of Spectrum Scarcity in the Telecommunications Industry 178

5.1 The Influence of the Political Ideology of the Developmental State on the Institutions of the Regulatory State 178

5.1.1 Institutional Design of the Regulatory State 178

5.1.2 The Making of the Institutions of the Regulatory State 181

5.1.3 The Challenge of Institutional Inertia 188

5.2 The Influence of the Institutions of the Regulatory State on Efficiency Regulation 188

5.2.1 Efficiency Challenge and Institutional Dilemma 188

5.2.2. Spectrum Refarming 190

5.2.3 Implications for and the Role of ICASA. 195

5.3 Approaches to Improve Efficiency in Regulation 201

5.4 Summary of the Chapter 206

Chapter 6: Regulating a 'Favoured Airport Natural Monopoly' in a Competitive Airline Industry 207

6. 1 The Influence of the political ideology of the Development State on the Institutions of the Regulatory State 207

6.1.1 Institutional Design of the Airport Industry Regulatory State 207

6.1.2 The Making of the Regulatory Institutions 209

6.1.3 The Challenge of Institutional Inertia 212

6.2 The Influence of the Institutions of the Regulatory State on Efficiency in Regulation 215

6.2.1 Efficiency Challenge and the Institutional Dilemma 215

6.2.2 Establishment and construction of the King Shaka International Airport 222

6.2.3 Implications for and the Role of the Regulating Committee 224

6.3 Approaches to Improve Efficiency in Network Industries 229

6.4 Summary of the Chapter 234

Chapter 7: Discussion of the Findings 236

7.1 The Influence of the Political Ideology of the Developmental State on the Regulatory State 237

7.1.1 The influence of the developmental state in shaping the institutions of the regulatory state 239

7.1.2 The influence of the institutions of the regulatory state on the developmental state 243

7.2 The Influence the Institutions of the Regulatory State on Efficiency Regulation ... 246

7.3 Approaches to Improve Efficiency in Regulation 249

7.4 Summary of the Chapter 256

Chapter 8: Conclusions and Recommendations 257

8.1 Interplay between the regulatory state and the developmental state and its influence on performance (efficiency) 259

8.2 Recommendations on Aligning the Regulatory State and the Developmental State to Improve Efficiency 260

8.2.3 Dynamic Regulation 264

8.2.4 Evidence Based Approach to Regulation 264

8.3 Contributions to Literature and Theory: Towards an Interdisciplinary Theory of Price Regulation 265

8.4 Limitations of the Study 267

8.5 Areas for Future Research 268

References 270

List of Figures

Figure 1: Eskom's inflation-based pricing trajectory 23

Figure 2: ICASA's LRIC Approach 28

Figure 3: Regulatory State in an Institutional Context 37

Figure 4: Conception of Price Regulation in Economic Regulation 66

Figure 5: A Model for Principal-Agent Analysis 70

Figure 6: Regulated Market Segments in Network Industries value chain here regulation takes place 88

Figure 7: Research Design 115

Figure 8: Overview of Renewable Pricing Trends in South Africa 164

Figure 9: Overview of the Performance of the Telecommunications Industry (2015-2018) 189

Figure 10: Comparative Market Share in the Telecommunications Industry (2005-2018) ... 193

Figure 11: Distribution of Infrastructure per Regulated Firm 195

Figure 12: Overview of the Performance of ACSA (2017-2018) 219

Figure 13: ACSA's Regulated Tariffs (2009-2019) 228

Figure 14: Regulatory Governance Status Quo 248

Figure 15: Recommended Regulatory Governance Framework 252

Figure 16: An Approach to Outcomes - Based Regulation 262

List of Tables

Table 1: Eskom ricing trends (1992-2009) 22

Table 2: Nersa rate of return formula for MYPD ..... **Error! Bookmark not defined.**

Table 3: Implications for MYPD provisions on efficiency 26

Table 4: Regulating Committee's approach to efficiency 32

Table 5: Roles and Responsibilities in the South African regulatory state 39

Table 6: Overview of South Africa's reconstruction and stabilisation policies 50

Table 7: List of Network Industries 61

Table 8: General Costs Elements in Network Industries 89

Table 9: Comparisons of Bottom-Up and Top-Up LRIC 91

Table 10: Comparing Fully Allocated Costs and LRIC 92

Table 11: Interdisciplinary Conceptual Framework 95

Table 12: Overview of Institutional Theories 105

Table 13: Theoretical Analytical Framework for Data Analysis 112

Table 14: Comparing Qualitative and Quantitative Methodologies 118

Table 15: Comparative Approaches to Qualitative Research 119

Table 16: Managing Rigour in Qualitative Research 122

Table 17: Comparing Rigour in Qualitative and Quantitative Research 122

Table 18: List of Participants 127

Table 19: Comparing Regulatory State and Developmental State 131

Table 20: Theoretical Analytical Framework 132

Table 21: A Matrix for Cross - Case Analysis 136

Table 22: Eskom's Performance Overview (2007-2018) 157

Table 23: Top Highly Indebted Municipalities (December 2020) 158

Table 24: Theoretical Analytical Framework 236

Table 25: Overview of the Participants' Recommendations 250

Table 26: Contributions and Manifestations of Instituional Theories 266

List of Boxes

Box 1: Rationale for ICASA's LRIC Approach..... 29

Box 2: Comparison of telecommunications and electricity regulation in Brazil.....34

Box 3: Overview of Regulatory Policy in Peru 78

Box 4: Minimum Requirements for Light RIA 83

Chapter 1 Introduction and Background

This chapter introduces the entire research, starting with the background, which entails a high-level review of selected academic and public policy literature from South Africa to explain and motivate the need for the study. Key to this study was a motivation for an investigation of the influence of the political ideology of the developmental state on the regulatory state in South Africa. The study was motivated by literature indicating that efficiency as a one of the normative goals of regulation had not been achieved besides industry regulators having been introduced close to three decades ago. The need for broader studies on the regulatory state beyond the role and responsibilities of the independent regulatory agencies (IRAs or regulators) could not be overemphasised. This was needed to ensure that approaches to reforms integrated insights from politics as well as other disciplines like history and sociology.

A review of literature on the South African environment is presented below as part of the background, followed by the research problem statement and the research questions that the study sought to address. The purpose statement and the significance of the study are also presented in this chapter. The chapter concludes with the delimitations of the study, which explains the parameters of the research including a highlight on related issues that were not addressed owing to limited scope and time.

1.1 Background to the Policy Problem

This section reviews selected literature from South Africa on how scholars have studied attempts to achieve efficiency which is one of the objectives of the regulatory state in the three industries. Efficiency has, over the years, preoccupied the IRAs as they continue to search for innovative ways to reduce the costs of providing infrastructure and services by the regulated firms. In the context of this study efficiency is confined to the cost of infrastructure in the three industries what Bisbey et al. (2020) called production efficiency. Production

efficiency happens when infrastructure is constructed and provided at reasonable cost. Bisbey et al. have also indicated that the efficient production of infrastructure was critical and conditional towards the attainment of allocative efficiency (how infrastructure and services are made available and affordable to the users). In the context of this study, production efficiency was defined relative to the infrastructure costs that the firms had to invest as a result of decisions that can be traced back to politics and the pursuit of the ideology of the developmental state.

General literature on efficiency in network industries has however largely focused on the role and performance of the IRAs and less of the Ministries and their bureaucrats in the government departments who still play a significant role in the network industries through a range of instruments such as policy making, establishment and the appointment of the IRAs, and oversight on the state monopoly companies.

The emphasis on the role of the IRAs in literature can also be attributed to the fact that efficiency of production generally manifests when they assess the costs of providing services as part of the determination of the tariffs that are charged by the regulated entities. Literature generally indicates that the often-stated objective to achieve efficiency, amongst other objectives of the regulatory state, has not been realised as higher costs and tariffs have persisted in the industries across various jurisdictions in the world (Wolak, 2008).

Yet the IRAs have continued to operate in conditions that are significantly political, which justifies studies of the role of politics, especially the pursuit of the ideology of the developmental state, in the development of the institutions of the regulatory state within the context of each country. This study was concerned about the situation in South Africa, especially the extent to which the achievement of efficiency has been influenced by political considerations and decisions.

Steyn (2012), for instance, pointed out that economic regulation, including price regulation, in South Africa, has been inconsistent, unpredictable and inefficient, leading to higher costs and tariffs. The National Planning Commission (NPC, 2012), with a mandate from the government to develop and oversee the implementation of the National Development Plan for South Africa, also concluded that economic regulators had not succeeded in lowering the costs of providing services and the prices that the regulated entities charge each other for sharing infrastructure and networks, as well as the consumers or users.

The SBP Consortium (2005) found that while the post-apartheid government in South Africa had improved the regulation by introducing public consultations during policy and regulation making, especially in the telecommunications and the electricity industries, there were still limitations in the ability of price regulation to mitigate "unintended consequences and unnecessary costs" (p.9).

Various reasons have been advanced to explain the causes of regulatory failure to achieve efficiency in South Africa. These include limited accountability and lack of capacity in the regulatory agencies as well as interference by politicians and the regulated firms (Eberhard, 2012; Steyn, 2012). The SBP Consortium further posited that policy making and regulation in South Africa were not sufficiently evidence-based, as public consultations were reliant on submissions from stakeholders and the general public to generate evidence, and that these were likely biased due to vested interests. This situation, according to SBP, was exacerbated by the lack of mechanisms for regulators to verify the reliability of information submitted to them, especially by stakeholders with limited resources.

Furthermore, the SBP Consortium concluded that the general lack of evidence was also seen in the disjuncture between policy making and implementation. This was partly attributed to the absence of a coherent mechanism for feedback from the regulators, as implementers, to government departments that were responsible for policy. Such a

disjuncture between the two actors (policy makers and regulators) in the regulatory state pointed to a significant institutional misalignment leading to regulatory failure, thereby justifying a holistic approach to academic research and public policy efforts to improve efficiency in the regulation of network industries.

Concerns about the predominant and persistent failure of price regulation have resulted in the call for regulatory reforms in the National Development Plan (NDP). The NPC (2012), through the NDP, called for a review of economic regulation including price regulation in South Africa to improve the performance of the regulated industries by, amongst other actions, ensuring the independence of the regulators and building their institutional capacities to ensure that they were adequately independent and resourced. Steyn (2012) also recommended that the accounting models and processes that were followed in the assessment of costs and determination of tariffs in South Africa should be reviewed in order to improve efficiency. As to be expected, these recommendations placed a significant focus on the independent regulatory agencies, a practice that has dominated regulatory scholarship. As already stated, there has been limited attention to the role of politics and the political ideology of the development state in particular.

While the NDP committed government to review economic regulation in the network industries, this had not happened at the time of submitting this thesis in March 2022, which is approximately ten years since the adoption of the NDP in 2012. The reasons for the delay or lack of action had also not been publicly disclosed. This study is , therefore, crucial for both academic and public policy reasons. It seeks to fill a knowledge gap in academia and public policy.

1.2 Research Problem Statement

In the past three decades, starting in the late 1990s, a significant number of high-income countries have introduced reforms to broadly improve efficiency in price regulation thereby potentially enhancing performance in network industries. Regulatory reforms were necessary after privatisation and market liberalisation did not achieve competitiveness and as monopolies continued in some of the network industries. Oligopolies also emerged in the liberalised industries, leading to poor competitive outcomes and therefore high costs and prices. Similarly, lower-middle-income countries and upper-middle-income countries on the African continent such as South Africa, need to improve efficiency in their network industries. However, there is only limited literature from South Africa and other countries on the African continent focused on the influence of the ideology of the developmental state on the regulatory state leading to particular outcomes across the industries. There is therefore a need to fill the existing knowledge gap. Approaches to mitigate inefficiencies and improve efficiencies should be informed by the context of each network industry, while at the same, comparing approaches and trends across the three industries. A comparative approach was necessary to identify industry specific trends as well as the inherent institutional limitations and/or opportunities that cut across the three industries.

1.3 Purpose Statement and Scope of the Study

The purpose of this study was to investigate the influence of the political ideology of the developmental state on the regulatory state in the electricity, telecommunications and airport industries. As part of its scope, the study sought to investigate how the institutional environment arising out of the confluence of the two paradigms influenced the performance of regulation with a specific focus on efficiency. Reference to price regulation in this study was therefore limited to exploring how decisions associated with the ideology of the developmental state influenced the production costs of providing services in the three

industries. South Africa's experience in the delays and budget overruns in the construction of Medupi and Kusile power stations in the electricity industry and King Shaka International Airport in the airport industry were used as cases to generate evidence and insights. Likewise, delays in the licensing of the telecommunications radio frequency spectrum also offered insights on how political decisions, or lack of, contributed to high industry costs. Significantly, the study also sought to generate recommendations on approaches to mitigate inefficiencies/improve efficiencies in price regulation from a comparative view.

1.4 Research Questions

This study sought to answer the following main research question:

In what way does the political ideology of the developmental state influence the regulatory state in South Africa?

The following sub-questions were considered to gain deeper insight into answering the main research question:

- In what way does the ideology of the developmental state influence the development of the institutions of the regulatory state?
- How do the institutions of the regulatory state influence the attainment of efficiency in price regulation?
- What approaches are required to mitigate inefficiency/improve efficiency in price regulation?

1.5 Approaches to Efficiency in Network Industries and the Benefits of Comparative Case Studies

The three industries: telecommunications, electricity and airport[1] were selected as case studies as they have established economic regulatory frameworks and have undertaken multi-year price determinations in the past decades, making it possible to compare the different approaches to efficiency in network industries. The IRAs in these industries have prioritised efficiency as one their primary goals as set out in their founding and enabling statutes. In the electricity industry, section 2 (a) of the Electricity Regulation Act No 4 of 2006 (ERA) identifies efficiency as one of the objects of regulation in the industry. In the telecommunications industry, achieving efficiency including in the efficient licensing and use of the radio frequency spectrum is also set out in the objects of the Electronic Communications Act No 36 of 2005 (ECA). Likewise, achieving efficiency forms the thrust of price regulation in the airport industry as set out in the Airport Company South Africa Act No 44 of 1993 (ACSA Act).

There were IRAs in other network industries in South Africa such as the Ports Regulator not included in the study, owing to its limited scope and time. The three selected industries, however, were suitable to achieve the objectives and scope of the study from a comparative perspective. The following paragraphs in this section provide an overview of the activities of the IRAs in pursuit of the goal of efficiency in price regulation thereby contributing to the context within which this study was undertaken.

[1] The Airport Company South Africa (ACSA) is regulated as a single entity comprising nine stated owned airports.

1.5.1 Regulation in Practice: An Overview of the Role of the IRAs in South Africa

Although the study focused on the influence of politics on the performance of the regulatory state, this subsection explores the role of the regulators which has dominated academic scholarship and public policy. The analysis of the role of the regulators was necessary as part of explaining the context within which the study is anchored. The nature of the regulatory state is such that the different constituent parts are interrelated as discussed in Chapter 1. For instance, the outcomes of the policy maker- regulatory interface may influence that of the regulator- firm relations. A comprehensive view of regulation was therefore necessary within the scope of the study. Even more, such a broad-based analytical view would enable reforms that address potential limitations or constraints throughout the value chain of regulation comprising various actors.

1.5.1.1 Electricity Regulation

The National Energy Regulator of South Africa (NERSA), established in terms of section 3 of the National Energy Regulator Act 40 of 2004 (NERA), regulates the electricity industry. It consists of four full-time members and five part-time members appointed by the Minister for periods of five years following an advertisement for nominations. The Minister designates, in terms of section 5(2), one of the full-time members as chairperson and another part-time member as deputy chairperson. The Minister also allocates primary responsibilities amongst the full-time members for electricity, piped gas and petroleum pipeline regulation.

As in the case of the Independent Communications Authority of South Africa (ICASA), in the telecommunications industry, the members of the regulator present in a meeting take decisions (ICASA Act No 13 of 2000; Electricity Regulation Act No 4 of 2006). NERSA has since 2005 introduced what is called Multi Year Pricing Dispensation (MYPD) as a tool for the regulation of tariffs after every five years. The introduction of the MYPD followed after years of the implementation of the Electricity Pricing Compact between the

government and ESKOM wherein the later was required to implement tariffs at or below the inflation rate (Labuschagne, 2020; Eskom v Nersa, 2019). Table 1 shows the evolution of the electricity pricing prior to NERSA's shift towards achieving efficiency with the introduction of the MYPD, especially after the introduction of the MYPD 3 in 2013.

Table 1

Eskom Pricing Trends (1992-2009)

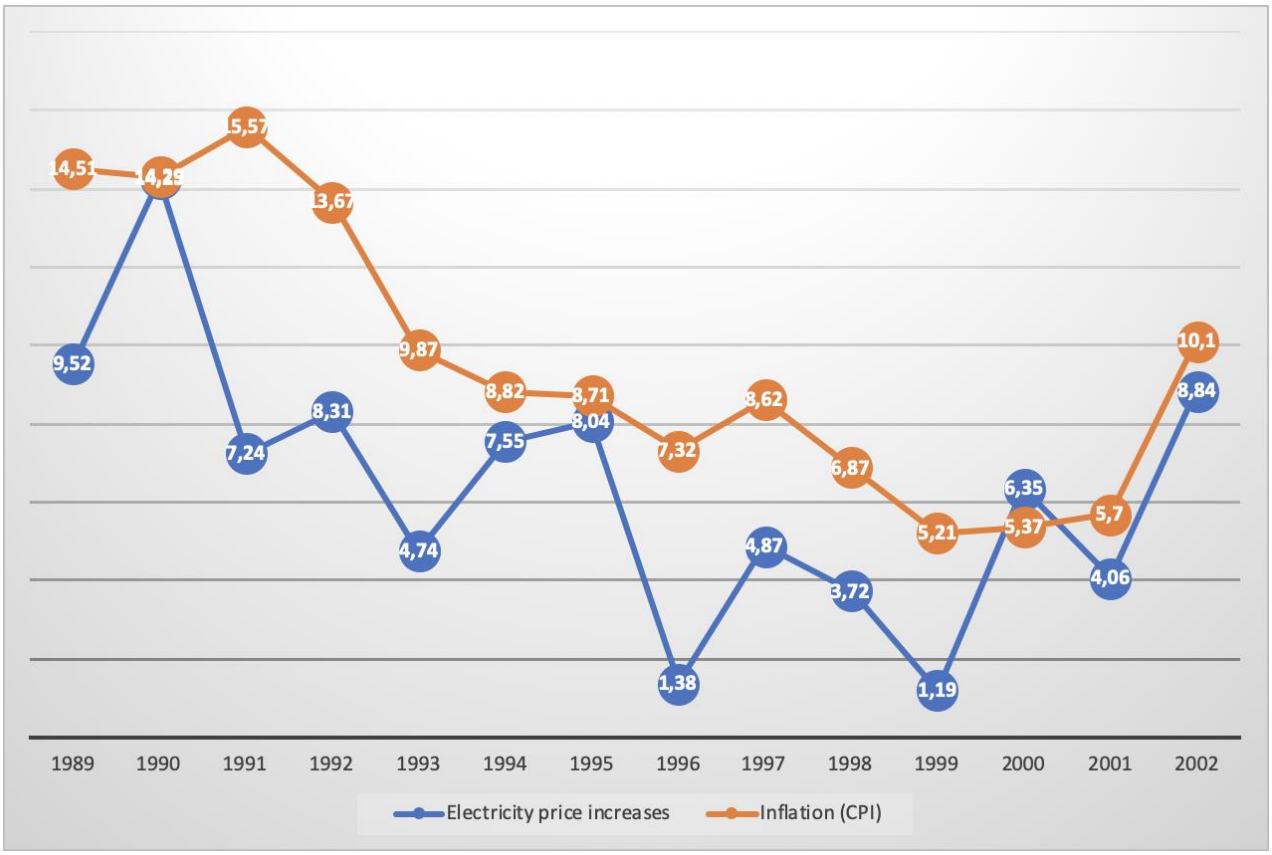
1992	Pricing compact to reduce real electricity price by 20% between 1992 and 1996
1994	RDP commitment to reduce real price of electricity by 15% between 1994 and 2000
1995	Commencement of the rate of return methodology based on fully allocated costs
2005	Introduction of the MYPD determinations
2006	Announcement of the MYPD 1 decision
2007	Eskom proposes the change in the MYPD 1 formula to mitigate risks
2009	MYPD 2 rules were introduced

Note. Eskom v Nersa (2019).

The electricity pricing compact introduced in 1992 continued with a trajectory of setting electricity prices below inflation in response to the electricity surplus generation capacity since the 1980s (Steyn, n.d.). Figure 1 shows the inflation-based pricing trajectory from 1989 to 2002.

Figure 1

Eskom's Inflation-Based Pricing Trajectory



Note. Own work (developed from the data published by Steyn (n.d., p. 18)

For most of the 1990s, ESKOM prices were declining due to the pricing compact and the commitment set in the RDP to lower prices by 15%. The prices started to increase in the 2000s while government was still insisting that prices should not increase above inflation. The surge in prices during this period was mainly due to the rising costs of producing electricity, as ESKOM's generation units were aging and in need of repairs, as well as the cost of government's drive to achieve universal access to electricity especially in previously disadvantaged communities (Steyn, n.d.). For instance, the introduction of the first Multi-Year Pricing Determination (MYPD 1) led to an increase of the tariff by CPI + 1 (Steyn, n.d.; NERSA, 2009).

By this time, liberalisation as initially envisaged in the White Paper on the Energy Policy for South Africa, 1998, had not happened and government returned focus to ESKOM to continue as a monopoly in the generation and transmission markets. As it began to consolidate its path, ESKOM also did not apply for the MYPD2, as it sought to engage government on its funding model, which pointed to a need for a new tariff trajectory resulting in ESKOM asking for huge tariffs in the subsequent years (NERSA, 2009). ESKOM's failure to apply for new tariffs was due to a discussion between the government and the firm on a model for financing electricity infrastructure in South Africa as it became evident that the electricity pricing compact was no longer suitable, going forward.

The shift from a low tariff base linked to inflation to a higher tariff trajectory informed by the infrastructure investment requirements happened within a short space of time when government was least prepared. According to Genesis Analytics (n.d.), in 2009 ESKOM proposed a tariff increase of 45% per annum, for the three years ending 2013, and 25% was granted by the regulator. In 2012, ESKOM applied for 16% per annum for the period 2013-2018, and 8% was granted. Then ESKOM applied to reopen the entire MYPD3, amounting to R62 billion revenue allowances, which was rejected by NERSA in favour of a Regulatory Clearing Account (RCA) approach wherein ESKOM would be reimbursed for its investments beyond those in the original permission provided they were unforeseen and uncontrolled.

In 2013, NERSA introduced the third Multi-Year Price Determination (MYPD3) for the period from 2013 to 2018, allowing Eskom to increase tariffs by 8% every year instead of the 16% it had requested (NERSA, 2013). The MYPD methodology is based on the rate of return formula first introduced in 1995 as indicated in Box 1.

Box 1

MYPD Methodology

Allowed revenues = Return on RAB and working capital + Generation opex + Efficient primary energy costs (inclusive of non-Eskom generation) + Transmission charges pass through (regulated separately) +/- Risk management adjustments

Note. From NERSA (2018, p. 5 & 6).

Based on this formula, NERSA incentivises returns on usable and in use long term fixed assets, mothballed assets with a "definite plan for future use", and work under construction as and when construction costs are capitalised (NERSA, 2013). This differs significantly from the approach in the airport industry where only assets in use are included in the Regulatory Asset Base.

In line with the foregoing, NERSA applies the Rate of Return formula. Across the globe the Rate of Return formula is associated with rewarding the firm for its costs irrespective of whether they were incurred efficiently or not (Decker, 2015). However, in the attempt to achieve efficiency amidst rising electricity costs in South Africa, NERSA granted itself discretions which were not supported by ex-ante regulations to enhance transparency. Table 2 provides an analysis of some of the provisions of the MYPD which form the basis of NERSA's approach to enhance efficiency in price regulation.

Table 2

Implications for MYPD Provisions on Efficiency

MYPD Provision	Implications for efficiency
In classifying operating costs further into controllable and uncontrollable elements, the energy regulator will decide on incentives to Eskom to minimise costs that are under its control as well as encourage it to reduce some of the costs that are under its control.	The MYPD is silent on the methodology to be used for this or whether the determination is arbitrary, with implications for consistency and predictability.
Expenses must be subject to a competitive procurement policy and demonstrate to the energy regulator that this policy has been strictly adhered to in its procurement processes.	It is not clear how the regulator has evaluated ESKOM's decision to change its procurement model from cost plus to open tendering, which also led to allegations of corruption and rent seeking.
Capacity constraints shall be mitigated by the open cycle gas turbines, which shall be used as a last resort before load shedding.	The regulator only engages with the use of open cycle gas turbines after it has happened, subject to Eskom's own submissions and justifications, which increases the cost of providing services.
Costs related to maintenance will be allowed and their reasonableness determined by the energy regulator on a case by case basis.	The MYPD does not explain what will constitute reasonableness as a measure of the soundness of its decisions.
The energy regulator shall as a condition of licence review the power purchase agreements before they are signed, including those considered under the Ministerial Determination by the Department of Energy.	The MYPD does not explain whether it can review the tariffs that have been set out in terms of an open bidding process involving the Department of Energy.

Note. Own work

As can be deduced Table 2 above, NERSA's discretions in the absence of an enabling regulatory framework raises questions about possibilities for regulatory forbearance in an environment characterised by the significant role of government and the failure of the regulated entity, ESKOM, evidenced by rampant system breakages leading to load shedding.[2]

[3] Since 2008, ESKOM has introduced planned and scheduled electricity outages known as load shedding across the country to minimise constraints to the system due to scheduled and unscheduled maintenance.

Regulatory forbearance is defined by Choi (2002) as a "laxity in regulatory agencies' roles of supervision, oversight and enforcement, which are mandated in laws".

Within his context, this study sought to investigate how political decision making and decisions such as the construction of the Medupi manifested in the work of the regulator. While such political decisions take place outside the tariff determinations processes, the study explored how they contributed to the costs of providing infrastructure and services.

1.5.1.2 Telecommunications Regulation

The telecommunications industry, regulated by the Independent Communications Authority of South Africa (ICASA), was established in terms of the section of the Independent Communications Authority Act No 13 of 2000 (ICASA Act). The ICASA Council made up of nine councillors appointed by the Minister of Communications and Digital Technologies is the main decision body of the regulator, following the recommendations of the National Assembly (Independent Communications Authority of South Africa Act No 13 of 2000).

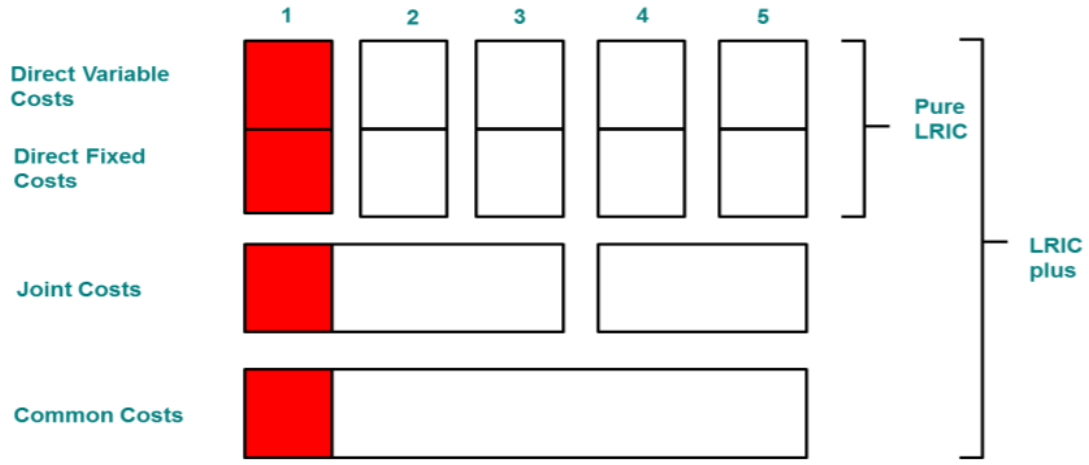
ICASA is also responsible for both licensing and tariff determinations in this industry. Licensing is a responsibility shared with the Minister of Communications and Digital Technologies. This study is concerned with how licensing decisions have influenced the costs of infrastructure and services in this industry. The regulation of wholesale tariffs usually follows the determination of competition in terms of section 67 of the Electronic Communications Act No of 2006 (ECA). In other words, tariff regulation is one of the tools available to ICASA to enhance competitiveness in the industry. Up until the introduction of the ECA, the then Minister of Communications was involved in the determination of the tariffs, which also took place when government was a sole shareholder in Telkom South

Africa (Hodge, n.d.).[3] The regulator was required to submit the tariff determinations for approval to the Minister. With the advent of the ECA in 2005 ICASA takes final decisions and determinations, which are published in the *Government Gazette* giving them legal effect. According to section 3(5) of the ECA, regulations issued by ICASA are binding unless they are set aside by the courts, which have had to adjudicate disputes about the regulation of the call termination rates amongst other telecommunications markets that have been subjected to regulation.

Like the other regulators, ICASA has focused on attempts to achieve efficiency in regulation by adopting a Long Run Incremental Cost Plus (LRIC+) methodology, which it uses to determine and allocate costs of infrastructure and services that inform tariff determinations. ICASA's LRIC is shown in Figure 2.

Figure 2

ICASA's LRIC Approach



Note. From ICASA (2018; para. 2.4)

[3] Telkom SA was listed on the Johannesburg Stock Exchange, leaving government with a 41% shareholding. The remainder of the shares are distributed between the Public Investment Cooperation and individual investors.

The LRIC plus methodology is forward looking based on the modelling of an ideal efficient network based on extensive benchmarking with similar firms within and outside the country. In economics, generally, long run costing happens when all regulated inputs are variable thereby enabling the modelling on an ideal firm (Pindyck & Rubenfeld, 2018). In regulation, the use of long run cost modelling allows the regulator to model an efficient firm through, amongst others, benchmarking within an industry in a particular country and with others in other jurisdictions. LRIC also attributes costs to the different activities and is not generalised as in the fully allocated costs models used in the electricity industry. Box 2 provides ICASA's reasons for adopting the LRIC plus methodology.

Box 2

Rationale for ICASA's LRIC Approach

LRIC+ would allow operators to recover a portion of joint and common costs incurred in the provision of wholesale voice call termination service through termination rates

- to ensure continued investment in electronic communications networks in South Africa
- to correct the imbalances created in 2010 wherein the 2010 call termination regulations applied different cost standards to different markets
- to ensure a smooth transition from Fully Allocated Cost standard used in 2010 to an eventual cost standard of pure LRIC.

Note. From ICASA (2014, para 2.5)

Against the foregoing, this study also assessed although at high level, owing to time and scope, how cost accounting methodologies such as LRIC have contributed towards mitigating inefficiencies and improving efficiencies in the absence of a mechanism in this industry and others to identify and mitigate the unintended influence of the ideology of the developmental state on efficiency in price regulation.

1.5.1.3 Airport Industry Regulation

The Regulating Committee established in terms of the Airports Company of South Africa Limited (ACSA) Act is only mandated to regulate ACSA's tariffs, it is not involved in licensing matters, thus there is no concurrence between the Minister of Transport and the regulatory agency on licensing matters. As in the electricity industry, members of the Regulating Committee are appointed by the industry Minister following public nominations. The Minister of Transport would issue an invitation for the nomination of members through the media, and the appointment of the regulator members is at his or her sole discretion. The mandate of the Regulating Committee as set out in the ACSA Act is to ensure that ACSA does not abuse its monopoly, while it should be allowed to generate reasonable returns from its investments (ACSA, 2012). The Regulating Committee is required in terms of the Act to restrain ACSA from abusing its monopoly, establish a balance between the requirements of ACSA and the expectations of users, and ensure the provision of efficient and affordable services.

The Regulating Committee has also prioritised attempts to achieve efficiency in price regulation. In its approach to regulation, the Regulation Committee sets out its methodology in what is called an Approach Document, which is published to guide the process for each permission period. The Approach document is finalised after consultation with ACSA and the airlines represented by the airline associations. This is similar to the methodologies used in NERSA's Multi-Year Pricing Determinations (MYPD).

Amongst others, the Approach Document requires ACSA to consult with the airline industries on traffic focusing and the planning of capital projects, which is one of the unique features of the airports industry. This includes consultations with the airline industry on forecasting of passenger volumes, which inform its capital expenditure over a period. The Regulation Committee uses a Price Cap model as follows:

CPI-X+/- CF+K

Where:

CPI is the consumer price index

X is the productivity factor

CF is the correction factor

K is the capital investments

Table 4 reviews the Approach Document in relation to the calculation of the Return of Capital Employed (ROCE) and the productivity factor (X). The calculation of these variables is a significant part of price regulation in the airport industry.

Table 3

Regulating Committee's Approach to Efficiency

Approach document provision	Critical regulatory questions
The ROCE calculation is merely one of the several factors that would need to be carefully considered in arriving at an appropriate X-factor.	The Approach Document does not explain the other factors and how the ROCE is exactly used to determine X.
Once an X-factor has been determined a scenario is selected, and the X is adjusted for the efficiency component.	The Approach Document does not indicate how the adjustment from X-factor to the efficiency component takes place, beside mentioning how the latter is calculated as set out below.
The quantum of the efficiency component of the X-factor is arrived at after careful consideration of both qualitative and quantitative factors. The following main factors *inter alia* are taken into consideration in determining the efficiency component of X: The key performance indicators relating to trends in cost per unit Review of costs and discussions with the company's management Efficiency factors applicable to other South African utilities Impact of various levels of efficiency on revenues, operating expenditures and returns Historical profitability and performance	This gives the regulator wide discretion, which is susceptible to different approaches and outcomes in an unstable regulator with limited capacity.

Note. Own work (Developed from the analysis of the Approach Document).

In this industry, like the others, the costs of providing services and infrastructure manifest during the determination of the tariffs by the regulator. There is currently no mechanism to mitigate the costs resulting from political decision making. There was, however, a need to investigate and document how the cost accounting methodologies used in this industry have contributed towards efficiency in price regulation.

1.6.2 Benefits of a Comparative Analysis

Comparative case studies are generally time consuming but can enhance the robustness and reliability of the findings as they involve studying a phenomenon from a

cross-case perspective (Baxter & Jack, 2008). Bert and Kupfer (2014, p. 1) argue that there is a need for cross-sectoral views as the "industries have gone and are still going through a process of liberalisation as well as de- and re-regulation". Bert and Kupfer have further indicated that while the different network industries are at different levels of market liberalisation, there are still similarities, as they function in environments characterised by political, institutional and economic issues that justify cross-industry comparisons. Politically there is a need to explore how ideology, amongst other factors, has shaped the institutions that enable price regulation in each industry.

Although the three industries exist in the same country within the same constitutional environment, it is still necessary to decipher how politics has impacted on the choices made in each industry. Experience from Brazil indicates that the fact that the institutional arrangement and performance of network industries in one country has not been the same owing to various factors such as political considerations (ideology of redistribution and the role of the state) and external influences from the international financial institutions such as the World Bank and the International Monetary Fund (Prado, 2013). Prado has further attributed the different regulatory dispensations in Brazil's telecommunications and electricity industries to specific local contexts, such as the rate of liberalisation in the two industries, owing to concerns about redistribution, amongst other factors. Box 3 highlights some of the trends in Brazil in the development of the telecommunications and electricity industries' regulatory paradigms.

Box 3

Comparison of telecommunications and electricity regulation in Brazil

As in other jurisdictions, advances in mobile telecommunications technologies influenced the rapid opening of the telecommunications market compared to the electricity market. It was the incentives of liberalisation to open the market to more players, plus the influence of the World Bank, that accelerated the adoption of the regulatory state in Brazil's telecommunications industry. This led to the creation of the telecommunications regulator ANATEL, which is generally more independent than ANEEL in the electricity industry when measured in terms of the appointment of the commissioners of the two entities. For instance, the appointment of the five commissioners of ANATEL has been designed such that an incumbent President of Brazil, as the appointing authority, is required to appoint one commissioner each year to serve a five-year term, meaning that by the end of the four-year term, the President would not have appointed all commissioners. Meanwhile, in ANEEL the President can appoint three commissioners in the first year and the remaining two in the second year, meaning that by the end of the four-year term the President would have appointed all five commissioners.

Note. From Prado (2013, p. 78 & 79)

Studies focused on developing countries and, in particular, South Africa, therefore need to be guided by local political and economic contexts. As in the case of Brazil, there is a need to investigate the development of the South African regulatory state in the different industries, importantly to avoid a generalised approach to regulatory reforms as envisaged in the NDP and other public policy prescripts and academic research. Specific industries' cases are presented and discussed in Chapter 4 in line with the requirements for thick description or detailed discussion of the cases in the case study methodology. The cases highlight the specific institutional environment of each network industry, which also informed the approach for data collection and analysis leading to industry specific and generalised approaches to regulatory reforms.

1.6 Significance and Originality of the Study

While building on existing literature and theories, this study was original as it sought to identify regulatory remedies for failure in South Africa, considering the prevailing context of price regulation (political and institutional). It broadened the study of efficiency in network industries beyond economics and provided a holistic perspective for interdisciplinary research needed to ensure that approaches to mitigate failure were suitable for each context or environment. The approach used in this study explored its interdisciplinary, which refers to studying the interdependence of and interplays amongst disciplines that underpin the interplay between the developmental state and the regulatory state and its influence on efficiency. This study was therefore significant as it contributed to:

- studying the interplay between the regulatory state and the developmental state
- understanding the discourse and approaches to efficiency in price regulation from comparative, multiple theory and interdisciplinary perspectives
- institutionalisation of regulatory governance and regulatory policy in South Africa as a way to mitigate the unintended consequences of institutional gridlocks arising from the influence of the ideology of the developmental state
- identification of issues for future research including the uptake and usage of digital technologies as part of an approach to evidence-based regulation
- development of an integrated regulatory framework that integrates ideology, institutional isomorphism, and approaches to a future-oriented and adaptive approach to regulation in South Africa
- justification for the use of Regulatory Impact Analysis at the level of political decision making
- understanding the concepts and approaches to dynamic and risk-based regulation, although not part of the initial scope.

1.7 The Rise of the South African Regulatory State

This section reviews literature on economic and political considerations (local and global) that influenced the rise of the South African regulatory state. In so doing, the study was concerned with how the institutions of the regulatory state in South Africa across the three industries were shaped by economic and political discourses and decisions that happened at the onset of the regulatory state in the 1990s.

As a departure point, the study locates the discourse on the South African regulatory state within what has come to be known as institutionalism, that is, an analysis of the influence of institutions or rules on behaviour and performance in political and economic governance. Literature on the institutional dimension of the regulatory state is reviewed and discussed in the following sub-sections.

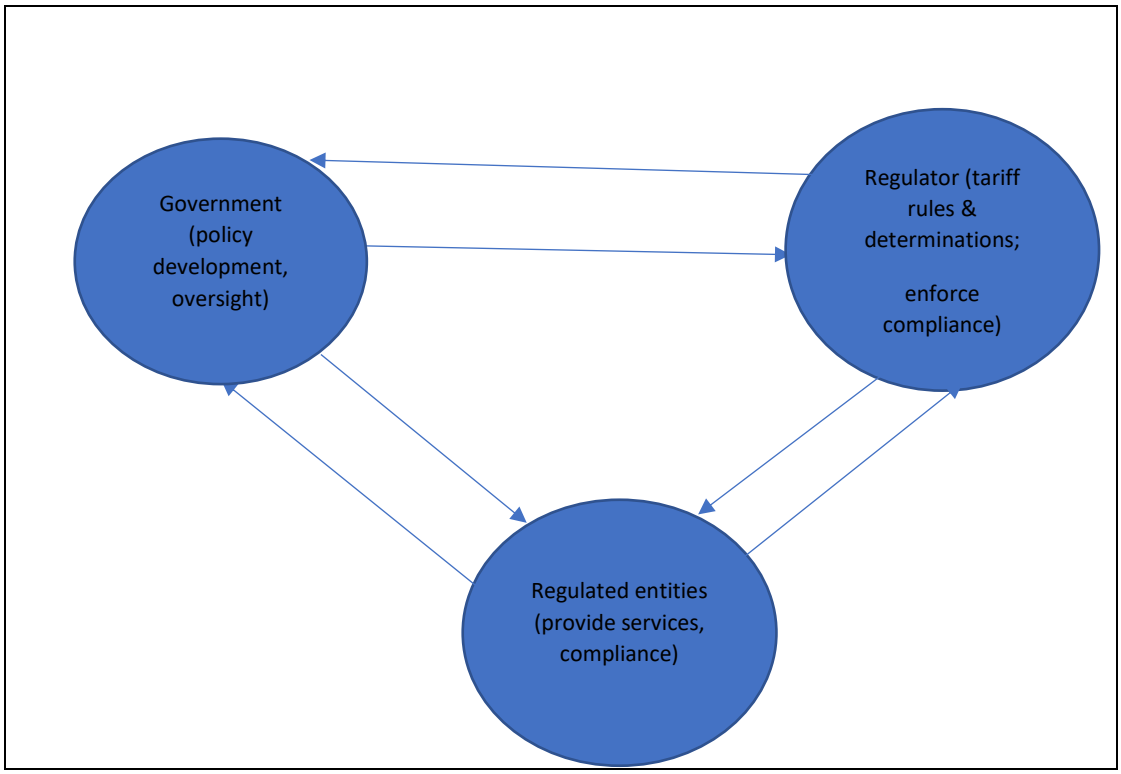
1.7.1 The Institutional Dimension of the Regulatory State

Institutionalism has since the 1970s emphasised the influence of formal and informal rules on social behaviour and performance (Schmidt, 2009; Sauerland, 2015). Although traditionally the word "institution" has been associated with organisations, over time, it has come to be associated with the rules that shape the environment within which organisations operate (Abrutyn & Turner, 2011). Schmidt (2009) also postulated that it was no longer ideal to study organisations without a commensurate focus on how, as social actors, organisations influenced as much as they were influenced by prevailing rules or institutions in a particular context or environment. Meyer (2007) also recognised that "social actors", including organisations, played a significant role in institutionalism as they were critical in the design and implementation of the rules. Meyer further posited that when social actors interact, they do so within the constructed models emanating from the laws, ideology, culture, and a variety of organisational constraints and opportunities.

At the centre of the burgeoning discourse on the role and influence of institutions has been the extent to which they enable performance explaining the continuous search for optimal institutional arrangements suitable to achieve optimal regulatory performance within a particular context (Marinescu, 2012). Although the three actors in the regulatory state could be construed as carrying out distinct mandates, they were, however, interrelated or interdependent as set out in Figure 3. This is particularly a case in the South African regulatory state in the three industries.

Figure 3

Regulatory State in an Institutional Context



Note. Own work

Figure 3 above illustrates the different forms of relations amongst the three actors that are foundational in the discourse on the institutions of the regulatory state. As is discernible from the diagram, the actors are inherently interdependent as they are bound by the rules to transact with each other, thereby completing the cycle of the regulatory state. In this

interdependency, the actions of each actor influence the others and the system as a whole. For instance, government policies and laws are meant to provide an overarching framework for the regulators to direct and enforce compliance of the regulated entities with the rules of the regulatory state. Likewise, the actions of the regulators are intended to respond to the government policy objectives by developing regulations that guide the behaviour of the regulated entities, as they provide services to the users in a prescribed manner. Without the actions and the activities of the regulated entities, the policy goals and regulations cannot be realised.

The study, for its part, focused on how the interactions between the regulatory agencies and the policy makers have influenced performance in the three network industries. Consistent with the research questions, the study investigated how the political ideology of the developmental state shaped the institutions of the regulatory state (rules enabling interactions between the policy makers and regulators), leading to particular outcomes in the form of efficiency.

Table 4 highlights some of the rules that enable interactions amongst the three actors in the regulatory state in the South African context and across the different industries. This analytical framework was developed from the review of legislation in the three industries. The legislation reviewed include the ERA, ECA and ACSA Act.

Table 4

Roles and Responsibilities in the South African Regulatory State

Sub-system	Electricity	Telecommunications	Airport
Policy maker and regulator	Minister of Energy appoints members of the regulator following a public advertisement for nominations. Minister is required to consult the regulator before issuing determinations for additional power to be licensed & regulator bound to implement ministerial determinations.	Minister of Communications and Digital Technologies appoints ICASA councillors after obtaining a Parliamentary concurrence. Minister is required to consult the regulator before issuing policies and policy directions. Minister issues policies and policy directions for the regulator to consider and not to implement.	Minister of Transport appoints members of the Regulating Committee following a public advertisement for nominations. Minister issues no further policies or policy directions.
Policy maker and regulated firm	Minister of Energy has no direct oversight relationship on the regulated entities. Regulated entity in the generation market overseen by the Minister of Public Enterprises who also approves its annual corporate strategy and plan.	Policy maker has no direct oversight relationship with the firms in the liberalised industry. Mainly relates during public policy making processes wherein the firms make representations.	Policy making and oversight performed by the Minister of Transport who also approves the annual budget and corporate strategy of ACSA.
Regulator and regulated firm	Regulator issues licences, determines tariffs and enforce compliance. Firm provides infrastructure and services, and submits multi-year tariff requests.	Regulator issues regulations and licences; determines tariffs and enforces compliance. Regulator initiates multi-year tariff determinations.	Determines tariffs and enforces compliance. Firm submits multi-year tariff requests.

Note. Own work based on the review of legislation in the three industries

Informed by Table 4, there is evidence of collaborative governance between the various actors in the regulatory state especially between the policy makers and the regulators. Collaborative governance generally involves and has been associated with interactions and cooperation between the public and private institutions. Emerson et al. (2011) have, however, provided an all-encompassing definition of collaborative governance:

> The processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, level of government, and/or the public, private and civil spheres in order to carry out public purpose that could not otherwise be accomplished (p.2).

Given this definition, it follows that collaborative governance can be implemented at various levels of society, depending on the issues being addressed. A collaborative approach, according to Ansell and Gash (2007), would largely entail stakeholders, including the private sector, engaging with public agencies to achieve consensus on issues of common interest, usually to mitigate tensions. Ansell et al. further pointed out that, in a significant number of cases, across the world, "collaborative governance emerged as a response to the failures of downstream implementation and to the high cost and politicisation of regulation" (p.544). In practice, it allowed stakeholders to have a greater say on how they were governed which included co-design and assessment of policies within a particular area (Bianchi et al., 2021).

There was however a need, as in this case, to study and explore collaborative governance from a different dimension. While collaborative governance is generally associated with the state in relation to external stakeholders, there was a need to study and understand how it has been implemented within the state, that is, between the policy makers and the IRAs. Both forms of collaborative governance, within and outside state, have a common dominator, the significant role of politics in society and in governance. In this case,

the study focused on how collaborative governance emanating from the confluence of political ideology and the regulatory state influenced efficiency in price regulation.

Informed by the foregoing and in line with the research questions, the following theories were considered and reviewed to develop an analytical framework for the study: Discursive institutionalism, sociological institutionalism and historical institutionalism. These theories are reviewed and discussed in detail in Chapter 2.

1.7.2 Overview of the Rise of the Regulatory State in Developed Countries

The regulatory state in South Africa and other developing countries has been associated with the rise of the regulatory state in the developed world. Various scholars, amongst them Dubash and Morgan (2013), have explained this association between the European regulatory state and the regulatory state in developing countries by pointing out that developing countries copied the regulatory state from the developed world amidst the introduction of independent regulatory agencies and the separation of policy-making, regulation and operations. This happened even when there were variations in local political and policy concerns, discussed in detail later in this section.

Coglianese (2017, p. 277) for instance has posited that regulators in most democracies have shared commonalities, namely "(1) a delegated mission; (2) tremendous discretion combined with public accountability for the use of that discretion; (3) complex, dynamic problems and (4) a typically diverse set of regulated firms with interests at odds with those of the regulator" even if in practice the results have not been the same within and between countries. Therefore, an overview of the regulatory state in the developed world provides another dimension to the context that shaped the regulatory state in the developing world, including South Africa.

The advent of the regulatory state in the developed world according to Yeung (2010), entailed the reorganisation of the state function that included the use of regulation (determination and enforcement of rules) and the delineation of functions and powers to policy makers and the independent regulatory agencies. Bartle (2005, p. 1) has termed this reconfiguration "a crucial interface between the democratic world of politics and government and the technocratic world of regulation". Bartle's characterisation of the regulatory state has explained the complex balancing act between the continuous role of politics and the introduction of technocratic institutions with significant powers to regulate. Regulation has, as a result, become an important pillar for the state to direct the performance of the regulated firms and industries, making it one of the fundamental powers of the state "together with fiscal and monetary policies" (OECD, 2010, p. 5).

Yeung (2010) also traced the origin of the regulatory state, with its variations, to the post World War II (1935-1945) era in the United Kingdom and other countries in Europe largely marking a shift from welfarism to regulation. In the British context, for instance, the shift towards the regulatory state was also necessary to convince potential market entrants that they would compete effectively against British Telecom, which was already dominant as it controlled the key transmission infrastructure and enjoyed a first mover advantage as it started and operated as a monopoly (Parker, 2009).

The reforms that took place in Europe with the adoption of the regulatory state were also necessary given the significant role of network industries as enablers for innovation and growth across other sectors and economies. In light of the social and economic role of network industries, significant investments were needed "given poor macro-economic performance, public finances [that] were strained and limited allocation of public funds to large-scale network infrastructure projects" (Bauer, 2013, p. 7). In particular, this was the case in the telecommunications industry amidst the emergence of mobile communications

technologies that ushered in new supply and demand pressures that could not be addressed by governments and required the private sector's contribution (Lodge & Stirton, 2006; Bauer, 2013).

Helm (2009) has postulated that in addition to underperforming market structures due to inefficient state monopolies, the economic situation in Europe was exacerbated by institutional constraints such as the lack of coordination amongst various state entities, the role of government in the market resulting in inefficiencies, and lack of clarity on the allocation of risks that increased the cost of capital. Changes in Europe were further influenced significantly by regional institutions in the form of the European Commission enforcing similar practices across the region (Bauer, 2014). On the other hand, while scholars such as Kessides (2014) have acknowledged the opportunity for Africa to build supra regional institutions to coordinate reforms aimed at maximising the benefits of regulation, developments in Africa were largely influenced by what was happening across the world.

By the time a significant number of developing countries, including South Africa, adopted a regulatory state in the late 1990s, developed countries were grappling with efforts to enhance efficiencies in their regulatory systems using Regulatory Impact Analysis (RIA) and other Cost Benefit Analysis (CBA) methods as potent tools for reforms (Lodge & Wegrich, 2009; Baldwin, 2010). Further reforms had become necessary in the European context given the inefficiencies that followed the liberalisation of industries, which included the privatisation of previously state-owned entities.

1.7.3 The Regulatory State in the Developing World

The regulatory state in most of the developing world emerged in the 1990s when most of the countries in Europe were mainly concerned with enhancing efficiency as a condition to achieve social and economic expectations of the citizens as the users of infrastructure and services (Dubash & Morgan, 2013). According to Majone (1994), the 1990s was a significant

period of transformation from a positive state to a regulatory state in many developing countries. The 1990s was hyped in scholarship and public policy as a momentous period of a shift from an environment characterised by institutional gridlocks, lack of capacity and failure to achieve efficiency. There were real prospects and expectations that the significant shift from state intervention which took a form of bloated bureaucracies and state-owned companies to embracing rulemaking, enforcement and compliance to achieve social and economic goals was going to improve performance in the regulated industries (Badran, 2013). A new form of state delivery machinery through the IRAs was emerging. Dubash and Morgan (2013) also emphasised the significance of this change:

> Regulatory agencies were established across the developing world in the 1990s during a period when linked agendas of privatisation and liberalisation were dominant. As part of the so-called 'Washington Consensus', regulatory agencies reflected these agendas. They provided a means for decision- making insulated from day-to-day political direction and were staffed by professional expertise (p.8).

The question remains whether such normative expectations have been met in South Africa and other developing countries which is the focus of this study. Informed by the assessment of Dubash and Morgan, who pointed to variations in approaches to the regulatory state, the following paragraphs highlight some of the considerations that influenced the rise of the regulatory state in the developing countries.

The developing world in the period leading to the rise of the regulatory state was generally characterised by significant economic challenges, which a decade earlier had led to interventions by the World Bank (Williamson, 2004). The World Bank recommended reforms aimed at reducing the role of the state in the economy through privatisation and liberalisation of the then state-dominated industries.

Reforms recommended by the World Bank sought to reduce what was then seen as a bloated state, at the time when many economies were dominated by largely unregulated and generally inefficient state monopolies (Williamson, 2004; Dubash & Morgan, 2013). Similar developments were already taking place in the Caribbean wherein countries such as Jamaica, Trinidad and Tobago adopted the regulatory state with the influence of the World Bank, Inter-American Bank and the International Monetary Fund (Lodge & Stirton, 2006). Developing countries were required to either privatise or open markets to the private sector at a time when they were largely concerned about redistribution, given poor access to infrastructure and services (Ureana, 2013). The significant focus on redistribution in the developing world exposed a disjuncture with the European experience, which at the time was more concerned about bringing about efficiency in the regulated industries. In particular, the ideological orientation in favour of significant state involvement and intervention has remained contentious and necessitates further studies.

Of critical importance, has been the need to understand the ideological orientation that has followed the adoption of the regulatory state. While a significant section of scholarship has associated the regulatory state with the neo-liberal agenda, emerging evidence indicates that local politics have had a significant impact on the development of the regulatory state in various jurisdictions in the developing world (Dubash & Morgan, 2013; Ureana, 2013). Understanding the local political contexts should therefore continue to be a focus of scholarship and public policy as an attempt to locate further reforms within the context of each country and industry. A point of departure in this regard has been whether the regulatory state in South Africa has really resembled an unfettered and unregulated role of the market and the private sector in the economy. This analysis is necessary as it helps avoid generalisations and deal with issues within the relevant contexts. Chang and Grabel (2007) have defined neo-liberalism as follows:

> Neo-liberalism has three chief components. It elevates the role of the markets (over governments) in economic governance and in mediating flows of goods and capital (through the elimination of price supports and ceilings, free trade, market-determined exchange rates, etc.); it enhances the role and scope of the private sector and private property (through privatisation, deregulation, etc.); and it promotes a particular notion of 'sound economic policy' (through balanced budgets, labour market flexibility, low inflation, etc.). (p. 15)

Another definition of neo-liberalism is provided by Monbiot (2016), pointing to neo-liberalism being associated with a significant role of the private sector and the markets as well as the deregulation of industries:

> Neo-liberalism sees competition as the defining characteristic of human relations. It redefines citizens as consumers, whose democratic choices are best exercised by buying and selling, a process that rewards merit and punishes inefficiency. It maintains that the market delivers benefits that could never be achieved by planning. (para. 4)

In markets that were historically dominated by state institutions, the embrace of neo-liberalism would have entailed reducing the role of the state in the economy and the transfer of competence to the private sector (Narsiah, 2002). This conclusion forms the basis within which to study and understand the nature of the South African regulatory state, that is, whether it has resembled a neo-liberal outcome, or that the prevailing situation reflect a complex interplay amongst different ideological paradigms.

1.7.4 The South African Experience

Within the South African context, an overview of some of the policy considerations and decisions made by the governing party, the ANC, and the post-apartheid government provided a baseline towards the study of the ideological orientation of the country's regulatory state. In particular, this sub-section explores the interplay between political and

economic issues that influenced the rise of the regulatory state and its institutions in South Africa.

As will be indicated throughout the remainder of this section, the adoption of the regulatory state in South Africa was marked by significant policy upheavals, especially in the second half of the 1990s, amidst contestations between the ideological preference for the Reconstruction and Development Programme (RDP) and the government's macro-economic policy, the Growth Employment and Redistribution (GEAR) below. This was a significant moment of determining the future economic growth trajectory at a time of significant redistribution concern and the prevailing macro-economic instability.

The ANC's early policy documents in the 1990s, including the RDP, adopted in 1994, have pointed to a significant developmental state-oriented policy trajectory anchored around redistribution and the significant role of the state (ANC, 1994). The same can be said of the ideological discourse between the ANC and its alliance partners, the South African Communist Party (SACP) and the Congress of South African Trade Unions (COSATU)[4], which generally pointed to a significant preference for a state-led trajectory and redistribution while at the same time attempting to integrate what was happening across the globe, including the negotiations and the commitments made at the World Trade Organisation, starting in 1997.

The emphasis on redistribution as contained in various policy prescripts was on its own a significant shift from apartheid to what has been called inclusive and shared growth in the policy documents of the ANC[5] such as the RDP. Network industries by virtue of their

[4] The governing ANC is in an alliance with the SACP and COSATU known as the Tripartite Alliance. The alliance composition influences what is called a 'broad church' a reference to a multiple ideology character of the ANC. As indicated in this section, the alliance partners have oftened differed on the policy positions on the economy including the market structures.

[5] The ANC won South Africa's first democratic elections in 1994 obtaining 62.4% of the vote thereby making it a critical body of knowledge in the development and evolution of the South African regulatory state (EISA, n.d.).

potential social and economic impact have been at the centre of the ANC and government's redistributive policies. As the National Treasury (2020, p. 4) pointed out: "Network industries such as energy, transport, and telecommunications provide essential services that underpin the growth, productivity, and competitiveness of the economy."

For instance, redistribution has been at the centre of the state's Integrated National Electrification Programme (INEP) in the electricity industry, introduced after the first democratic elections in 1994. INEP was introduced to advance rapid electrification, achieving 7.4 million new connections by 2018, a significant shift from 30% of households with access to electricity in 1994 to over 80% by 2018 (Department of Energy [DOE], 2020). In 2004, the government committed to achieve full electrification by 2012. Redistribution also focused on the allocation of free services and a differentiated pricing for poor households, a practice common in the electricity industry where the policy provides for the subsidisation of the indigent, largely the beneficiaries of the social security system, amounting to the first 50kWh/m being provided free of charge. Other redistributive measures introduced in the electricity industry include lower prices and free connections for low consumption domestic customers.

Similar interventions to promote universal access wherein users can have access to telecommunications within a reasonable distance were also introduced in telecommunications mainly focused on the obligations that were imposed by the regulator on the regulated firms (Telecommunications Act No 103 of 1996). In the airport industry, the situation has been different as the ACSA Act, focused only on price regulation to achieve efficiencies in the provision of airport services. However, the influence of redistribution and the significant role of state in this industry can be explained in terms of cross subsidisation within the ACSA stable thus supporting state-owned airports in less profitable towns across the country. As will be shown in Chapter 5, this explains why ACSA is regulated as a single entity

comprising nine of the biggest state-owned airports in South Africa as opposed to each airport being regulated as a separate entity.

The significance of the network industries in the post-apartheid era is further elaborated in various policies adopted by the government as highlighted in Table 5. These policies include, in addition to the RDP and Growth Employment and Redistribution (GEAR), the Accelerated and Shared Growth Initiative of South Africa (ASGISA) with a focus on reducing entry barriers and the cost of doing business; the National Growth Path with a focus on investment in infrastructure to stimulate economic growth; and the commitment to the review of the performance of economic regulation of network industries National Development Plan (ANC, 1994; DOF, 1996; The Presidency, 2006; DED, 2010; NPC, 2012).

Table 5

Overview of South Africa's Reconstruction and Stabilisation Policies

Policy	Extract from policy
Reconstruction and Development Programme	Water is a natural resource, and it should be made available in a sustainable manner to all South Africans (ANC, 1994, p. 22)
	Right to Water: The fundamental principle of our water resources policy is the right to access to clean water - water security for all (ANC, 1994, p. 22)
	Electricity for all: an accelerated and sustainable electrification programme must provide access to electricity for an additional 2.5 million households by the year 2000, thereby increasing the level of access to electricity to about 72% of all households (double the present number) (ANC, 1994, p. 33).
	The RDP aims to provide a universal affordable access for all as rapidly as possible within a sustainable and viable telecommunications system; to develop a modern and integrated telecommunication and information technology system that is capable of enhancing, cheapening and facilitating education, health care, business information, public administration and rural development, and to develop a South African cooperative programme of telecommunications (ANC, 1994, p. 34).
	A future transport policy must: promote coordinated, safe, affordable public transport as a social service (ANC, 1994, p. 35).
Growth, Employment and Redistribution strategy (GEAR)	The nature of restructuring of state enterprises may involve the total sale of the asset, a partial sale to strategic equity partners or the sale of the asset with government retaining a strategic interest (Department of Finance, 1996, p. 17)
Accelerated and Shared Growth Initiative of South Africa (ASGISA)	The South African economy remains relatively concentrated, especially in upstream production sectors such as iron and steel, paper and chemicals and inputs sectors such as telecommunications and energy. Competition law and industrial policies need to be strengthened to counteract these factors (The Presidency, 2006, p. 5).
National Growth Path	Public investment can create 250 000 jobs a year in energy, transport, water and communications infrastructure and in housing through to 2015 (Department of Trade Industry and Competition, 2010, p. 27)
National Development Plan	The role and effectiveness of sector regulators needs to be reviewed. In addition to issuing licences and setting tariffs, regulators need to place more emphasis on stimulating market competition and promoting affordable access to quality services (NPC, 2012, p. 159).

Note. Own work

Various scholars have postulated that the attainment of such lofty goals as set in the various policies on the contribution of network industries in the economy was characterised by macro-economic uncertainties in light of the dwindling fiscus and soaring debt (Mbeki, 1998). Within this context, a new macro-economic strategy was therefore needed to strengthen the macro-economic environment including government's fiscal position thereby creating the necessary conditions for the implementation of the RDP (Mbeki, 1998). At the time of the introduction of the GEAR strategy in 1996, South Africa was facing a fiscal deficit of 6% against a significant demand to finance the redistributive commitments in the RDP (Liebenberg, 1996). This was also a time when economic growth was limited, estimated at 3% in 1995, which was the highest since 1988.

The macro-economic environment prevailing at the time in South Africa generally mirrored what happened in Europe in the period leading to the adoption of the regulatory state in various countries. Yet in the South African context this became a period of significant policy incoherency due to an uneasy divide between the emergence of the regulatory state and the developmental state, the latter explained by a significant focus on redistribution and the role of the state.

Already, in the period leading to the democratic transition, the prevailing fiscal constraints and macro-economic uncertainties then resulted in the apartheid government (towards the end of its rule in 1993) obtaining a loan of $850 million from the IMF with the support of the ANC, which was still an extra parliamentary party at the time (Terblanche, 2018). Marais (1998) and Terblanche (2018) have posited that the loan came with conditions that later contributed to the ANC's future orientation towards a new macro-economic strategy in 1996. According to Terblanche and Marais, GEAR specifically supported fiscal austerity and the reduced role of the state in the economy, including in network industries.

While government was embracing what came to be characterised as a neo-liberal macro-economic strategy and the regulatory state, the governing party continued to maintain that it was in favour of a significant role of the state in the economy. COSATU (1998) and SACP[6] (1998) argued that the new macro-economic strategy was a significant deviation from the RDP's focus on redistribution and the role of the state. The SACP[7], for instance stated:

> [Conference] reaffirms its belief that the overall thrust of GEAR is not an appropriate macro-economic framework for our society, and this overall thrust must be rejected. We have resolved, in the light of this, to engage our alliance partners, other components of the MDM, and government, to ensure that we develop a macro economic framework. (1998, para. 19)

Mbeki[8] (1998), on the other hand, blamed right-wing parties for the misinformation about the relationship between GEAR and the RDP, arguing that:

> One of the issues, which the right-wing parties in our country are very fond of repeating, is that our movement has abandoned the RDP. By this means, they hope to turn the masses of our people who voted for us in 1994 against our movement by seeking to project the notion that we have betrayed the trust that the people placed in the ANC. (para. 16),

Mbeki further argued that the ANC did not deviate from the policy regarding ESKOM as set out in the RDP, that is, to "bring electricity to the black people of our country". This statement also confirmed the ANC and government's significant focus on redistribution at a

[6] The ANC together with COSATU and the SACP form what is called a Tripartite Alliance which initially brought the three together against apartheid and today the SACP and COSATU provide electoral support to the ANC and have some of their leaders deployed in parliament and government under the ANC.
[7] SACP 10th National Conference Declaration, which also called government not to proceed with the Bill that sought to restructure Eskom ahead of the liberalisation of the generation market of the electricity industry.
[8] Thabo Mbeki was a significant player in South Africa's transition to democracy, having served as Deputy President to the first democratically elected President, Nelson Mandela, and as President from 1999 to 2008 when he resigned from the Presidency. He is considered to have been a leading figure in the development and adoption of the government's post-apartheid macro-economic strategy, the Growth, Employment and Redistribution Strategy (GEAR).

time when it was confronted with a challenge to stabilise the macro-economic environment. On the telecommunications industry, Mbeki argued that government was still following a state-led trajectory as follows:

> The basic infrastructure network must remain in government ownership and must provide a significant advantage to the business sector as it reduces costs and increases productivity, and serves as an integral part of financial services, the commodities market, trade and manufacturing. (para. 60)

The government's attempt to strike a balance between the adoption of the regulatory state and the embrace of local ideological preferences later found expression in the commitments at the World Trade Organisation wherein South Africa committed to the policy of managed liberalisation[9], which sought to retain government ownership of infrastructure, especially in the telecommunications industry, amidst the opening of the markets partly influenced by the advent of mobile communications[10] (Steuart, 2005). Owing to the policy of managed liberalisation. Upon being licensed in 1993, mobile communications firms, Vodacom and MTN, were prohibited from building their own infrastructure, and had to lease from the then wholly state-owned company, Telkom, based on the guidelines issued by the Minister of Communications. Section 38 of the then Telecommunications Act No 3 of 1996 set out the framework for this: "No person other than Telkom shall be granted a licence to provide long distance telecommunications services until after the date to be fixed by the Minister by notice in the Gazette."

[9] Managed liberalisation meant that government will control the opening of the market as an when it is necessary to do so as opposed to the wholesale liberalisation. In accordance with section 5(6) of the ECA, this meant that licensing could only take place following the issuing of a policy direction by the Minister. As will be shown in Chapter 5, similar approaches can be seen in the electricity industry wherein NERSA cannot commence the licensing of additional power generation without a ministerial determination (ERA).

[10] Up until 2002, the Telecommunications Act No 103 1996 (Telecoms Act), prohibited Vodacom and MTN from building their own infrastructure, instead relying on Telkom, as a monopoly, to provide infrastructure to them (Telecommunications Amendment Act No 64 of 2001).

At the same time, section 39(1) (a) stated that "No person other than Telkom shall be granted a licence to provide local access telecommunications service until after a date to be fixed by the Minister by notice in the Gazette."

As recognised by Storer and Teljeur (n.d.), up until the end of 2000, the retail tariffs in this industry were also regulated and determined by the Minister who issued the guidelines through which the industry would pay Telkom for the use of its infrastructure. This arrangement changed significantly with the amendment to the Telecommunications Act No 64 in 2001 and the advent of the ECA, which granted the mobile communications firms their rights to build their own infrastructure. This amendment shifted the regulatory paradigm from the dominance of one firm to a multi-firm industry, especially after the licensing of Cell-C in 2001. According to the ANC (2017), such changes were necessary as "tactical manoeuvres" in the attempt to mitigate what it called an unpredictable balance of forces in South Africa and the world, while still committed to a state-led transformation. More specifically the ANC has insisted that:

> A national democratic society constitutes an ideal state we aspire as the ANC and the broader democratic movement. It should not be confused with tactical positions that the liberation movement may adopt from time to time, considering the balance of forces. Circumstances in which we conduct social transformation will change all the time. And in the process of affecting such transformation, there will be successes and failures. (para. 39)[11]

As will be shown later in this study, particularly in Chapters 4, 8 and 9, these competing policy considerations and preferences led to policy misalignment in the different industries,

[11] This statement reflected a complex balancing act involving ideological and political preferences versus the reality of what the ANC in government was doing to stabilise the macro-economic environment that included commitments to reduce the fiscal deficit and enable the private sector to play a significant role in the economy, at least based on the objectives of GEAR. While the ANC broadly professes its commitment to the Reconstruction and Development Programme, the ANC wing in government was championing what was being characterised as a neo-liberal instrument.

especially electricity, also mentioned by the participants as one of the reasons for regulatory failure.

South Africa's commitments in the aviation industry focused on the liberalisation of airlines, with no commitments to liberalise the airport industry, which continued under state ownership (WTO, 1997; Steuart, 2005). This can partly be explained by global trends around the separation of airports and airlines with regulation focusing on the airport industries due to deal with monopoly challenges and to enable competition in the airline business (Serebrisky, 2003). In addition to their national schedule of commitments, member countries of the WTO are required to comply with general obligations such as transparency, regulation to provide for administrative remedies, especially where monopolies were still involved, and to ensure competitiveness in liberalised industries (WTO, 2013).

1.8 Delimitations of the Study

This section deals with the delimitations of the study focused on issues that are related to the topics and the concepts but are not included in this study owing to its focus and scope. For instance, any reference to politics is limited to the ideology of the developmental state in South Africa. It does not include other aspects of politics.

Likewise, the discussion on the role and influence of the political ideology of the developmental state has been limited to the role of government Ministers in the different industries and does not include other politicians such as Members of Parliament, opposition parties, trade unions and other social movements.

Price regulation is generally associated with the responsibilities of the regulatory agencies and involves cost accounting methods used to assess costs and determine tariffs, yet this study takes a broader view of other activities in the regulatory state that have a direct influence on price regulation. These includes licensing responsibilities and activities in the different industries that have a direct influence on the performance of price regulation.

The study also analyses how the pursuit of the political ideology of the developmental state has influenced the costs of infrastructure and networks (production efficiency) and did not analyse and compare the tariffs that are charged by the regulated entities to the tariffs that are charged by the regulated entities to the consumers (allocative efficiency). Studying the influence of the political ideology on productive efficiency can generally be approached from qualitative or quantitative methodologies and methods. This study, owing to its scope and time, used qualitative methods based on the views of the participants in the different industries sharing their experience.

1.9 Summary of the Chapter

This chapter provided the background of the study from both public policy and academic perspectives. The background indicates that price regulation in the different industries has not achieved the expected results in lowering the costs of providing infrastructure and services. Regulatory scholarship also indicates that the discourse on efficiency in price regulation has generally been confined to the role and activities of the regulatory agencies. This is despite the fact that independent regulators operate in environments that are significantly influenced by politics. The problem statement recognises the dearth of literature on the influence of the political ideology of the developmental state on the regulatory state. The study thus sought to investigate the relationship between these concepts. In so doing the chapter reviewed preliminary literature on the role of the regulatory agencies in price regulation, thereby setting a context to explain why a political dimension to efficiency in price regulation was necessary. This is followed by the review of literature on the rise of the South African regulatory state within the global and local contexts. This was necessary to explore the economic and political issues that shaped the regulatory state in South Africa.

1.10 Outline of the Chapters

Chapter 2: This chapter contains the review of literature on various aspects of the regulatory state and the developmental in line with the scope and questions of the study. The chapter broadly provide a conceptual theoretical framework of the study. Key concepts such as efficiency, network industries, economic regulation, price regulation are defined and explained. Literature on various approaches to regulation as well as the review of the theories are included in this chapter.

Chapter 3: This chapter sets out the research design and the methodology used in the study. The chapter also includes the methods and procedures used for data collection and analysis.

Chapter 4: The chapter presents the findings of the engagement with the participants and the review of documents in the electricity industry. First it present data on how the pursuit of the political ideology of the developmental state shaped the institutions of the regulatory state leading to particular industry outcomes. The chapter also includes the recommendations of the participants on approaches to mitigate inefficiencies/improve efficiencies.

Chapter 5: In this chapter the findings of the study emanating from the engagement with the participants and the review of documents in the telecommunications industry are presented. Following on the approach used in Chapter 4, this chapter also present data on the influence of the ideology of the developmental state on the institutions of the regulatory state and how these in turn influenced the performance of the industry. The chapter also concludes with the recommendations of the participants in this industry on approaches to mitigate inefficiencies/improve efficiencies.

Chapter 6: This chapter presents the findings of the engagement with the participants and the review of the documents in the airport industry. The chapter follows the same

approach as in Chapters 4 and 5. The data on the influence of the ideology of the developmental state on the regulatory state and its institutions is presented, followed by the analysis of the influence of the institutions of the developmental state on the performance of the industry. The recommendations of the participants on approaches to mitigate inefficiencies/improve efficiencies are also presented and discussed.

Chapter 7: This chapter provides an analysis of the data from the three findings chapters. It compares and contrasts approaches and trends in the three industries. Fist the chapter presents the data on the interplay between the ideology of the developmental state and the regulatory state. The recommendations of the participants are considered and analysed across the three cases leading to a framework for regulatory governance which is recommended to mitigate the challenges of collaborative governance in the different industries.

Chapter 8: This chapter provides the conclusions and the recommendations of the study. The conclusion of the study is presented indicating that the ideology of the developmental state and the regulatory state influence each other and the performance of the industries. The chapter broadly affirms the recommendations of the participants in each industry while at the same time recommending cross cutting issues. The contribution of the study towards theory finds expression in this chapter. As well, the chapter reflects on the limitations of the study as well as make recommendations on approaches to regulatory governance in the different industries.

Chapter 2 Conceptual Theoretical Framework

This chapter provides the conceptual theoretical framework of the study, which includes the definition of the key concepts based on the review of literature. Key concepts, such as network industries and efficiency, are discussed extensively to set a framework within which various theories of regulation are applied. In section 2.1, the chapter reviews literature on the economic characteristics of the network industries and the rationale for price regulation. This is followed, in section 2.2, by a review of literature on price regulation within economic regulation, thereby explaining the rationale for a need for a political dimension of regulation. In section 2.3 the study reflects on the efficiency challenge, that is how regulation has failed to achieve efficiency including the associated reasons. Section 2.4 reviews literature on the political perspectives of price regulation, followed by 2.5 on literature on approaches to mitigate inefficiency or improve efficiency in price regulation.

The chapter also locates the research within the realm of interdisciplinarity, pointing to a complementary application of various disciplines and institutional theories in the study of efficiency in price regulation. Although the study focuses on the role and influence of politics in price regulation, the chapter also considers other disciplines that are crucial for interactions between actors to happen, such as ideology, institutional isomorphism and path dependence. The need and use of these theories is discussed and explained later in this chapter.

2.1 Economic Characteristics of the Network Industries and Rationale for Regulation

The role of network industries in the economy of most countries has dominated public policy and academic literature for a foreseeable period. Network industries have enjoyed this prominent role in the economy owing to their role as enablers of growth and development in other economic industries. Helm (2009) has explained the contribution of network industries in an economy:

> The roads, railways airports, broadband, water and sewage pipes, and the electricity and gas pipelines are the necessary conditions for the economy to function, and together they influence or determine much of the cost structure of industry. They are necessary conditions for economic activity. (p. 308)

Network industries are generally defined by the infrastructure or physical systems used to provide services (Competition Policy International (CPI), 2015). Network industries are defined by the "transmission and distribution services through a network of cables, pipes and/or other facilities to end users and act as enablers in other industries" (Van Basten, 2007, p. 3). This definition holds for the electricity and aspects of telecommunications industry that involved the use of cables and pipes such as broadband fibre networks. Gottinger (2003, p. 20) has also defined network industries as infrastructure industries "where the firm or its product consists of many interconnected nodes, where the node is a unit of a firm or its product, and where the connections among the nodes define the character of commerce in the industry". This is the case for both the electricity and the telecommunications industries, given the existence of networks that connect various aspects of the industry value chains such as the upstream infrastructure, transmission and distribution networks.

The National Planning Commission (NPC, 2012) identifies the following network industries: Information and Communication Technology services, power generation, electricity grid, gas, petroleum and water pipelines, ports, and railway lines. Van Basten (2007) lists telecommunications, broadcasting, electricity, gas, railways, and sewerage, but refers to them as utilities. Steyn (2012) referred to the same networks as infrastructure industries. Although airports do not generally meet the suggested definition, the regulation of the airport industry in South Africa has been included as ACSA is treated as a network of airports, that is, they are regulated collectively and not as single, individual airports, what some of the participants in the study referred to as a "single or one till". Table 6 shows a

consolidated list of network industries compiled based on the characterisation of network industries provided by Van Basten (2007), Steyn (2012) and the NPC (2012).

Table 6

List of Network Industries

Broad Category	Industries			
Electronic communications/ICTs	Telecommunications	Broadcasting		
Energy	Electricity	Gas and petroleum pipelines		
Transport	Aviation	Ports	Railways	Roads
Water and sanitation	Water pipelines	Sewerage		

*Note. O*wn work

The neo-classical theory of unfettered markets and competitive pricing, where a monopoly would price like a competitive firm, has not been realised. Goodwin et al. (2014), for instance, have posited that there is no pure market economy, citing the example of the United States, the most advanced capitalist economy in the world, where the private sphere constitutes only 58% of the economy, and the remainder is shared between the core (family and community) and the government spheres. Even in the market sphere, perfect competition, which is one of the conditions for economic efficiency, has not been realised. The conditions for perfect competition have not been fulfilled, and monopolies and oligopolies have continued to exist across different industries (Goodwin et al., 2014).

Monopolies and oligopolies have been mentioned by scholars as reasons for state regulation (Hauge & Sappington, 2010). In particular, natural monopolies exist where it can be justified that a single firm can produce and provide services efficiently than multiple firms

in the industry (Gomez-Ibanez, 2003). In such a situation, a monopoly would be expected to produce more of a product, taking advantage of its scale while lowering the cost of production and consequently pricing. However, against the ideal, the opposite has happened wherein the monopolies have under produced while at the same time increasing prices that they charge.

Oligopolies have also emerged in privatised and liberalised markets. The OECD (2020b) defined an oligopoly as a market with fewer dominant players. Oligopolies impose barriers to entry and often result in gaming where the market players, especially the dominant ones, avoid price wars among each other (Estrin & Laidler, 1995, p. 239, 247; Pindyck & Rubenfeld, 2018).[12] The Herfindahl–Hirschman Index is one of the tools that are used in economics to measure concentration, calculated by adding the squares of the market shares in an industry. It measures concentration from zero to 10 000 as follows: 0-1 500 (competitive), 1 500 – 2 500 (moderately competitive) and above 2 500 (not competitive) (United States Department of Justice, n.d.).

Oligopoly markets have also been characterised by network externalities. Broadly defined, network externalities happen when "a market outcome affects other parties such as the buyers and sellers, creating side effects" (Mfungahema, 2012, p. 4). Liebowitz and Margolis (1995, p.1) have also defined network externalities or network effect as "a change in the benefit, or surplus, that the agent derives from a good when the number of other agents consuming the same good changes". This study adopts the definition of network externalities suggested by Liebowitz and Margolis. Network externalities or network effect are common in

[12] The Competition Commission South Africa (2019; 2020) classified the South African telecommunications market as a duopoly, given the significant dominance of two Mobile Network Operators (MNOs), MTN and Vodacom. As such the Competition Commission recommended that ICASA's regulations including licensing should seek to create a level competition environment. This is included using the radio frequency spectrum as a tool to enable competitiveness in the industry.

the telecommunications industry (due to the existence of multiple firms) when users subscribe to a particular network ostensibly to communicate with others already subscribed to the same network. This gives advantage to the bigger firms while disadvantaging smaller firms in an industry and can also have negative implications for competition and pricing.

Economists have also considered and studied the impact of what is called first mover advantage on industry competitiveness. First mover advantage is also worth considering in industries with multiple firms. The Corporate Finance Institute (n.d.) has defined the first mover advantage as follows:

> The first mover advantage refers to the advantage gained by a company that first introduces a product or service to the market. The first-mover advantage enables a company to establish strong brand recognition and product/service loyalty before other entrants to the market.

The CFI further highlights the following benefits associated with the first mover advantage, that is positioning of one's product or service as an industry standard, control of resources such as location in strategic areas that will not be available for the new, smaller firms, and can benefit from high switching costs. Switching costs, as defined by Avgeropoulos and Summuit-Bonnici (n.d.), are:

> …costs that consumers face in order to change between substitute products. Switching costs arise from all impacts that a substitute can have on the buyer's value chain. They can be the result of investment by the buyer in high-cost specialised equipment, investment in learning how to operate such equipment, or even the result of product specifications, which tie the buyer to particular inputs.

The OECD (2003, p. 1) defined price regulation as a "policy of setting prices by a government agency, legal statute or regulatory authority. Under this policy, minimum and/or maximum prices may be set". Price regulation in network industries in South Africa, as in

other jurisdictions, has therefore been justified on normative grounds to achieve public interest goals such as efficiency of the production of infrastructure and services as well as to ensure affordability of services that are charged by the regulated entities to the consumers and businesses. Williamson and Yogita (2000) identified two challenges associated with the behaviour and performance of the network industries that have justified price regulation. These were "high costs due to inefficiency (productive inefficiency) and reduced supply and excessive pricing (allocative inefficiency)". Price regulation therefore is a means to address these challenges by enhancing allocative and productive efficiencies in the regulated industries. This study was specifically concerned with approaches to improve production efficiency.

2.2 Price Regulation versus Economic Regulation

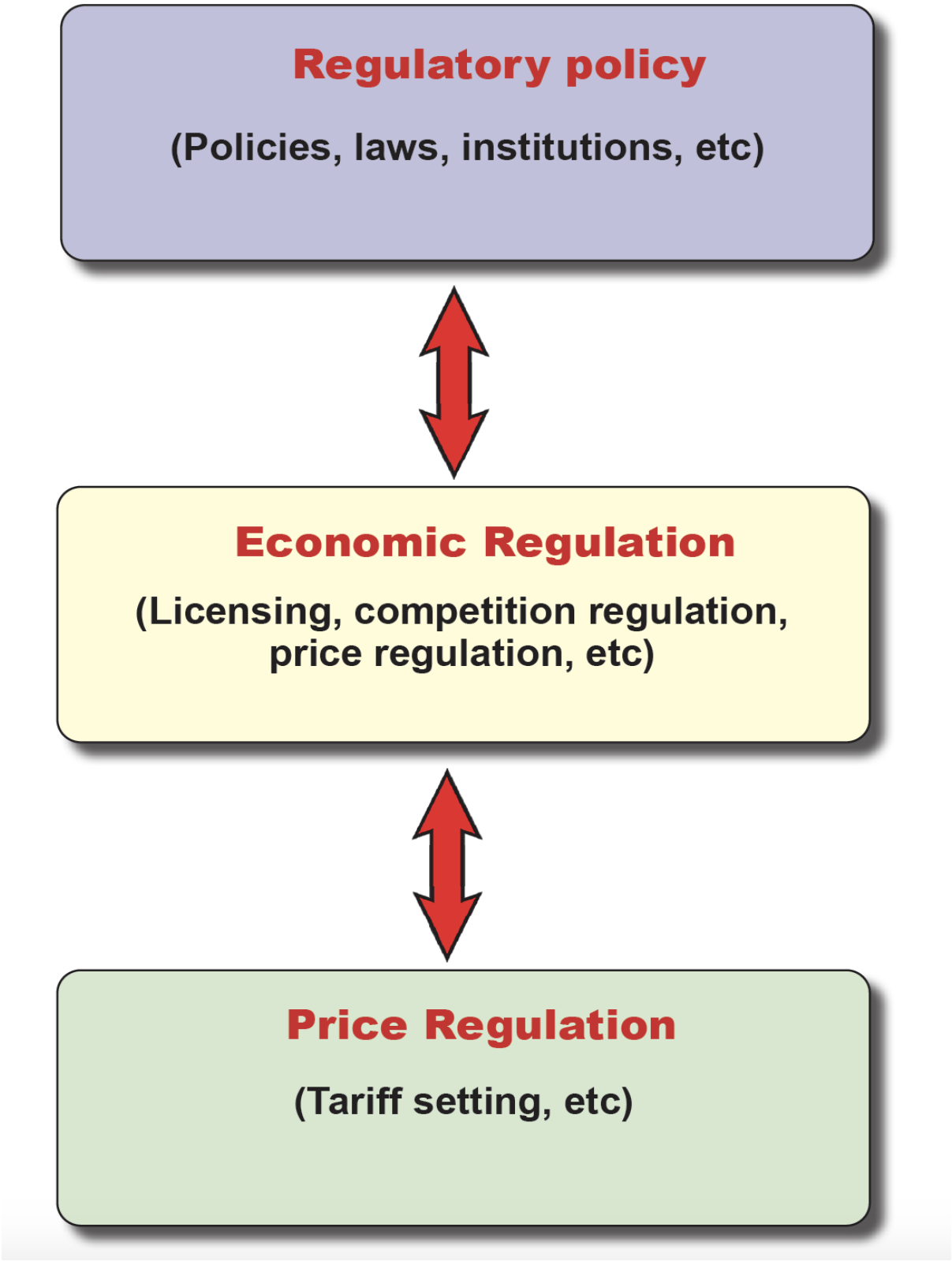
The assessment of production costs to inform the determination of tariffs usually takes a form of what is broadly called price regulation. Both public policy and academic scholarship have generally associated price regulation with the field of economics, hence the notion of economic regulation. This can be attributed to price regulation emerging as part of the regulatory state that amongst others sought to address economic challenges faced by countries in the developed world following the Second World War. The regulatory state in many jurisdictions was introduced amidst macro-economic uncertainties and dwindling fiscal resources to support innovations and the expansions of infrastructure and services (Bauer, 2013). The rise of the regulatory state also happened within the context of the separation of economics and politics within the neo-classical economic school that has dominated modern economics (Clark, 2016; Merlo, 2019). The separation of politics and economics generally removed from scholarship and public policy the necessary context to explain complexity.

According to the definition of price regulation as discussed above, it can be treated as a subset of economic regulation that entails correcting market structures and failures through

interventions of a state “to guide or control behaviour of firms in terms of their decisions in respect of pricing, investment, quality and coverage of service, as well as the terms on which access is provided to other firms, including competitors” (Decker, 2015, p. 3). Figure 4 provides a conceptual framework to explain the relationship between economic regulation and price regulation, which was necessary to contextualise the focus and scope of this study. It highlights how price regulation has been associated more with economics than politics, giving rise to the objective of this study, which focused on the equally important political dimension of efficiency in price regulation.

Figure 4

Conception of Price Regulation in Economic Regulation



Note. Own work

As indicated in the diagram, price regulation is largely associated with the determination of tariffs while economic regulation includes a set of other remedies such as licensing and competition regulation. But as shown in the diagram, economic regulation and consequently price regulation flow from the regulatory policy – which involves a significant role of politics in the design and the implementation of rules in each industry. While the concept of economic regulation has grown and is common in literature, the political dimension of regulation has not received similar attention hence the focus of this study.

In practice, price regulation is generally associated with the mandate and responsibilities of the independent regulators to determine the tariffs that are charged by the regulated entities. According to Anderson (2011, p. 55), governments and legislatures delegated complex issues that required dedicated attention and time to the extent of granting administrative agencies or regulators significant powers to regulate network industries. Delegations by the governments to the regulators happen as legislatures and governments did not have the capacity to regulate specialised areas and ensure independent regulation.

This has resulted in the emergence of what Shapiro and Borie-Holtz (2013) referred to as the unelected fourth branch of the state (others are legislative, executive and judiciary), as regulators were required to exercise their own discretion when determining the tariffs that are charged by the regulated entities. Such a focus on the regulatory institutions had also been necessitated by concerns about interference of the politicians and the regulated entities in the affairs of the regulators through, amongst others, the capture of officials of the regulators by politicians and regulated entities (Johannsen, 2003).

2.3 The Efficiency Challenge in Network Industries Regulation

While liberalisation and privatisation were introduced to open markets to new players in various industries, especially telecommunications, cost inefficiencies and high prices have persisted (Cseres, 2008, p. 77; Prosser, 2006). Literature indicates that while many countries

adopted the regulatory state in the 1990s, performance has remained a challenge although this differs from one country to another as well as between the different network industries (Kirkpatrick & Parker, 2004; Lodge & Wegrich, 2009). Alemu (2011) posited that further interventions are needed to address the post-liberalisation challenges related to inefficiencies in price regulation. As mentioned above, similar trends of regulatory failure have been observed in the monopoly industries. It is because of the recognised failure of regulation to achieve the expected public interest outcomes such as efficiency that the call for further reforms has gained momentum (Baldwin, 2010).

The US Treasury (n.d.) has also associated efficiency with the costs of production, that is, the costs incurred by the firms as they provide infrastructure and services. Efficiency related to production happens when infrastructure is produced at reasonable cost. The opposite is inefficiency when production results or is based on unreasonable or higher costs. According to Bisbey (2020), efficiency in infrastructure regulation has two dimensions, namely how infrastructure is produced as well as how services are allocated. Following the same logic, Kemp et al. (2014) have identified production efficiency (infrastructure costs) and allocative efficiency (affordable prices) as common problems associated with cost assessment and pricing in network industries. This study explored how political decisions in the form of the political ideology of the developmental state influenced the costs of infrastructure in the different industries.

2.4 Towards a Perspective on the Influence of the Political Ideology of the Developmental State

2.4.1 Regulation Beyond Capture and the Agency Problem

A significant cohort of academic scholarship and public policy literature have placed emphasis on the principal- agent problem as one of the main reasons for the failure of

regulation. The *Economic Times of India Online* (n.d.) has defined the principal-agent problem as follows:

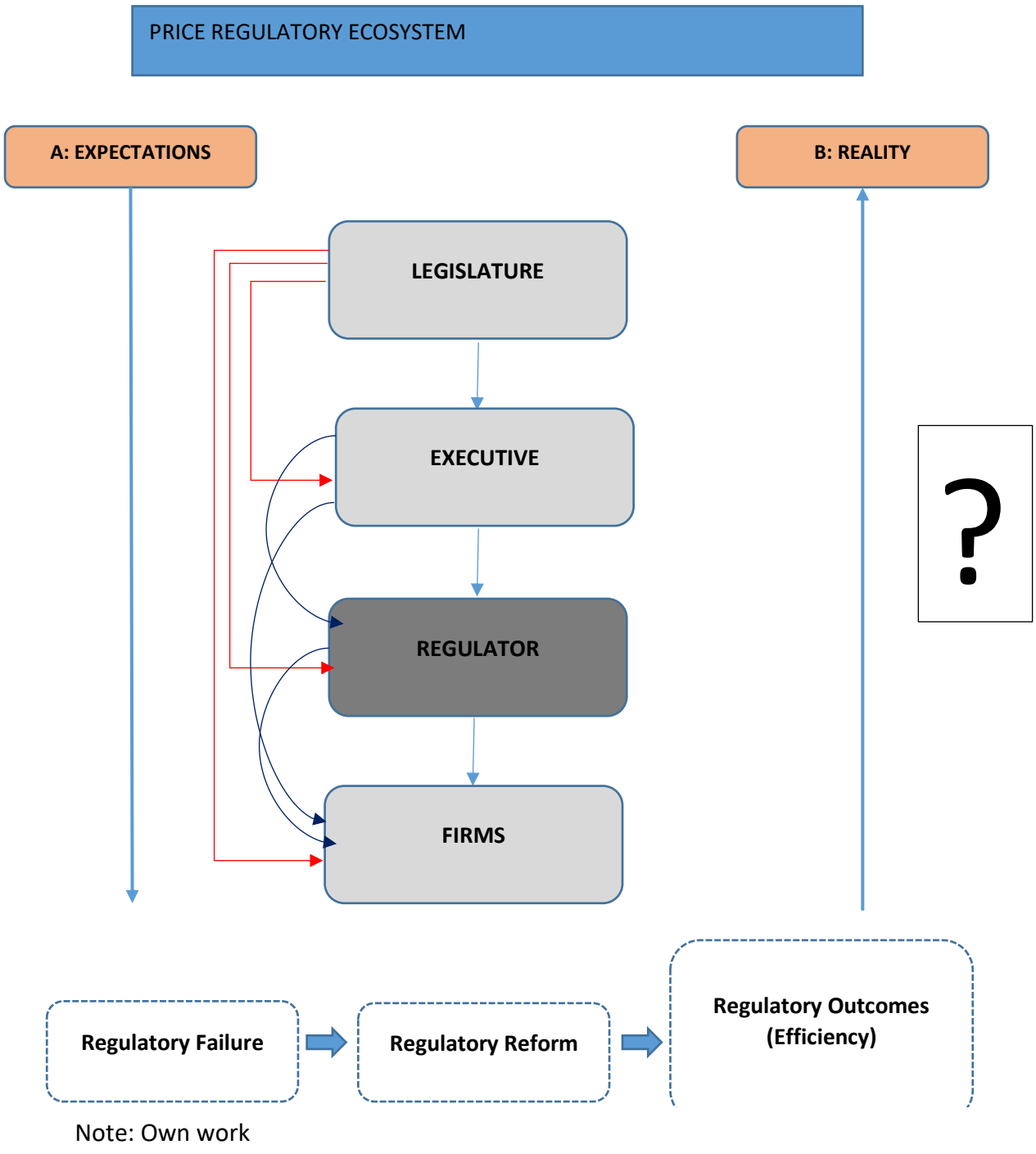
> The principal-agent problem arises when one party (the agent) agrees to work in favour of another (principal) in return for some incentives. Such an agreement may incur huge costs for the agent, thereby leading to the problem of moral hazard and conflict of interest. Owing to the costs incurred, the agent might begin to pursue his own agenda and ignore the best interest of the principal, thereby causing the principal-agent problem to occur.

Both the regulatory capture theories and the principal-agent problem, though offering insights into understanding behaviour in the regulatory state, they do not offer a full explanation of everything that happens in regulation. For instance, they do not explain the role and influence of political ideology in the functioning of the regulatory state which is the focus of this study. Positive theories have generally confined the discourse to the capture of the regulators by private interests.

Figure 5 shows the different scenarios of studying the regulatory state. These include the principal-agent problem approach which has been associated with positive or capture theories as illustrated in area B on the right hand of the diagram. In this case, the principal-agent problem would arise when the regulator acts against the interest of the principal being the government although in reality the situation is far more complicated as regulators and policy makers are engaged in collaborative than hierarchical forms of relationships. At the same time, literature points to re-emergence of studies concerned with normative relationships as depicted in A on the left-hand side of the diagram. This reflects a normative expectation where politicians and the regulated entities do not merely exist to capture regulators but have their roles and responsibilities within the regulatory state.

Figure 5

A Model for Principal-Agent Analysis



Note: Own work

2.4.2 The Developmental State Dimension

Building on the earlier discussion in Chapter 1 on the political and economic factors that shaped the regulatory state, this sub- section enhances the discussion by refocusing on the nature of the South African developmental state. A reflection on the nature of what has come to be known as a developmental state is necessary given the many variations of the developmental state. Most of literature has used the experience of the East Asian countries to generalise thereby denying a broader reflection on how the pursuit of this ideology eventually turned out in many other jurisdictions including South Africa.

2.4.2.1 Defining a Developmental State. Scholars have emphasised, as a common feature of the developmental state, the role of the state as it intervenes in the economy, including the network industries to drive industrialisation and economic growth. The Education Training Unit (n.d.) has defined a developmental state by emphasising the role of the state in the economy with the end game to achieve social development as follows: "A developmental state plays an active role in guiding economic development and using the resources of the country to meet the needs of the people. A developmental state tries to balance economic growth and social development" (p.1).

Leftwich (1995) also associated a developmental state with the role of the state in creating an enabling environment for economic transactions such as through regulation, and when it also provided services such as electricity. Leftwich explained the inherent characteristics of a developmental state as follows:

> The political purposes and institutional structures of developmental states have been developmentally driven, while their developmental objectives have been politically driven. In short, fundamentally political factors have always shaped the thrust and pace of their developmental strategies through the structures of the state. Thus, developmental states may be defined as states whose politics have concentrated

> sufficient power, autonomy and capacity at the centre to shape, pursue and encourage the achievement of explicit developmental objectives, whether by establishing and promoting the conditions of economic growth, or by organising it directly, or a varying combination of both (p. 401).

Mazzucato (2015) has taken the debate further by arguing that the role of the state in the economy and society generally cannot be limited to addressing market failures, there is a compelling rationale for the state co-existing with the private sector to invest and drive innovation across the different industries. These include cooperation between the state and the private sector in research and development. According to Mazzucato:

> What we have instead is a case for a targeted, proactive, entrepreneurial State, one able to take risks and create a highly networked system of actors that harness the best of the private sector for the national good over a medium- to long-term horizon. It is the state acting as a lead investor and catalyst which sparks the network to act and spread knowledge, not just facilitator, of the knowledge economy. (p. 27)

Mazzucato has called for a rethink of how the state and the private sector can participate and even collaborate in the economy and other endeavours. Such a collaborative approach can be underpinned by the knowledge that both the state and the markets can fail, and data is needed on a continuous basis to explain how both can contribute towards the attainment of the goals of public policy. Mazzucato further posited that the state had often been blamed for failing, justifying calls for its reduced role in the economy, without due regard of the fact that it has often failed while doing what the private sector had not done, such as supporting public goods.

Below, the East Asian experience is highlighted as a precursor to discussing the South African approach.

2.4.2.2 International experience. The practice of a developmental state is generally associated with the East Asian States (South Korea, Taiwan, Singapore, Malaysia and Thailand) wherein governments intervened to enhance economic growth. The developmental state scholarship has thus placed emphasis on the capacity of the state to drive economic growth within varying contexts. As argued by Stubbs (2011), in the East Asian countries, the developmental state was significantly shaped by context that was different to what confronts South Africa today. This was a period of significant external political upheavals amidst the Cold War that has pitted ideological foes in the capitalistic and communistic worlds. Governments in East Asia introduced rapid state-led industrialisation and economic growth as bulwark to the rise of communism in countries such as Vietnam (Leftwich, 1995, Stubbs, 2011, Stubbs, 2017). The developmental states in East Asia also received significant financial support from the developed world especially the United States which was at the centre of the global campaign against the growth of communism across the world in competition with the Soviet Union. The political context and the role of external players is perhaps the first distinguishing factor in the development of the developmental state in East Asia and South Africa.

The other important consideration deals with the role of the bureaucracy. At the institutional level, there was a significant focus on the capacity of the bureaucracies in the political administration. Politicians in East Asia relied on the capacity of the bureaucracy drawn from high ranking local and international schools (Ng, 2008). Skilled individuals were recruited to drive the objective of the developmental state to create new green field industries with the state exiting some of the industries as the economies were transformed into consumer-oriented manufacturing and retail sectors boosting the rise of a strong private

sector while state-owned companies continued in the intermediary or enabling industries such as electricity. This study explored more or less similar issues in relation to the configuration of the state and its role in the economy, especially in the three network industries. Governments' drive to create new industries constitute another distinguishing factor of the different approaches to the developmental state. In Japan and the other East Asian countries, the pursuit of the developmental state culminated in a thriving capitalistic economy, perhaps closer to the charge of neo-liberalism. The rise of capitalism in the region was achieved as a deliberate goal of the developmental state which can explain the variation of the South African context which is oriented towards redistribution.

2.4.2.3 South African context. In South Africa, the study explored the internal redistributive concerns anchored by the political ideology that favoured a state-led trajectory. The South African government has purported to pursue a developmental state approach as set out in the National Development Plan. The NPC (2012) has characterised a developmental state as follows:

> A developmental state brings about rapid and sustainable transformation in a country's economic and/or social conditions through active, intensive and effective intervention in structural causes of the economic or social underdevelopment. Developmental states are active. They do not simple produce regulations and legislation. They constantly strive to improve the quality of what they do by building their own capacity and learning from experience. They also recognise the importance of building constructive relations with all sectors of society, while insulating themselves from capture by sectional interests. (p. 409)

As in the East Asian environment, the NPC has argued that the developmental state should be supported by a capable state that includes addressing the "political – administrative" interface largely focused on the bureaucracy in the government departments and did not include the

role of the regulators as part of this interregnum. The NDP doesn't deal with the relationship between the regulatory state and the developmental state. As such, concerns about the unhealthy political-administrative interface has been limited to the relationship between the Ministers and the bureaucracy in the government departments and does not extend to relations between the politicians and the regulatory institutions. This is beside the fact that the NPC also recommended a "far reaching review of current infrastructure regulators to clarify roles, strengthen accountability, update legislation and regulations, and reform institutional design". There is therefore a dearth of information and data on political-regulator interface.

Features of the developmental state approach in South Africa's network industries are, however, evident given the significant involvement of the state in the economy wherein politicians are responsible for policy making, establishment of the regulatory agencies and their delegation to regulate tariffs, among other activities, and state companies overseen by politicians provide services in monopoly industries such as electricity and airport. This study focused on how the pursuit of such responsibilities within the South African state influenced the role of the regulatory state. Such an inquiry was deemed necessary considering literature that indicates that the role of government was not the only condition for the success of a developmental state. Put differently, the success or failure of a developmental state was not given but a result of specific set of conditions being explored in this study, at least in the case of South Africa.

The following paragraph highlights selected literature indicating that although motivated on normative grounds to drive liberalisation, the role of the state in the economy is not assured to achieve the required results. State failure is common and growing in various jurisdictions while there are also success stories.

2.4.2.4 Limitations of the State Role in the Economy. The pursuit of the developmental state ideology has not been immune to failure to achieve the stated objectives to drive economic growth. Stubbs (2011), for example, has pointed out that competency was a necessary ingredient for the state to direct industrial policy and control key sectors of the economy such as energy and transport. Such an emphasis on competency has always been necessary as delivering quality and affordable services was a goal of the various developmental state in the world. While generally the East Asian model was hailed as a general success, modern literature indicate challenges that have continued to characterise the role of government in the economy. According to *The Economist* (2012), government interventions through state-owned companies were generally failing in various countries:

> Studies suggest that productivity decreases with every step away from 100% private to 100% state owned. An OECD paper in 2005 noted that the total factor productivity of private companies is twice that of state companies. And the study by McKinsey Global Institute in the same year found companies in which the state holds a minority stake are more productive than wholly state-owned ones. (para.75)

In the South African context, similar concerns have been expressed about the performance of the regulated industries, in particular. The NPC (2012, p. 162) highlighted that:

> After more than 15 years of sector regulation, it is fitting to analyse the effectiveness of these regulators. Although the regulators have succeeded in issuing licences, developing pricing methods and establishing technical and service standards, they have not achieved the positive outcomes initially envisaged. Based on the performance of ICT, electricity and port sectors, South Africa is slipping down behind international benchmark rankings. The reliability of electricity supply has deteriorated and prices that were previously below economically viable levels are now climbing at rates that consumers are unable to absorb. Communications quality, speed and cost are

significantly worse in South Africa than comparable nations, with similar situation in rail and port performance.

The conclusion mentioned in the NDP highlights specific challenges facing South Africa. A critical question is whether such challenges can be associated with the regulatory state or the developmental state, or the combination of the two, is the basis of this study.

As suggested by Gupta and Briscoe (2020), while institutional analysis has grown over the years, there is no single outcome in different environments and contexts hence studies continue to explain behaviour and performance in each setting.

2.5 Improving Efficiency in Regulation

This section reviews literature on various approaches to improve efficiency in price regulation, identifying opportunities and limitations in the available literature as well as identifying the implications for the South African regulatory state. Over the years, scholars have grappled with approaches to mitigate inefficiency and improve efficiency in regulation (OECD, n.d.). Given the broader concern of the study, which includes the role of politicians, the following sub-sections explore and review literature on approaches to efficiency in price regulation beyond the responsibilities of the regulators.

2.5.1 Credible Commitment and Regulatory Policy

Over the years, credible commitment has emerged as a significant feature of good regulation in many jurisdictions, initially based on establishing and delegating functions to technocratic regulatory agencies and the rise of a constitutional regulatory state (Christensen, 2010). Since the rise of the constitutional regulatory state, efforts to promote credible commitment have emerged across the world, especially in the OECD countries. Achieving the require results of price regulation is not a once-off intervention but a continuous undertaking, hence the need to regularly review approaches to improve credible commitment in the industries and countries.

Attempts to introduce a systematic approach to regulatory reform, especially in the OECD countries, have given rise to what is called "regulatory policy", an overarching governmental strategy to use regulation to promote social and economic good for the citizens (OECD, 2016a). Regulatory policy can thus be construed as an expression of regulatory governance, that is, how regulation is governed in a particular environment to achieve outcomes through the use of available governance tools such as regulations laws.

To effect regulatory policy, the OECD (2012) recommended a range of critical enablers that need to be considered in its development. These include an explicit policy statement on regulatory quality, emphasis on communication, consultation and engagement, institutional responsibility, and effective regulatory oversight use of evidence-based approaches such as RIA, risk considerations in regulation, administrative and judicial review of regulations (OECD, 2012).

Box 4 provides an overview of the adoption of regulatory policy in Peru sourced from the OECD, and presented here as a case study of emerging practices in developing countries.[13]

Box 4

Overview of Regulatory Policy in Peru

As regulatory reform gains momentum in developing countries, the OECD recently assisted Peru, a developing country, to develop a framework for regulatory quality with the introduction of a regulatory policy for the country. The project was taken amidst the need to improve Peru's regulatory performance based on what the OECD calls an international best practice on regulatory policy. The process culminated in the publication of the final report in 2016. Key focus areas included: policies, institutions and tools used by the government to design, implement and enforce high quality regulation. The exercise covered a cross section of policy and regulatory issues, with economic regulation as one of the key areas of focus. The report concludes that while Peru has a stable macro-economic environment and has experienced significant growth, future growth was likely to be constrained by poor regulation which amongst others manifests through the lack of whole

[13] South Africa is an observer member at the OECD which allows benchmarking on how practices in South Africa compare to those in the OECD countries.

of government regulatory policy even though elements of policy existed, lack of fully fledged mechanism of evaluating draft regulations, no baseline for measuring administrative burdens, economic regulators still depend on government for administrative and human resources matters and do not have systematic mechanism of evaluating draft regulations. As a result, this constrains the performance of the regulated industries. The methodology used included meetings and consultations with key stakeholders:

With regard to economic regulation, the study reached the following conclusions:

> Economic Regulators in Peru have a large degree of independence to exert budget and decision-making and display more developed practices of transparency and accountability than the central government organizations. Nevertheless, they still depend on the central government for several administrative and human resources matters, their independent status warrant more profound accountability practices, and they are yet to embrace a systemized process for the assessment of draft regulations.

The following recommendations were made:

> Government should issue a policy statement on regulatory policy with clear policy objectives and include this statement in a law or other binding legal document. This statement should contain all the specific strategies and tools for effectively managing the entire regulatory cycle: from ex-ante evaluation of draft regulation, including encouraging regulation based on evidence; public consultation and stakeholder engagement; administrative simplification and review of the stock of regulation, including ex-post evaluation; inspections and enforcement; and forward planning.

RIA also formed part of the recommendations:

> A number of elements should be considered as part of the adoption of regulatory impact assessment (RIA):
>
> The public for a minimum of 30 days should make all draft regulations and RIAs available for consultation.
>
> Consultation should be systematic at the early stages when policy options are being defined and impact assessment is being developed, and once a draft regulation and draft RIA has been produced.
>
> Public comments should also be made available and regulatory agencies should be accountable for their treatment.

On economic regulation, the OECD recommended as follow:

> Strengthen the governance of economic regulators by reviewing their links with central government to enhance their decision-making; by upgrading current policies to make regulators more accountable to the central government, to congress and to the general public; and by introducing a system of ex-ante assessment.

Note. From OECD (2016a)

There was no similar approach in South Africa at a time when literature indicates significant challenges related to how regulation is governed. While the National Development Plan mentions the need to enhance efficiency in price regulation, that has not been supported by a

comprehensive, transparent mechanism especially that deals with the united influence of politics where they occur. As in any intervention, the adoption of regulatory policy can be informed by a specific context and need.

2.5.2 Overcoming Rigidity in Political Institutions

As discussed above, the pursuit of the ideology of the developmental state can also fail when the normative concerns of the developmental state cannot achieve the expected results. As discussed in the foregoing, institutions in political environments have generally been associated with inertia and an inability to evolve faster as it becomes necessary thus contributing to failure to achieve public policy goals. There is therefore a need to also focus on how institutional inertia or rigidity can be identified and mitigated to enhance efficiency. There are still limited studies from South Africa on how institutional rigidity can be identified and mitigated.

Given such concerns about the rigidity of institutions, scholars have recommended approaches to regulation anchored around what is known as Future–Oriented and Adaptive Regulation. Future- Oriented and Adaptive Regulation is necessary to deal with, amongst other challenges, “political gridlocks” and “institutional inertia” that impedes the introduction of reforms (Bennear & Wiener, 2019, p.2). The shift towards future-oriented adaptive regulation depart from the need to deal with situations where regulations remain unchanged even when the circumstances change in favour of regulations that address specific issues and are adaptable when conditions change. Bennear and Wiener were of the view that adaptive regulation, implemented correctly, can accommodate emergencies, while at the same time, focused on planned adaptations, including periodic reviews of regulations.

The International Risk Governance Council (IRGC, 2015) on the other hand has posited that a move to future oriented adaptative regulation can bring about its own risks as it may lead to instability in the regulatory system including failure to mitigate concerns

associated with political uncertainties. For it to be effective, future oriented adaptive regulations require a planned commitment to periodic reviews based on monitoring and evaluation, which requires significant amount of data (International Governance Risk Council, 2015; McGray et al., 2010). A scheduled review of regulation can mitigate against possible shocks and instability.

Eggers et al. (2018, p.12) have recommended principles for adaptive regulation such as responsiveness through iterative approaches, prototyping and testing of new methods. While future oriented adaptive regulation offers a strong conceptual formulation to deal with gridlocks and inertia so common to the political governance including regulation there is scope for it to be interrogated in various settings to ensure that approaches are suitable for specific contexts and situations. Within the purview of the foregoing, Future-Oriented and Adaptive Regulation could be explored in the South African context in so far as it seeks to enable the resolution of specific policy concerns.

2.5.3 Regulatory Impact Analysis and its Limitations

Given the foregoing, political institutions have also been associated with huge costs. In addition to discourses around future oriented and adaptive regulation, there is also scope to explore the use of Regulatory Impact Analysis to improve the efficiency of the processes and the costs of regulation. Regulatory Impact Analysis (RIA) has been used for years especially since the 1990s as a tool to measure the cost and benefit of decisions. In the context of this study, RIA is engaged as a tool to ensure that processes and decisions are proportionate to the problems being address considering the influence of ideology. Put rhetorically, the study explores the use of RIA in the context of political ideology and politics generally.

Welch and Waddington (2005, p. 7) have defined RIA as, "a methodology for designing precise, targeted regulations that achieve legitimate policy aims with the minimum burden on those affected". At its most basic, RIA involves a cost-benefit analysis to identify

the least costly options of public policy. Various forms and iterations of RIA converge on the assessment of costs versus benefits of decisions. Although generally associated with reducing costs, scholars have pointed out that the RIA can also contribute towards attaining other goals of regulatory quality, such as accountability, transparency and consistency (World Bank, 2014; Coglianese, 2012).

But while RIA has dominated scholarship and public policy discourse for a considerable period, it has not produced similar results in countries where it has been implemented (Radaelli, 2016). This has been attributed to RIA being implemented within the context of each country, especially the prevailing political environment (Rodrigo, 2005).

For its proponents, RIA can contribute to improving the attainment of the goals of regulation while its opponents have dismissed cost-benefit analysis as having failed to achieve its initial promise of accurately quantifying costs and benefits (Harrington et al., 2009). RIA's weaknesses have been associated with how it is generally implemented instead of its suitability to improve regulatory quality. Criticisms against RIA have focused on the divide between the technical processes that have dominated its implementation and political decision making that has continued even with the introduction of RIA to improve decision making.

While RIA is a management tool to improve the quality of regulation, its use has also been associated closely with the bureaucracy in organisations rather than with politicians, hence it is often treated as an apolitical technocratic intervention (Lodge & Wegrich, 2009). Some of its critics have argued that RIA is not realistic in a political environment where there is limited time, information, and capacity to implement rational processes (Dodero, n.d.). Box 5 presents a light framework for RIA as recommended by the United States Agency for International Development (USAID, 2011).

Box 5

Minimum Requirements for Light RIA

Political commitments to establish and operate an effective and self-sustaining RIA process;
A unit or group of regulatory reformers – preferably based in a central area of government – which oversees, comments and reports on the quality of regulatory proposals, before decisions about regulation are made;
Consistent criteria and rules employed to screen regulatory proposals;
The regulatory policy development process is transparent and includes consultation with stakeholders; and
A capacity building program is in place, involving preparation of guidelines, training of officials preparing RIA, and establishing monitoring, evaluation and reporting systems.

Note. From USAID (2011)

Peci and Sobral (2011), for instance, have posited, in the case of the adoption of RIA, in Brazil: "Contrary to previous studies in developing countries, the research reveals that strong organisational capacities are not a sufficient factor for successful diffusion of RIA, because political variables can influence divergence among agencies in future RIA practices."

As argued by Peci and Sobral (2011), the creation of the independent regulatory agencies and the adoption of RIA, significant as they have been in different jurisdictions, did not resolve all the issues and challenges associated with failure in network and other industries. The reform agenda and the search for solutions to implement RIA and other interventions to improve the quality of price regulation have therefore continued (Baldwin, 2010; Radaelli & Francesco, 2010). Rodrigo (2005, para. 1) has called for a paradigm shift from "regulatory management" to "forward-looking" attempts to improve the efficiency in regulation, among other objectives. This, according to the OECD (2008), involves processes through which regulations are conceived and made as well as their outcomes.

The OECD and other proponents of further regulatory reform have also emphasised the need to ensure that both procedural concerns and the objectives of regulation are met, which calls for a holistic view of regulation and regulatory reforms (Baldwin, 2010, p. 263-

264). Accordingly, the OECD (2000) has posited that implementing reforms without addressing the processes within which regulations are made and implemented will have the unintended consequence of replacing failed regulations with regulations that perpetuate failure. Rodrigo (2005) explained the significance and the nature of regulatory reform or better regulation as follows:

> To regulate better has become a crucial goal. Improving the quality of regulation has shifted in focus from identifying problem areas, advocating specific reforms, and eliminating burdensome regulations, to a broader reform agenda that includes adopting a range of explicit, overarching policies, disciplines and tools. (para. 3)

Cloete and de Coning (2011) have cautioned against the outright rejection of RIA on the grounds of the time and resources needed to undertake it as well as its technocratic nature in an environment that has continued to be dominated by politics, arguing that RIA can still be implemented in different situations provided within the context of each industry and country. Key to this is the extent to which RIA is integrated with the political processes involving the confluence of the regulatory state and the developmental state. The confluence of the regulatory state and the developmental state are discussed in some detail in Chapter 4 of this study.

2.5.4 Evidence and Regulation in the age of Big Data Analytics

This sub-section discusses the adoption and usage of digital data analytics as part of the shift towards an evidence-based approach to policy and regulation. Modern regulation happens in an environment that is significantly shaped by the availability and use of digital technologies. Literature on the application of big data and data analytics is reviewed in the following paragraphs as part of exploring approaches to an enhance evidence-based approach to regulation in the South African context.

Renn and Klinke (2010) pointed to the risks associated with future-oriented adaptive regulation, mainly how it can result in policy or regulatory instability, thus the adoption of such approaches should be enabled by data and evidence. There is a lack of evidence generally calling for further studies to generate insights on how the future-oriented and adaptive approach to regulation can be enabled by technological innovations. This is of necessity given that future-oriented and adaptive regulation can also be necessitated by the fast-changing market environments, partly occasioned by rapid advances in digital technologies, which heighten complexity in business processes and approaches to regulation (Bauer, 2014). Uncertainties occasioned by future-oriented adaptive regulation in such environments can be mitigated by the uptake and usage of digital technologies with the advent of big data analytics already impacting on public policy and regulation. According to IBM (2020), big data analytics is defined "as the use of advanced analytic techniques against very large, diverse data sets that include structured, semi-structured, and unstructured data, from different sources, and in different sizes from terabytes to zettabytes".

While big data analytics have been associated with the business sector, recently the uptake and usage in the public sector have been growing, enabling engagements on opinions, values, and judgements of the range of relevant stakeholders (Tsoukias et al., 2013). In public policy and regulation, the uptake and usage of new digital technologies has ushered in what is called "policy analytics", essentially the uptake and usage of such technological innovations in public policy, that is generating insights from data to inform policy making, implementation and evaluation (Longo & McNutt, 2018). The use of digital technologies has therefore revolutionised the policy value chain and policy analysis in particular, which until recently was concerned with "providing scope and precision to the definition of policy problems, collecting analysing evidence, supporting decision making and objectively

overseeing the evaluation of how effective policy interventions are" (Longo & McNutt, 2018, p. 367).

According to Fichera (2016), "data analytics inspired by the expanded possibilities of big data can help organisations in both public and private sectors to make better, quicker, and more efficient decisions based on evidence and insights". This shift towards efficient decision making will be made possible by the ability of organisations and individuals to "examine large amounts of data to uncover hidden patterns, correlations and other insights" (SAS, 2020). The advent and uptake of big data and data analytics can contribute to the quality of the supervision of the regulated firms, as regulators will easily access information to inform their decisions (Financial Stability Board, 2020). This way of applying data, and given the focus of this study, can provide insights into political decisions if data is integrated into the full value chain of relations and transactions among the three actors in the regulatory state.

The financial sector provides an example of the meaningful use of data analytics, with regulators having adopted what is called Suptech, a form of data-enabled technological innovations to oversee the industry and enforce compliance (FNA, 2020). Suptech enables regulators to implement effective monitoring and access to information that they need to supervise the regulated firms. As one of its advantages, Suptech enables regulators to proactively predict trends instead of "looking backward" even as it relies on historical and available data. At the same time, the regulated financial institutions have integrated Regtech[14] into their operations, which enables compliance with the rules (Deloitte, 2020).

[14] According to Ernst and Young (2020), Regtech is not to be confused with Fintech, which is more concerned with the operations of banks as they provide services to their clients.

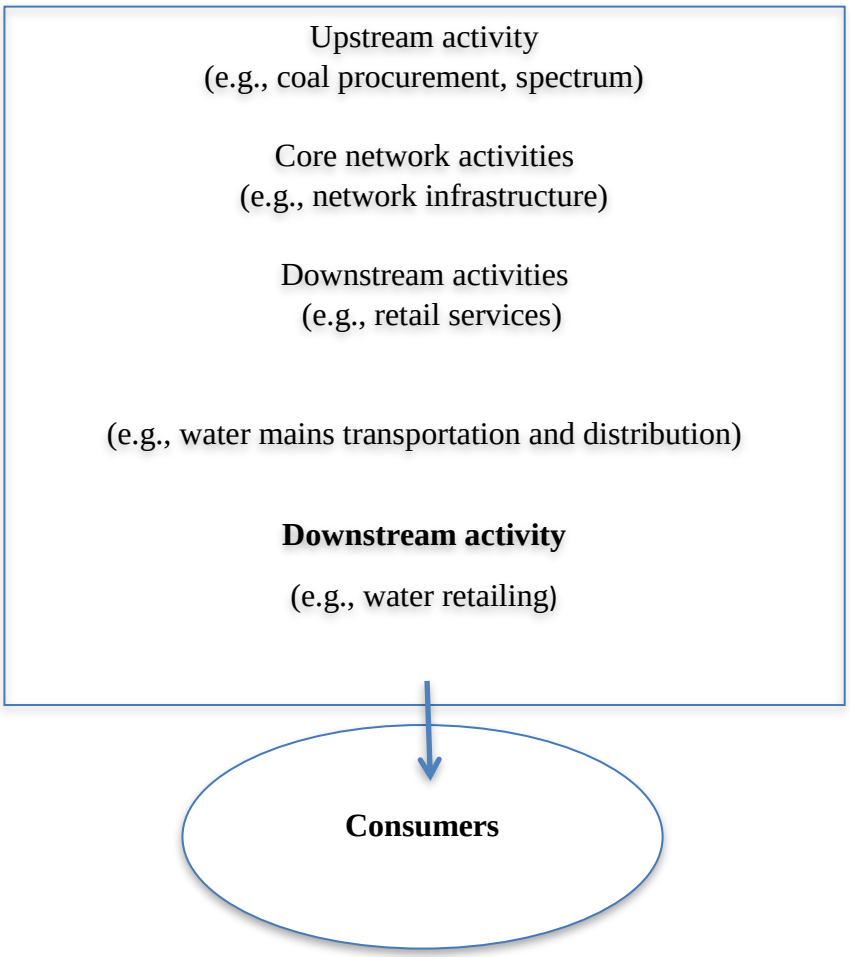
SupTech and RegTech deal with monitoring by the regulators and compliance reporting by the regulated firms, respectively, which has enhanced accountability and transparency in the financial sector (Deloitte, 2020). As businesses expand and introduce new digital-enabled products, so will the innovations around Regtech. At the same time, this will influence the need for regulators to improve their capabilities to regulate better in a changing market and technological environment (Bostoen, 2019). While the embrace of big data analytics has grown over the years, especially in the financially sector, uptake and usage in other industries remains lagging and would need to be guided by further studies that propose commensurate interventions to address specific policy and regulatory concerns.

2.6 The Role of the Regulatory Agencies

Traditionally, approaches to achieve efficiency in network industries occur at different stages in the value chain comprising upstream at the infrastructure level, core networks that involve transmission and connecting infrastructure, and downstream activities where services are provided to the end users depending on the market problem to be addressed (Decker, 2015). The different market segments where regulation can be introduced are illustrated in Figure 6.

Figure 6

Regulated Market Segments in Network Industries



Note. From Decker (2015, p. 66)

In vertically integrated markets, where one firm provides all three services, regulatory interventions can occur throughout the value chain, depending on the regulatory problem to be addressed. In markets where a firm only provides wholesale services, regulation may happen at the upstream and core network services.

Over the years, regulators in the different industries, especially in the developed countries, have been concerned with ensuring that the costs of producing services are reasonable or obtained prudently. Common approaches used by the regulators are discussed in the following sections. This is for the purposes of explaining how the regulatory agencies

engage with the costs that emanate from political decision making especially the influence of the political ideology of the developmental state. This is significant as in regulatory practices, the costs of providing services are assessed at the level of the regulators and there is generally no mechanism to measure and attribute costs to politics and political ideology particularly.

Various regulatory cost management standards have been introduced across the three industries, namely, Rate of Return, Price Cap, and Long Run Incremental Costing (LRIC). The three approaches emphasise the analysis of the costs of providing infrastructure and services as the basis of determining the tariffs that are charged by the regulated entities. These standards, however, differ in the way that costs are allocated. For instance, LRIC is based on forward looking costs, which model an ideal efficient firm, while the rate of return is based on fully allocated costs, which consider all the costs of providing services even if the costs have been inefficiently obtained (Stork, 2012). Price cap focuses on fully allocated costs adjusted for productivity enhancement, which entails granting incentives for a company to reduce its costs as discussed below. Table 7 shows the approaches to the rate of return formula as used in various industries across the world.

Table 7

General Costs Elements in Network Industries

Item	Description
Operational costs	Operating expenses, which are the costs of items such as supplies, and labor
Depreciation	Annual depreciation expense, for wear, tear and obsolescence of plant.
Rate base*	The amount of capital or assets the utility dedicate(s) to providing its regulated services.
Weighted Average cost of capital (WACC)	Allowed rate of return which is the cost the utility incurs to finance its rate base, including both debt and equity.
Taxes	All taxes not counted as operating expenses and not directly charged to customers.

* The revenue required = operating costs + depreciation + rate asset base + WACC + taxes.

Note. From Jamison (2011, p. 6)

Calculating the Regulatory Asset Base or infrastructure costs is generally the most contentious issue in price regulation, yet it constitutes a significant measure of the prices to be charged in the rate of return and other cost-based approaches (Kahn, 1988).

Price cap regulation uses the price cap formula CPI-X, where Consumer Price Index (CPI) stands for the Consumer Price Index which represent the rate at which prices increase in a particular year, and X represents the productivity factor that measures a firm's productivity as determined from time to time by the regulator (Decker, 2015). Intven (2010, p. 17) defines the productivity factor as "an estimate of the operator's expected productivity increases over the relevant period which is determined and included in the multi-year pricing dispensation". Since CPI is given as it represents the inflation index of a particular year, it is the calculation of the productivity factor that has remained contentious in the implementation of price caps. For example, while the Regulatory Committee in the airport industry in South Africa uses the price cap formula, a document analysis does not explain how the productivity factor and related costs are calculated in practice in its Approach Document of the Regulating Committee.

As in the case of rate of return, disagreements on what constitutes efficiency, or the productive factor have dominated the discourse and assessment of the impact of regulation. It is because of the complexity involved that the setting of the productivity factor has usually involved extensive negotiations between the regulators and the regulated firms. Littlechild (2014), for example, has also pointed out that setting the X-factor of British Telecom in the 1980s involved extensive consultations and negotiations. Given the significance of calculating productivity in regulations, this study explores how the Regulating Committee in the airport industry calculates the X-factor.

The LRIC is a standard method used in telecommunications, especially in the regulation of the voice call termination rate. It is based on the estimation of an efficient firm when all costs are variable, which enables benchmarking with other jurisdictions. The two approaches to LRIC, namely, the bottom-up and top-down, and their advantages and disadvantages are presented in Table 8.

Table 8

Comparisons of Bottom-Up and Top-Up LRIC

	Bottom-up	Top-down
Pros	Can model cost that an efficient entrant would face	Incorporates actual costs
		Useful for testing results from bottom-up model
	Transparent – much of the information used is publicly available	May be faster and less costly to implement, but this depends on how well categories in the financial accounts match the data required
Cons	May optimise too much or omit costs	Include the firm's actual costs, and so likely to incorporate inefficiencies
	Modelling of operating expenditure is usually based on simple margins instead of real-world costs	Less transparent – confidentiality issues
		The parties may dispute the cost allocation rules used
	Data needed for the model may not exist	
		Data may exist in the required form
	The modelling process can be time-consuming and expensive	

Note. From Monson (2007, p. 6)

Various countries, including South Africa, have adopted an LRIC approach in the telecommunications industry as discussed in Chapter 4. While LRIC has generally been accepted by the regulated firms in telecommunications industry as will be shown in the findings chapters, more academic literature is needed to explain how political decisions, including the complex collaborative governance between the policy maker and the regulator,

has influenced efficiency in price regulation in the telecommunications industry. Table 9 compares approaches to fully allocated costs and long-run incremental costs. The Fully allocated costs method is associated with rate of return and the consumer price index formulae used in electricity and the airport industries. These are also discussed extensively in Chapter 4.

Table 9:

Comparison of Fully Allocated Costing and LRIC

Fully Allocated Costs	Long Run Incremental Costs
Allocates all costs (direct and indirect).	Estimates costs of rebuilding specific elements of the network using current technology.
Does not require a mark-up to recover a portion of joint and common costs.	The modelling approach assumes that operating and capital costs will be incurred efficiently.
The challenge is how to allocate joint and common costs to the specific classes of services.	Results are estimates that may or may not occur in practice.

Note. From Stork (2012)

Typical issues that arise in the engagement between the regulators and the regulated entities generally include disagreements on the activities of the regulated entities to be included in the costing and the attribution of the actual costs of providing a service (Kahn, 1988). While considerable focus has been on the engagements between the regulators and the regulated entities on the approach to costs and incentives, there is a compelling rationale to study how other forms of relations in the regulatory state have influenced regulatory performance with a focus on efficiency. There is generally limited literature on mechanisms to measure the costs arising from the influence of the political ideology of the developmental state. This study seeks to address this knowledge gap.

2.7 Relevance of Theories of Economic Regulation

2.7.1 The Need for Theory

The use of theory can enhance the rigour and robustness of social research as it helps identify critical issues to be studied. It provides philosophical underpinnings of a research initiative, thus establishing a solid methodological basis for the study. According to Bryman (2012), "Theory is important to the social researcher because it provides a backcloth and rationale for the research that is being conducted. It also provides a framework within which social phenomena can be understood and the research findings can be interpreted" (p. 20).

Estache and Wren-Lewis (2010) have cautioned developing countries against adopting theories and regulatory approaches from the developed world without considering the context within which regulation will occur. They argued that the limited research tailored to the situation, especially political contexts in developing countries, is one of the reasons behind regulatory failures in those countries. Therefore, developing countries need to engage with the theories discussed in developed countries while, at the same time, being guided by their local conditions. This approach is in line with what Dubash and Morgan (2013) call the re-characterisation of the theories of the regulatory state to consider developments and realities in the developing world.

An interdisciplinary approach was considered relevant to explain the conceptual and theoretical framework of the study. This subsection, therefore, continues with a discourse on the integrated approach to characterise price regulation as an ongoing process of interactions involving disciplines that shape the rules through which regulation can be understood and studied. Kickert et al. (1997) highlight the significance of interdependency in a network environment involving various actors:

> Interdependency is the key word in the network approach. Actors in networks are interdependent because they cannot attain their goals by themselves but need the

> resources of other actors to do so. Dealing with public problems involves interactions between governmental services, quasi-governmental bodies and private sector organisations.

Interdependency is based on the distribution of resources over various actors, the goals they pursue and their perceptions of their resource dependencies. In this study, a discipline is defined by Menken and Keestra (2016, p.27) as:

> A field of science with a particular object of research and corresponding body of accumulated specialist knowledge. This knowledge is effectively organised by and expressed through theories, concepts, and assumptions inclusive of its discipline specific terminologies and technical language. Furthermore, a discipline has its own specific research methods and has an institutional manifestation.

Furthermore, and arising out of this definition, Menken and Keestra (2016) identify three disciplines: natural sciences, humanities, and social sciences, which have their own sub-disciplines. Politics, economics, and sociology, which are the focus of this study, fall within the social science group. History, which is another discipline under consideration in this study, is classified under Humanities. The four disciplines have been selected because regulation involves the allocation of resources (economics); the role of government in the distribution of resources (politics), the adoption and implementation of rules to enable the functioning of the regulatory state (sociology), and the evolution of the regulatory state over a period (history). Building on a framework developed by Repko et al. (2016, p.129), Table 10 sets out the conceptual framing of the three disciplines used in this study as they relate to their conception of reality, what each discipline studies and their application in this study.

Table 10

Interdisciplinary Conceptual Framework

Discipline	Conception of Reality	Phenomena	Application in This Study
Politics	Political actors seek to advance their interests as individuals or groups. Associated with rational choice in economics, but has grown to include a range of perspectives, including ideas and history in social behavior.	The functioning of government and its institutions.	In the review of literature, especially the various institutional theories associated with political science, such as historical institutionalism, discursive institutionalism.
Economics	Traditionally associated with the neo-classical perspective, a dominant economic paradigm, that sees the market as a self-regulating mechanism capable of self-correction. Acknowledges market failures resulting from monopolies, oligopolies and other externalities.	Studies the functioning of markets made of the core, dominated mainly by the private sector but includes family and government.	In the review and application of literature related to rational choice institutionalism and associated with how social behaviour is enabled by the rules.
Sociology	Institutions can influence political and economic behaviour and performance.	Studies the role and functioning of institutions (formal and informal rules) in politics and the economy.	In the review and application of literature associated with sociological institutionalism on the influence of institutional isomorphism in the regulatory state in each industry.
History	A phenomenon can be explained by understanding the trends and development leading up to it.	Studies people, events, movements of human civilisations past and present.	In the review and application of literature associated with path dependence or historical institutionalism in the evolution of the regulatory state.

Note. From Repko et al. (2016, p. 283)

According to Warwick University (n.d.), interdisciplinarity, which is the focus of this study, is about "combining of methods and insights of two or more academic disciplines into the pursuit of a common task, such as a research project. Interdisciplinarity is typically characterised by crossing traditional boundaries between academic disciplines or schools of thought to address new and emerging issues". Warwick University adds that interdisciplinarity is usually applied where "traditional disciplines are unable to address the problem". Integrating disciplines, as opposed to comparing them and their response to a problem or situation, is the central issue in interdisciplinarity.

It is the interplay among the various disciplines and their associated theoretical paradigms that makes regulation a complex system. Repko et al. (2016) have pointed to the significance of integrating disciplines, concluding that doing so can be achieved by drawing insights from the different disciplines based on their assumptions/perceptions of reality and their relevant theoretical paradigms. Below, in the following subsections, various approaches to price regulation are explored to provide an analytical framework for the study of regulation as an interdisciplinary pursuit. These are public interest theory, positive theories, political economy theory, and neo-institutionalism. The approach to the analysis of these paradigms is preceded by the discussion and review of literature covering the role of theory in regulation.

2.7.2 Public Interest Theory: Realistic or Wishful Thinking?

Public interest theory was relevant in this study as the three industries in South Africa are characterised by monopolies in the electricity and airport industries and an oligopoly in the telecommunications industry, a justification for price regulation. Besides contestations about whether public interest was attainable in practice or not, it has remained a significant part of regulatory scholarship (Christensen, 2010). Public interest itself is a broad concept that can be applied in different political and economic situations depending on the issues under consideration. Public interest can be associated with the rights of the citizens to access

certain rights and services, which Corruption Watch (2012) defines as "the general welfare of the public that warrants recognition and protection". In regulation, public interest has been associated with ensuring that "natural monopolies do not overcharge users, impose safety standards to prevent accidents such as fires or mass poisonings, regulate jobs to counter employer's monopsony power over the employee, regulate security issuances so investors are not cheated, and so on (Shleifer, 2005, p. 440).

Posner (1974) has attributed the birth of theories of economic regulation to a "generation of economists" prior to the 1960s, who had advocated for state-led industry regulation to promote public interest in response to market failure (p. 1). Since then, public interest theory has justified government intervention in markets to regulate monopolies and anti-competitive practices caused by market failures in liberalised industries (Shleifer, 2005). This school of thought holds that governments and their agencies are inherently inclined to act in public interest and resolve the failure of the markets to deliver public good. Shleifer (2005) posits that public interest theory is popular with socialists and other left-leaning politicians. In the developing country context, disparities between and within communities in access to infrastructure and services can justify redistributive policies (Dubash & Morgan, 2013).

While, according to Christensen (2010), public interest has remained relevant and significant as it addresses redistribution, among other goals, it still lacks methodological grounding, opening it to further criticisms by alternative theorists as discussed in the subsequent paragraphs. The search for a sound methodological perspective has become a critical concern for economists and political scientists as public interest goals have continued to be elusive, and difficult to achieve. This study explores further reasons for failure associated with the influence of politics on performance, necessitating a new methodological approach based on the exploration of multiple theories as discussed in the following sections.

2.7.3 Positive Theories

This section focuses on a raft of positive theories that emerged over the years associated with the neo-classical school's criticism of the public interest theory. As its central focus, the neoclassical theory holds that social behaviour is occasioned by utility maximisation by rational producers and consumers. Rational consumers and producers interact in a way that determines how goods are produced, distributed and consumed, based on the prevailing prices of inputs of finished goods (Pindyck & Rubinfeld, 2018). This free trade in assets ensures that the forces of demand and supply, another critical characteristic of the market economy, independently determine the value of an asset, which is then represented through the price.

Within the neoclassical school, rational choice theory has added to the criticism of public interest regulation. It has argued that notwithstanding the motivation of public interest theory to achieve public good, the theory itself has been challenged over the years by scholars who have argued that it has not achieved what it promised, leading to the birth of alternatives such as choice theories (Bliss & Intriligator, 1994). Choice theorists have argued that the public interest theory has achieved the opposite as regulation has been dominated and influenced by competing interests, including those of politicians and regulated entities (Christensen, 2010).

Although choice theories have traditionally been associated with economists, over the years they have also become common in explaining behaviour in political science with the emergence of public choice theory. Public choice scholars have postulated that politicians can also act as entrepreneurs who use their decision-making powers to maximise their electability instead of being custodians of public interest (Black et al., 2012; Mueller, 2003). Given this reality, concern has shifted from what politicians do to how they carry out the tasks, which deserves more attention (Black et al., 2012).

Coase is reputed to have been one of the scholars to challenge public interest theory, arguing that government regulation was not necessary to remedy perceived or actual problems of market failure as it was likely to impose higher costs than the market's own remedies or interventions through the courts (Coase, 1960). Coase further argued that there was a possibility of general regulations being enforced in cases where they were clearly inappropriate. This, according to Coase, is in contrast with the courts, which deal with specific issues or cases and do not impose generalised remedies. This argument was among the first salvos against what has come to be known as *ex-ante* regulation whereby regulators determine the rules that bind the regulated firms.

However, Coase's argument in favour of the courts has been challenged by Shleifer (2005), among others, who argued against the view that the courts can be involved in the adjudication of conflicts between the firms in an industry, suggesting, instead, that the courts were equally susceptible to being captured, and do not have the capacity to undertake complex regulatory tasks that involve setting the rules for the markets and approving tariffs in less competitive markets. Over time, as regulators set out the rules, they also develop technical skills that the courts do not have. In less competitive markets dominated by oligopolies, contractual agreements would favour more prominent firms or lead to collusion in setting prices at the expense of consumers, which has been one of the justifications for regulation (Shleifer, 2005).

Following the arguments advanced by Coase, Stigler (1971), another opponent of public interest theory, advanced the notion of regulatory capture to explain the relationship between the regulators and the regulated firms. Stigler also argued that regulatory neutrality was not possible because the state was susceptible to being captured by the regulated firms. Capture in this regard happens when the regulated firms attempt to use the powers of government to increase their profitability by using undue influence on the bureaucracy of

public institutions. Stigler further argued that other than advocating for policy interventions such as subsidies that can be shared among rivals, dominant firms would seek to control the state in ways that result in barriers to entry and refusal to deal with new firms, and anti-competitive price-fixing. To achieve this, the regulated firms would target the bureaucrats in regulatory agencies who place their own interests above those of the agency that they work for and influence them to act in the interest of the firms (Christensen, 2005). Such behaviour by the bureaucrats is generally explained through the principal-agent model, discussed in the following paragraphs.

Rao and Agrawal (2016) and Lodge et al. (2012) have argued that the institutional design and capacity of regulators imposes constraints such as the principal-agent problem, including information asymmetry in the regulatory value chain that involves various actors. This is possible when any of the actors in the value chain chooses to pursue interests other than those of the principals. Complexity in such relationships is further exacerbated by multiple principals and multiple agents in the regulatory environment, which lay the ground for excessive lobbying, collusion and capture (Marrelli & Pignataro, 2001).

Although still opposed to the notion of a benevolent state acting in the public interest, Posner (1974) disputed the argument about the bureaucrats' concern to maximise their own interests by acting in collusion with the regulated firms by saying that this is not enough to explain the behaviour and performance of economic regulation. Instead, Posner (1974) argued that the opposite, that is, bureaucrats carrying out their tasks diligently, was possible as they sought to maximise opportunities for future employment after their tenure at the regulated agencies. Peltzman (1989) also argued that the conclusions in choice theories were based on generalisations rather than thorough theoretical formulation.

While the initial scholars on alternative theories of regulation, among them Stigler, suggested that regulation should be abolished because of the existence of capture, Carpenter and Moss (2014) argued that the existence of capture was not a sufficient reason to stop regulation when considered together with the intended benefits of public interest regulation. Carpenter and Moss have instead called for further understanding of regulatory capture as it takes different forms and requires that one devises several ways to mitigate it. This view pointed to a limitation of the earlier views about doing away with public interest theory because of its particular limitations. Alongside this view, Clifton et al. (2013) posited that all theories had their pros and cons, and regulatory reform should integrate various theories where necessary in order to address complex problems. This study follows this logic by applying different theories relevant to the study informed by the research questions.

2.7.4 The Political Economy Theory and its Limitations

By virtue of its name, political economy theory already suggests some complex analytical model based on the interplay between politics and economics. This is particularly the case as the critique of the classical theory in this study in favour of a holistic approach does not equate to the exclusion of economics in price regulation. Political economy is thus another theory worth considering as it offers a broader perspective than the treatment of politics and economics as completely separate in the study of regulation. Throughout history, political scientists and economists have grappled with a preferred way of allocating scarce resources in society (Mueller, 2003). Over time, the evolution of debates around preferences resulted in the separation of politics and economics, especially with the rise of neoclassical economics in the late 1800s (Besley, 2007; Coporaso & Levnine, 1992).

Various scholars have, however, dismissed the separation of politics and economics as a complete fallacy, attributed to the rise of neoclassical economics, which removed complexity from day-to-day realities of societies (Serrat, 2013). Merlo (2019) also argued

that the separation of the two was merely ideological and not substantive, as they were inherently interlinked. According to Clark (2016), the separation of politics and economics resulted in the expectation of unregulated free markets and a rational consumer where possible, neither of which has been realised in practice.

This disjuncture between economics and politics has dominated economic policy thinking, including regulation, and can be resolved by a re-engagement with political economy (Besley, 2007). Although political economy has been on the side-lines of modern economic policy scholarship, there is a compelling case for its return in academia and the public policy arena even if it does not offer all the answers to complex issues. Such a reconnect can be established by revisiting the two disciplines' key assumptions and theoretical paradigms as discussed above. What differentiates the two is the emphasis on the role of government associated with politics and the role of the private sector, which is common in economics.

Clark (2016), Coporaso and Levnine (1992), and Serrat (2013) have therefore broadly defined political economy as an interplay between politics and economics in the allocation of resources in society. Black et al. (2012) also pointed out that the production and allocation functions involve both the markets and the political systems. Political Economy integrates how resources are allocated and how governance takes place (Hahnel, 2014). This integration of governance and resource allocation includes the role of the state in the economy, particularly what Black et al. (2012) have called public economics, which entails, "nature, principles, and economic consequences of expenditure, taxation, financing, and the regulatory actions undertaken by the non-profit government sector of the economy" (p. 8). In line with the role of the state in the economy, Black et al. (2012) defined regulation as "the enactment of laws, or administratively proclaiming an enforceable instruction that leads to a different

allocation of private resources from that which would apply in the absence of such government intervention. The allocation of resources is now influenced indirectly" (p. 8).

Based on these definitions, it follows that regulation involves a complex interplay between politics and economics, thus it can be associated with political economy. The absence of the free-market economy has, as stated above, justified a form of governmental regulation wherein the private sector continues to provide services, particularly in liberalised industries.

With the re-emergence of political economy, especially in the donor community, scholars and public policy 'pundits' have proposed a new analytical approach to research, knowledge generation, and practice (Whaites, 2017). This entails three dimensions: self-interest, as it is understood in rational and public choice; ideological influences, as found in discursive institutionalism and the role of institutions in shaping behaviour and outcomes, associated with sociological institutionalism (Department for International Development, 2009).

This multi-dimensional cohort of issues set out a terrain for an institutional dimension in the study of this interplay between politics and economics. Various scholars and public policy experts have also recommended that the different paradigms of political economy analysis mentioned above can be used or applied at different levels of analysis, namely: micro country analysis, sector-level analysis and problem-driven analysis (DfID, 2009, p. 8; United Kingdom National School of Government International, 2017; see also School for Oriental and African Studies (SOAS, n.d.). This study focuses on sectoral analysis in three network industries. This entails studying the role and influence of ideas and institutions on the behaviour and performance of the regulatory state constituted by various actors.

Institutions are defined as formal and informal rules that inform and influence social behaviour and these include laws, policies and regulations (DfID, 2009). However, formal,

and informal rules do not exist on their own without social activity arising out of the actions of individuals or organisations. By emphasising rules and organisations, it follows that political economy on its own does not fully explain what actually takes place in price regulation and other social phenomena.

The interplay between politics and economics does not take place in a vacuum but within a context enabled by rules and organisations, hence emphasising the role of sociology as the third discipline in the study of regulation. Therefore, there exists a need for a theoretical and methodological approach that also considers a multi-theory reality that integrates sociology and history in the study of efficiency in price regulation. As such, data is needed to create such a theoretical and methodological understanding of how politics, economics, sociology and history can be integrated into a single study.

2.7.5 A Multi-Theory Approach to Regulation: A Neo-institutional Perspective

The review of the literature related to the neoclassical and political economy perspectives has exposed their limitations as discussed in the foregoing. First, the literature in neoclassical economics has shown that capture theories have not been sufficient to explain price regulation given its interdisciplinary context. As shown in the subsequent sections, the neoclassical model has ignored the role of rules in regulating social behaviour. Political economy theory has therefore shown its limitations in that confining regulatory discourse to politics and economics is not sufficient given the potential role of other fields such as sociology and history. The following paragraphs, therefore, consider a multi-theory perspective that incudes sociology and history in the study of regulation.

Flowing from the logic behind the interdisciplinary nature of price regulation, institutionalism – an embracing name of various institutional theories – covers a broad spectrum of theories, namely historical institutionalism, rational choice institutionalism,

sociological institutionalism, and discursive institutionalism (Abrutyn & Turner, 2011). The different schools are united by their agreement on the influence of formal and informal rules on behaviour even though they approach this topic from different perspectives (Baldwin et al., 2010). The four schools of institutionalism are bound together by their agreement that regulation is a product or an outcome of institutions and social processes (Baldwin et al., 2010; see also Morgan & Yeung, 2007). An overview of the theories' main propositions is set out in Table 11.

Table 11

Overview of Institutional Theories and Scope of Inquiry

No	School of Thought	Scope of Inquiry
1.	Historical institutionalism	How does path dependency (self-reinforcements and lock in) manifest in the three industries leading to inefficiencies?
2.	Sociological institutionalism	What has been the influence of institutional isomorphism in the regulatory state in the three industries?
3.	Discursive institutionalism	What has been the influence of ideology on efficiency in price regulation?

Note. Own work

2.7.5.1 Discursive Institutionalism. The focus of this study on political ideology necessitates engagement with the associated political theories, especially discursive institutionalism. Discursive institutionalism is one of the branches of institutional theory, starting in the 1990s in political science, and is concerned with the influence of ideas on behaviour and performance of policy systems, including regulation generally (Schmidt, 2017). Discursive institutionalism holds that ideas exist independently and not as subordinates of self-interest (Schmidt, 2017; Fischer, 2003). Contrary to the practice found in classical theory to relegate ideas as subordinate to self-interest, Fischer (2012) has postulated

that ideas can exist independently and can also influence self-interest, as the interests of individuals and groups can be shaped by their worldview or ideas. However, it is a definition of ideas that must receive more attention. Defining ideas is, on its own, complex and contentious because ideas mean different things to different people (Schmidt, 2009). Schmidt also pointed out that the significance of ideas can be delineated in relation to specific policies and the programmes that seek to achieve certain policy goals.

Ideology has been mentioned by various scholars as one of the commonest expressions of ideas in political governance. Fischer (2003) has defined ideology as an inherent belief system shared by a group or community of people. Communities are organised around a shared system of beliefs notwithstanding the influence of elites in various social and political settings. Sauerland (2015, p. 3 & 9) posited that although the word ideology is commonly used, it did not have a single, unified definition within and between disciplines. However, besides ongoing debates on what constitutes an ideology, it is commonly defined as a system of beliefs shared by a group of people on their perception and conception of the world, including their role in it (Cole, 2019, para.1). Harrison and Boyd (2018) have posited that ideology exists even if it cannot be proven empirically as it only matters to those who hold a particular ideology. The mere absence of empirical evidence about ideology, however, should not be a reason not to consider ideology as a significant input in political governance particularly. Harrison and Boyd have also argued:

> We regularly draw on the store of ideological beliefs when we try to make sense of the world. They may not be logical, well-structured or even consistent (tortured are those who try to force their experiences into an ideological straitjacket; and, given enough power, they will often similarly torture others into wearing the same garment), but one's opinions and actions will refer to those beliefs. Ideologies can be seen as a form of intellectual "map" to help us find our way about the world, understand our place in

> it, and analyse the political and social events going on around us. Maps vary in their degree of accuracy. One can assess their value by comparison with objective reality and debate with others (p.136).

In its practical expression, political ideology has generally been associated with two schools of thinking, namely, the neo-liberal view and the developmental state perspective. There are possible other forms of ideology spread across disciplines depending on the context and issues being addressed. Neoliberalism, as defined by Chang and Grabel (2007), is associated with the role of the markets in the economy and this includes deregulation of industries, and a developmental state as defined by Leftwich (1995) deals with the role of the state in the economy in enabling economic development and growth and has included the role of state-owned companies.

Given that the rise of the regulatory state in South Africa has been associated with the advent of similar institutions across the world, it follows that the influence of political ideology on the rise of the South African regulatory state should consider or be underpinned by both the global and the local contexts.

2.7.5.2 Sociological Institutionalism. Sociological institutionalism has generally been associated with the adoption of norms (formal and informal rules) and their influence on the behaviour of the actors in various social, political and economic settings. A significant body of scholarship in this area has argued that such rules and norms are usually adopted for the benefit of some and not all the actors thereby having limited positive effect on social systems (Breuning & Ishiyama, 2011). Ishiyama and Braining have further postulated that "these scholars see institutional rules, norms and structures not as inherently rational or dictated by efficiency concerns, but instead as culturally constructed" (p. 26).

However, others have recognised the significance of formal rules in the functioning of political and economic systems. Fumkin and Galaskiewicz (2004) have also postulated that

organisations do not function in isolation; thus, their behaviour and activities are enabled by prevailing cultural and political contexts, making certain practices common in a particular social or economic industry – so-called institutional isomorphism. Institutional isomorphism usually happens when industries or countries adopt similar systems to enhance their credibility (Seyfriend & al., 2016). There is therefore a link between institutional isomorphism and credible commitment in different countries.

According to Mejia al. (2020), isomorphism can also happen due to coercion, when organisations or countries are pressured to adopt certain prevailing norms in a particular environment, such as conditions imposed by international donors in developing countries. While there is generally no evidence of South Africa being coerced by the international financial institutions to adopt the regulatory state, the regulatory state in South Africa, on its own, reflects what has been happening in other jurisdictions. Although this study is concerned with the influence of politics, there is a recognised need to study how the regulatory state underpinned by institutional isomorphism has enabled the developmental state in the different industries.

2.7.5.3 Historical Institutionalism and Path Dependence. As one of its attributes, political governance has been linked to preference for status quo leading to path dependence. There is therefore a need to include how political institutions result in gridlocks and inertia, which results in the failure of government programmes including the failure to achieve efficiency in price regulation. Historical institutionalism is a theory and body of knowledge associated with path dependence, which holds that an institution's life cycle is continuously informed and influenced by decisions taken at their inception (Freeman & Jackson, 2012). Mahoney (2006, see also Mahoney, 2000) has defined path dependence as: "A specific type of sequence in which early contingent events set into motion event chains or sequences that

have highly predictable features in outcomes or interest that could not have been explained in light of an initial set of events" (p. 129-130).

Freeman and Jackson suggest the essence of historical institutionalism and path dependence is that "history matters" and influences behaviour in social systems. Peters et al. (2005) sought to explain the relationship between historical institutionalism and public policy by positing that public policy making tends to evolve over a significant period unchanged, which also explains the existence of path dependence within a particular social system. Policy persistency, according to Peters et al., happens because policy systems can also be conservative as they follow their path due to self-reinforcements leading to lock in where there are limited alternatives.

Arthur and Arrow (2011) have associated the concepts self-reinforcements and lock in with the field of economics wherein they are commonly used. In economics, self-reinforcements and lock in happen:

> When large set-up or fixed costs, (which give the advantage of falling unit costs to increased output); learning effects (which act to improve products or lower their cost as their prevalence increases); coordination effects (which confer advantages to going along with other economic agents taking similar action; self-reinforcing expectations (where increased prevalence on the market enhances beliefs for further prevalence).

There is scope to transpose lessons from economics to the world of politics to investigate and document similar behaviour in political institutions. As the phrase "history matters" has gained prominence over the years in the field of political science, scholars have grappled with its empirical implications, that is how it can be translated into a functional methodology to enable the study of social systems. Prado and Trebilock (2009) have pointed out the difficulty in determining the aspects of history that matter due to the vastness of history. Vergne and Durand (2011) have added complexity by associating path dependence with natural sciences

and statistics arguing that it was not suitable in the study of social systems. However, Shand (2015) explained the feasibility of studying path dependence from a social constructivist paradigm, arguing that historical events can be defined and studied as "critical junctures are typically discussed as major exogenous events such as revolutions, economic crises, electoral landslides; they may also be overt makers of incremental sedimentary processes" (p. 7).

Some scholars have therefore generally located the discourse on path dependence in social systems within social constructivism, arguing that social activity or paths do not exist on their own but that they are occasioned by social action, especially the interaction among actors in a particular setting (Sydow et al., 2012). They postulated that path dependence can be explained in terms of self-reinforcements and lock in that are prevalent in social systems. They argued further that self-reinforcement and lock in take place when a system is confined to a single path – when there is no alternative. According to Marion (1999):

> Social systems carry information about themselves and their environments and are able to act on such information. That information allows them to spawn reproductions of themselves or replicate their ideas at remote sites; it allows them to make reasonably accurate predictions of the effects of their behaviours; it lets them interact with their environment without being at the mercy of the vagaries of their environment. (p. 7)

According to Garud et al., (2010), self-reinforcement results when systems replicate themselves with scale and scope, which enable a social phenomenon to continue to exist and expand its reach unhindered. Economies of scale deals with the ability of a firm to produce more of a product at less cost than would do multiple firms combined in a single market, while economies of scope focuses on product diversification at less cost leading to increasing returns (Mydland et al., 2020). On the other hand, lock in in social systems emerges out of self-reinforcement when a system is closed to alternatives. Kliktou et al. (2015, p. 1) have

posited that when lock in takes place in a social system, even inefficient services continue to be used “not because they are necessarily better, but because they are more widely used and diffused”.

Sydow et al. (2012), however, recommended case study methodologies in the study of path dependence, which is also the methodology used in this study. The use, justification and approach to case studies in this study is discussed further in Chapter 3.

2.7.5.4 A Multi-Theory Perspective and Approach. Informed by the review of the different theories in the preceding sections, it follows that price regulation can be studied from a multi-theory dimension, anchored around its interdisciplinary nature. The review of the various institutional theories indicated that they could co-exist in a single social reality or system, as shown in Table 12.

Table 12

Theoretical Analytical Framework for Data Analysis

Action	Theoretical Paradigms	Critical Questions
Triggers (causes of social action)	Ideology (Discursive institutionalism)	How has ideology influenced the rise of the regulatory state and its rules in each industry?
	Isomorphism (Sociological institutionalism)	How did institutional isomorphism influence the rise of the regulatory state and its rules in each industry?
Self-reinforcements and lock ins	Path dependence (Historical institutionalism)	How do the rules in each industry enable self-reinforcements and lock ins in each industry?

Note. Own work

This framework forms the basis of systems thinking discussed further in Chapter 3 and Chapter 8 of the study. As can be deduced from Table 12, the four theories are not at the same level of applicability; they are at different levels and stages in the functioning of the regulatory state. Such a conceptual explanation is significant in designing the multiple institutional theory approach to efficiency in price regulation. According to the table above, path dependence represents the time lag of a period from the beginning of a social process to its persistence over time, leading to lock ins when there is no alternative. In this case, the rise of the regulatory state in South Africa in the 1990s and its persistence over time represents the period under scrutiny. This entails, as its primary focus, a question about how the rules that have underpinned the regulatory state have persisted, leading to certain behaviour and performance or outcomes across the three industries.

The two other theories – discursive and sociological institutionalism – are first and foremost represented as inputs into the regulatory system. This is so because the rules and social interactions are products of ideology and social norms or isomorphism. As stated

above, the rules and norms in this study are represented by institutional isomorphism, which emanates from sociological institutionalism.

2.8 Summary of the Chapter

This chapter provides the conceptual theoretical framework of the study. Various concepts used in the study were reviewed and explained. First, the study defines price regulation within economic regulation followed by literature on the economic characteristics of the network industries and the rationale for regulation. This was done to set a context to justify the significance and need of the political dimension of price regulation. The literature reviewed indicates that price regulation has been justified on economic grounds due to high costs associated with the monopoly and oligopoly industries. The ideal perfect competition in neo-classical economics has not been achieved even in the liberalised telecommunications industry and inefficiency has persisted. This has resulted in attempts to mitigate inefficiencies and improve efficiency in the different industries. Approaches to improve efficiency reviewed include credible commitment, overcoming institutional gridlocks, evidence-based approaches and the role of the regulatory agencies. In this regard, the review of literature indicates that there was scope for reforms.

In addition to the conceptual discussions mentioned in the foregoing, the chapter also reviewed various institutional theories. These are discursive institutionalism, sociological institutionalism and historical institutionalism. Key in this regard, was the indication that the various theories can be applied and used in a single political or economic environment. This resulted in a multi-theory approach to regulation necessary in the analysis of data.

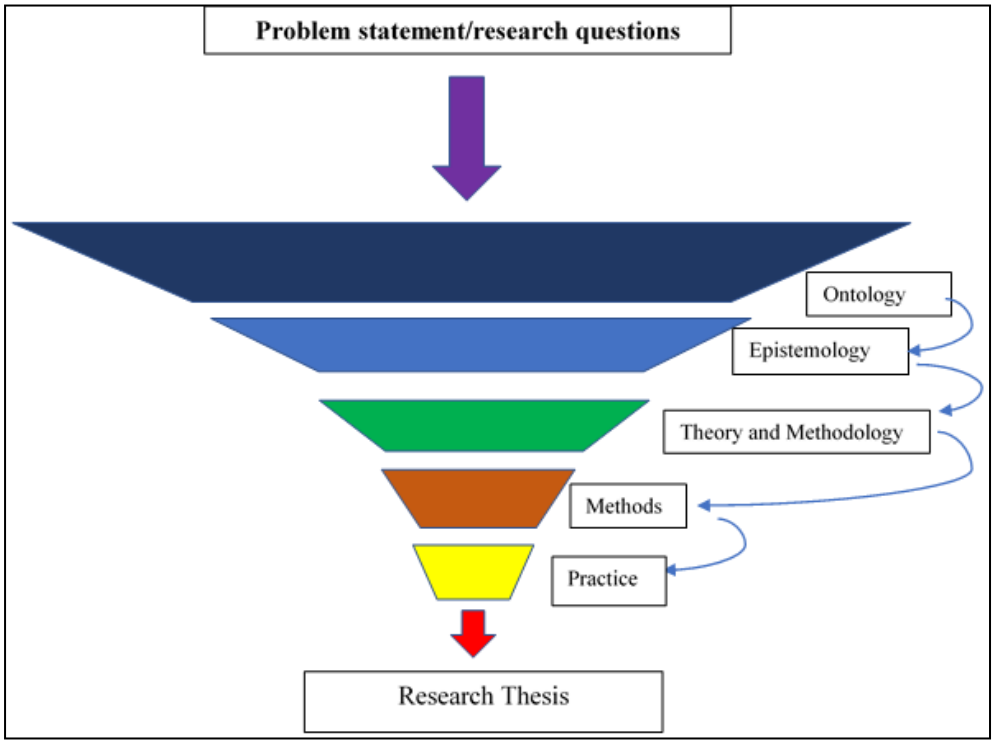
Chapter 3: Research Design and Methodology

This chapter comprises two principal parts, namely, the research design and the methodology sections. According to Van Wyk (n.d.), research design is a significant part of research as it enables a connection between the conceptual questions and empirical research. The design of this study focused on the integration of the various aspects of the research as set out in Figure 4. The diagram explains the relationship between ontology, epistemology, methodology, methods and the outcomes of the research. The linkages of the different elements inform how the different stages have been implemented throughout the research.

Key to this relationship is the location of the study within the social constructivist paradigm, which holds that reality is socially constructed and does not occur naturally, as in the case of objectivism (Mouton, 1996). This is in line with the nature of interactions and transactions among the actors in the regulatory state. It is through social interactions among the actors that the regulatory state in each industry is constructed. Figure 7 provides an overview of research design for this study.

Figure 7

Research Design



Note. Own work

As indicated in Figure 5, the research journey started with the delineation of the research problem and the development of the main research question and the secondary questions, which were required to generate further insights on the nature and functioning of the South African regulatory state. The different aspects of the research are discussed in the following sections.

3.1 Ontological and Epistemological Positions

This research was guided by ontological and epistemological perspectives, which explained and outlined the researcher's conception of social reality and knowledge pertaining to efficiency in price regulation. This was deemed important, as it was not a given that

researchers on the same subject would arrive at the conclusions owing to their respective ontological and epistemological orientations.

3.1.1 Ontology

Creswell (2013) highlights the significance of the ontological and epistemological positions to explain particular theoretical orientations of any research that eventually informs the choice and use of research methods. As suggested by Mouton (1996), an ontological perspective of research deals with the nature of being or reality, that is, the description of what exists in the social world. In this research, the ontological perspective is concerned with the nature of the South African regulatory state in relation to how politics influences efficiency or inefficiency in price regulation.

As discussed in the preceding chapters, and in line with the scope of this study, price regulation is a complex transaction involving government policy makers, the independent regulators and the regulated entities. Regulation does not occur naturally but as a result of social action caused by the actors in the regulatory state. Social reality in the context of regulation therefore is an outcome of collaboration and conflict among the critical role players in the regulatory system. This ontological reality falls within a branch of philosophy, known as constructivism, defined by Bryman (2012) as a branch of philosophy that holds that what we perceive as reality is socially constructed and does not exist on its own and for its own. This view is in contrast with another branch of philosophy, known as objectivism. Objectivism represents reality that exists outside human action; it is naturally constructed such as in positivism (Vrasidas, 2000). Positivism and its opposite theory of knowledge are discussed further in the following sections.

3.1.2 Epistemology

The characterisation of social reality of the regulatory state has implications for the nature and sources of information and knowledge, what is referred to as epistemology or the theory of knowledge. Klein (2005) defines epistemology as a branch of philosophy concerned with determining what constitutes knowledge, how it is developed, its source and its limits. Klein has emphasised the scientific basis of knowledge as central to epistemology because speculation and wilful thinking do not constitute knowledge. This view has implications for the construct of knowledge as it relates to the regulatory state.

Two schools of thought have hitherto dominated the discourse on knowledge. These are positivism and interpretivism. Positivism relates to objectivism as it also holds that knowledge is given and occurs naturally, while interpretivism is connected to constructivism, which holds that knowledge is socially constructed (Pham, 2018). Positivism entails using methods common in natural science, while interpretivism relies on the experience of the participants in each social environment, based on their lived experience or views. This study, consistent with the ontological perspective, is therefore premised on knowledge being generated and sourced from systematic engagements with the participants in the three industries. The participants are by virtue of their lived experience in the nature and functioning of the regulatory state suitable participants or sources of data and knowledge.

3.2 Qualitative Comparative Case Study Approach

A methodology is a significant component of research and gives further expression to the ontology and epistemology of a study. Methodology is defined by the University of Western Australia (n.d.) as a theoretical framework that guides research, including the logic of selecting the research methods. The methodology section generally answers questions about how knowledge is attained to achieve a research objective (Mouton, 1996). This is not

the same thing as the methods section, which essentially deals with the process of data collection and analysis.

There are two common approaches to research methodology, namely, qualitative and quantitative. Qualitative research is defined by Christensen et al. (2015, p. 68) as "Interpretive research approach relying on multiple types of subjective data and investigation of people in particular situations in their natural environment". Quantitative research, on the other hand, is defined by Sheard (2018) as research that can be expressed in numbers through the use of statistical methods. Table 13 compares the two methodologies reproduced from a framework developed by Bryman (2012, p. 36). The comparison was necessary to ensure that the choice of the methodology was relevant, informed by the nature of reality and in accordance with the research questions of the study.

Table 13

Comparing Qualitative and Quantitative Methodologies

Qualitative	Quantitative
Predominantly emphasises an inductive approach to the relationship between theory and research, in which emphasis is placed on the generation of theories	Focuses on deductive approaches to the relationship between theory and research and seeks to test hypotheses.
Rejects the practices and norms of natural science and prefers an emphasis on how individuals interpret their social world.	Based on practices and norms of natural and scientific worlds, particularly positivism.
Holds that social reality is a constantly shifting emergent construct of creation by social actors.	Holds that social reality is an external, independent and objective reality. It is given.

Note. From Bryman (2012, p. 36).

The qualitative methodology was selected based on the fact that the study sought to generate or contribute to the development of theories building on the existing theories discussed in the proceeding chapter. And based on its ontology and epistemological perspective, the study generated data and knowledge from the lived experiences of the participants. Thirdly, the study holds that social reality in the regulatory state is constantly shifting based on the actions

of the social actors, which carry out specific mandates and pursue specific interests. Quantitative methodology, rooted in positivism, would not have been suitable for this research, as it is associated with statistics while this is concerned with the lived experience of the participants. Qualitative research can be approached from various dimensions or methods depending on the research's scope and focus. Creswell (2013, p. 104) identified the following approaches to qualitative research: Narrative, Phenomenology, Grounded Theory, Ethnography and Case Study. These approaches are compared in Table 14. As with the methodology, the choice of a method should be explained and justified to enhance the quality or rigour of research (Mason, 2002).

Table 14

Comparative Approaches to Qualitative Research

Characteristics	Narrative	Phenomenology	Grounded	Ethnography	Case Study
Focus	Exploring the life of an individual	Understanding the essence of the experience	Developing a theory grounded in data from the field	Describing and interpreting a culture sharing group	Developing an in-depth description and analysis of a case or multiple case
Type of problem best suited for design	Needing to tell stories of individual experiences	Needing to describe the essence of a lived phenomenon	Grounding a theory in the views of the participants	Describing and interpreting the shared patterns of culture of a group	Providing an in-depth understanding of a case or cases
Unit of analysis	Studying one or more individuals	Studying several individuals who have shared an experience	Studying a process, an action, or an interaction involving many individuals	Studying a group that shares the same culture	Studying an event, a program, an activity, or more than one individual

Note. From Creswell (2013 pp. 104-106)

This study is based on the qualitative case study research methodology and methods as it compared approaches and practices in the three network industries from the perspectives of the participants in the regulatory environment. The selection of the case study methodology was also necessitated by the need to gain insight into the complex phenomena within a bounded context (politics and institutions in each industry) within which price regulation occurs. The choice of a case study approach was also supported by the views of Harrison et al. (2008) who explained that case studies are generally used to gain deeper understandings of complex issues in their particular settings. The comparative nature of this study necessitated that each case was studied within its specific context to enable an in-depth understanding of how price regulation works in each industry.

According to Crowe et al. (2011), an in-depth study of a social phenomenon involves a multifaceted understanding of complexity in a real-life context while answering what, why and how questions. The study has the elements of what, why and how questions, which are associated with case study research (Yin, 2014). The "what" question focused on what can be seen to be happening in the regulatory environment, followed by the how on the manner in which the interactions were taking place, concluding with why things were happening the way they did. Such a comprehension was significant to explain the two contending phenomena, namely, the regulatory state and the developmental state. To arrive at a conclusion, the study had to grapple with what was happening at both ends following by understanding the manner in which things were seen to be happening and concluding with why they happened as they did.

There are two types of case studies, namely, single and collective case studies. Single case studies have limitations when it comes to generalisations while multiple case studies enable a researcher to analyse cases within each setting and across settings to understand

similarities and differences (Baxter & Jack, 2008). Collective or comparative case studies generally involve studying two or more cases to explain a particular phenomenon from a comparative perspective and this approach generally involves studying cases individually and collectively, guided by the research questions (Christensen, 2014). Such an approach was used in this study, first by answering the research questions from the perspective of the participants from each industry, followed by an analysis of the data from a cross case perspective. This approach was also necessary to enhance the reliability and validity of the research.

Reliability and validity have been at the centre of why research matters in relation to the truthfulness or rigour of qualitative research. As defined by Brink (1993), reliability deals with consistency, that is, achieving similar results over different testing periods. By its nature, this definition presupposes that the conditions of the test or research will have to be the same and consistent to yield consistent outcomes. Validity refers to the correctness or truthfulness of the inferences that are or can be made from the research results (Christensen et al., 2015). The critical question has to do with how the two can be approached and used in qualitative studies. There is an ongoing discourse on the extent to which reliability and validity can be used in qualitative studies (Golafshani, 2003; Cypress, 2017).

Cypress (2017) has argued that reliability and validity are crucial in all studies, including qualitative studies; however, it cannot be easily measured as the qualitative methodology is interpretive in a changing context. As a result, most literature associates reliability and validity generally with quantitative studies. However, Yin (2014), as indicated in Table 15, pointed out that reliability and validity could be used in both qualitative and quantitative studies subject to the various strategies used in data collection and analysis.

Table 15

Managing Rigour in Qualitative Research

Tests	Case Study Tactic	Phase in Research
Construct validity	Use multiple sources of evidence Establish a chain of evidence	Data collection
Internal validity	Do pattern matching Do explanation building Address rival explanations Use logic models	Data analysis
External validity	Use theory in single-case studies Use replication logic in multiple case studies	Research design
Reliability	Use case study protocol Develop a case study database	Data collection

Note. From Yin (2014, p. 45)

Consistent with this framework, Trochim (2006) postulated that reliability and validity can also be used in qualitative studies as the differences in their use in the two methodologies are mere semantics. To explain this, Trochim has also compared various concepts and measures (Table 16) as used in quantitative and qualitative studies indicating that there are more similarities than differences between them.

Table 16

Comparing Rigour in Qualitative and Quantitative Research

Quantitative	Qualitative Equivalent	Description
Internal validity	Credibility	The results are believable from the point of view of the participants
External validity	Transferability	The extent to which results can be generalised. This is the responsibility of the one doing generalising
Reliability	Dependability	Deals with repeatability and the need for the researcher to account for ever-changing context

Note. From Trochim (2006, para. 2)

Trochim further pointed out that thick description, triangulation and ethical practices can enhance rigour in qualitative research. This study uses thick description, triangulation and

ethical compliance as measures of quality or rigour during the research design, data collection and data analysis phases. Thick description is defined by various scholars, among them Yin (2014), as a use of detailed contextual analysis, similar to in-depth studies common in case studies. Chapter 4 of the study describes the three cases in detail. Yin recommended further measures that could be used to improve rigour during the data analysis phase in quantitative and qualitative studies, such as pattern matching, explanation building, and rival explanations, which will be applied in the analysis as explained further below.

3.3 Data Collection

Having good data is central to the progress of a research project. Maree (2010) has suggested that interviews are suitable for interpretive research, which places emphasis on the views of the participants. This is because the participants are likely to know what happened, thus also contributing to explaining the context of a social phenomenon. There are, of course, other commonly used data collection approaches including document reviews.

Different data collection methods have their strengths and weaknesses, justifying the use of mixed methods in qualitative studies (Christensen et al., 2014). Triangulation, the use of multiple methods, is recommended by various scholars to enhance the reliability of the collected data (Mouton, 1996; Creswell, 2013; Yin, 2014). As will be discussed further in the subsequent sections, data collection in this study included: i) review of legislation and policy documents related to price regulation in the three industries; ii) review of public documents including court papers (ii) semi-structured interviews with the selected sample.

3.3.1 Document reviews

Document reviews also constituted one of the methods of data collection in social research. While the primary data was sourced through the semi-structured interviews, documents were also considered to enhance insights, especially when it came to understanding and explaining the rules that underpin the functioning of the regulatory state.

Document review is a systematic procedure of reviewing and evaluating documents and includes adverts, agendas and minutes of meetings, press statements, media clippings and various public records (Bowen, 2009).

Document reviews mainly focused on the legislation, policies, and regulations, while court rulings in the various industries were used to generate information and data. Legislation reviews also formed part of the review of documents as another source of data. Various laws were considered and analysed as significant data sources. This was considered necessary as the laws define the mandates and set out terms and conditions for the actors as they interact with each other. The laws given below were therefore reviewed.

In the telecommunications industry, the ECA and the Independent Communications ICASA Act were reviewed. In the electricity industry, the ERA. The ACSA Act was also reviewed in the case of the airport industry.

Document reviews also focused on the regulatory methodologies used by the different regulators and legislation related to price regulation. This is the Long Run Incremental Cost (LRIC) methodology in the telecommunications industry as published by ICASA, the Multi-Year Price Determination Methodology (MYPD) used by NERSA in the electricity industry, and the Approach Document of the Regulating Committee in the airport industry.

3.3.2 Court Documents

Various court documents and rulings were considered. These included the ruling of the Gauteng High Court in the matter between the *Minister of Telecommunications and the Chairperson of ICASA and Others* (2016), the matter between *Earthlife Africa and the Minister of Energy and Others* (2017), *ESKOM SOC Limited v. the National Energy Regulator of South Africa and Others* (2020). There were no specific court documents reviewed in the airport industry. The reason for this is that the Minister of Transport usually

intervened in the conflicts between the Regulating Committee and ACSA as mentioned by the participants in Chapter 6.

3.3.3. Semi-structured Interviews

As stated, semi-structured interviews constituted the main source of data. Semi-structured interviews were preceded by the review of various literature related to the handling of such interviews. Since this study follows an interpretive approach to data it was necessary that interviews be included in the data collection strategy and plan. According to Seidman (2006), interviews are generally used because they enable the participants to express their views provided that potential bias is mitigated. Bias in research and interviews mainly happens when interviewers, for instance, fail to keep their egos in check, thus failing to place the participant at the centre of the discussion (Seidman, 2019).

In this study, such a possibility was mitigated by the researcher informing the participants about their role when they were first invited to participate in the interviews. This was first done during the telephone conversations and before the commencement of the interviews. Consistent with the ethics clearance, the researcher also clarified his position in government as Director-General of the Department of Telecommunications and Postal Services. To mitigate the possible unintended consequences of familiarity having worked with some of the participants, the participants were still informed that the researcher was bound by the university ethics and the project was for the sole purpose of fulfilling an academic requirement and had no bearing on the work of the government.

Scholars have also emphasised the need for courtesy in interviews, which happens when the interviewer is considerate of the circumstances of the participants so that they feel welcome and respected (King et al., 2019). To mitigate these, Josselson (2013) mentions that the interviewer should create space for a response as soon as he or she has posed a question. Semi-structured interviews enable probing and corroboration of data from other sources more

than do structured interviews. In this case, the semi-structured interviews were undertaken following an approach recommended by Josselson:

> Our ultimate interpretive role as researchers is to understand people better – or at least differently – than they understand themselves. The aim of interviewing is to document people's experience, self-understanding, and working models they live in, so that we later attempt to make meaning of these phenomena at levels of analysis beyond simple descriptions of what we heard. (p. 309)

In line with the views and the recommendations by the scholars, the following paragraphs further detail how the semi-structured interviews were prepared and conducted.

3.3.4 Sampling

The approach to sampling followed established professional practices as discussed in this section. The use of interviews requires sampling to identify the research participants, and various sampling methods and techniques were considered. Maree (2010) identified various approaches to sampling, including purposive sampling, which entails sampling with a purpose in mind and which was adopted for this research. Creswell (2013, p. 156) has postulated that, in purposeful sampling, "the inquirer selects individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study".

Purposeful sampling was used because the research was aimed at the participants or experts in price regulation drawn from the government, the regulators and the regulated entities as follows:

- The Policy Experts were drawn from government departments: these were senior government officials responsible for the development of policy and with knowledge of government oversight on state-owned companies and regulators. The Policy Expert constituted a mixture of Deputy-Directors General and Chief

Directors who will ordinarily have exposure to the same issues. In South Africa, these are second and third administrators, respectively after the Directors-General who head government departments.

- Regulatory Experts were drawn from the independent regulatory agencies: these were Members of the ICASA Council, NERSA and the Regulatory Committee. In a limited way some of the former members of these institutions were interviewed. Two participants in each case were former members due to the unavailability of some of the sitting members who were invited to participate in the semi-structured interviews.
- Industry Experts were drawn from the regulated industry: in the electricity industry, these were senior executives at ESKOM and the municipalities. In the Airport Industry, these were two Executives from ACSA and two from the Airline Industry. This was necessary to also draw insights from the views of the airline industry who, although not regulated, form part of the regulatory process as ACSA is required by law to consult with them. In the telecommunications industry, these were senior executives responsible for regulation in the telecommunications companies. The participants were grouped into three broad areas per the structure and design of the regulatory state, as indicated in Table 17.

Table 17

List of the Participants

Participant	Telecommunications	Electricity	Aviation
Policy making	4 policy experts	4 policy experts	4 policy experts
Regulatory	4 regulatory experts	4 regulatory experts	4 regulatory experts
Industry	4 industry experts	5 industry experts	4 industry experts

Note. Own work

3.3.5 Invitations to the Participants

The interviews took place from September 2019 to May 2021. The participants were first contacted via telephone before being sent formal requests for the interviews. During the telephone conversations, the purpose of the study was explained and the request for the potential participants to participate in the study was expressed. While most of the participants agreed during the telephone conversations, it was further clarified that they would still receive a written request and a consent form in which the purpose, the approach and the research questions were stated. This was accompanied by the consent form, which was attached and sent to the prospective participants. Some of the participants filled in the forms and returned them, while others only signed the consent forms at the interviews. This was generally understood to be as a result of the busy schedules of some of the participants, they could not fill in and return the forms in advance. The participants generally apologised for this omission.

3.3.6 Fieldwork and Handling of Interviews

Interview appointments were set based on the availability of each participant. Venues and time slots for the interviews were determined by agreement with the prospective participant. The interviews generally lasted between 45 and 60 minutes. The interviews started with introductions and exchange of pleasantries as the researcher and the participants were already familiar with each other. The purpose and the objective of the research was reiterated. The role of the researcher in government was also mentioned. It was also emphasised that the researcher was bound to conduct himself in accordance with the university's ethics.

The semi-structured interviews were based on the research questions that were summarised in the request for the interviews with each participant. The questions shared with

the participants were generally similar for each category while at the same time allowing the participants to take control of the engagement provided they remained within the focus of the study. Given that most of the interviewees were experts in their respective industries, they were able to take control of their narrative, with the interviewer only intervening to ensure that the responses were still relevant.

3.3.7 Recordings

Thirty participants agreed to be interviewed face-to-face, and the remaining participants sent written responses and were willing to allow telephonic follow ups where necessary. In the main, the four participants recommended this approach because of their unavailability to meet physically, which was later exacerbated by the Covid-19 pandemic in 2020. All the participants in the face-to-face interviews agreed to be recorded. They indicated whenever they were speaking off the record, and such information was not used in the findings and analysis of the data.

3.3.8 Anonymity

De Jager (2015) explains the difference between confidentiality and anonymity. He defines anonymity as concealing the identity of the participants, while confidentiality is about who can have access to information. Pseudonyms are generally used as a common approach to ensure anonymity (Halai, 2006). As per the commitment made in the request for the interviews and in line with the consent forms and the ethics clearance, pseudonyms were used in the tabulations and analysis of the data to protect the participants' identities. As already indicated above, the participants were grouped into three categories: policy experts who are people within the policy environment; regulatory experts being people with expertise in regulatory agencies, and industry experts drawn from people with expertise in the specific industries. The experts in each industry were allocated as Policy Expert 1-5, Regulatory Expert 1-5, Industry Expert 1-5 depending on the number of participants in each area.

3.4 Data Analysis: Systems Thinking Approach

A systems thinking approach was adopted given the complex interplay between the regulatory state and the ideology of the developmental state. The need for systems thinking is evident in the application of a multi-theory approach in the theoretical framework in Chapter 2. As suggested by Marion (1999), undertaking systems analysis is not straightforward as it involves iterative analysis of the interplays among various variables. Marion has explained chaos and complexity as characterised by non-linear interactions, which involves feedback mechanisms for every action, making it difficult to predict social actors' behaviour. Regulation is a complex pursuit because it consists of organisations and the rules that enable interactions. Complexity in this study can be explained by the complex interplay between the regulatory state and the developmental state, which was time consuming. Table 18 provides a comparative framework of the regulatory state and the developmental state, which forms the basis of the systems thinking approach.

Table 18

Comparing Regulatory State and Developmental State

Regulatory State	Developmental State
Significant external influences (isomorphism) are highly possible.	Largely based on the local political environment.
Largely associated with the separation of the policy, regulatory and operations.	Mainly concerned with the role of the state, including the role of the state in policy, regulation and operations.
Underpinned by credible commitment in which the government establishes independent regulators and enacts a set of rules that enable the separation of institutions and protection of property rights.	Entrenches the role of the government leading to collaborative governance.
Focuses on enhancing efficiencies, especially production efficiency.	Generally concerned with redistribution and the allocative efficiency.
Places emphasis on the significant role of the regulators.	Emphasis is on the role of the government departments.
Supports market liberalisation	Entrenches the role of State-Owned Companies

Note. Own work

While the regulatory state and the developmental state are generally different, they co-exist and interact within the same context and time. And as much as this study focused on the influence of the ideology of the developmental state on the regulatory state, at the same time, it also recognised the influence of the regulatory state on the developmental state. Systems Thinking was also necessary in the analysis of data from a theoretical standpoint. Reproduced here is Table 19 for easy reference regarding the theoretical analytical framework which was used to analyse data from a theoretical standpoint by explaining the confluence of the different theories as discussed in Chapter 2.

Table 19

Theoretical Analytical Framework

Action	Theoretical Paradigms	Critical Questions
Triggers (causes of social action)	Ideology (Discursive institutionalism)	How has the ideology of the developmental state influenced the rise of the regulatory state and its rules in each industry?
	Isomorphism (Sociological institutionalism)	How did institutional isomorphism influence the rise of the regulatory state and its rules in each industry?
Self-reinforcements and lock ins	Path dependence (Historical institutionalism)	How did the rules in each industry enable self-reinforcements and lock ins in each industry?

Note. Own work

Complexity in this study was also heightened by the fact that the study took place amid ongoing debate around the non-linear causality, that is, whether qualitative studies can explain cause and effect in social systems. Attempts by scholars and other public policy actors to understand these complex interplays has led to a debate around non-linear causality, which involves complex interplays between cause and effect (Warfield, 2002). Qualitative researchers have pointed out that approaches that limit the study of complex social systems to experiments and statistics tend to be devoid of context as human interactions and behaviour cannot be measured only through statistics but involve, significantly, engagement with each other and also with their environment (Manuel-Navarrete, n.d.).

Lincoln and Guba (1985) have also argued that much of social phenomena cannot be explained by "natural laws" and that causality itself was not straightforward and could not be attributed to a single method. At the same time, quantitative researchers have argued that qualitative data is only useful to compliment quantitative outcomes generated by systematic experimentation (Maxwell, 2004). Maxwell further argued that qualitative methods lack

theoretical and methodological grounding that must be overcome before qualitative research can be accepted as explaining causality.

The limitation of both the qualitative and quantitative methods to explain social phenomena has led to the calls for qualitative and mixed methods to be considered as complementary methods in the study of causality (Christensen et al., 2015). While recognising the utility of mixed method approaches to understanding causality, this study is based on a single method, a qualitative approach, which contributes to understanding causality. This is confined to the use of rigorous case study methodology to explain how the different parts of the regulatory system interact and influence the performance of regulation. Using qualitative methods, this study focused on understanding the functioning of price regulation based on the researcher's interaction with the practitioners in the field. Without this, an experiment could not have predicted the choices that have been made, including how these later influenced the behaviour and performance of price regulation as a social system.

While qualitative research explains the nature and performance of regulation, there is no gainsaying that mixed methods can be used, especially if the study's scope includes statistical information that necessitates quantitative methods. A study of this nature will contribute to future mixed method approaches to understanding causality. It will contribute towards further developing theoretical and methodological positions related to the circumstances within which qualitative methods can be used to study and explain causality. Regulation on its own is a bounded system with defined rules (institutions)that outline the roles and responsibilities of various actors and their procedures. The existence of formal rules can ensure that specific actions are predictable or can be explained, which can form a framework for studying and understanding cause and effect. The extent to which this can happen is discussed in detail in the findings and the recommendations chapters. Both the

findings and the recommendations arise out of pattern matching, as explained in the next section.

3.5 Coding and Pattern Matching

Scholars have long recognised the importance of coding in data analysis. Such a realisation has always been significant in the world of research, given the amount of data to be processed at any particular time for thesis and other intense forms of guided research. Data thus has to be organised to given meaning and enable a researcher to answer specific research questions. Coding is thus a necessity to achieve this. Insights (n.d.) defines coding in qualitative research as a "process of labelling and organising your qualitative data to identify different themes and relationships between them". For instance, Delve (2022) highlighted the importance of coding in qualitative data analysis as it increases validity, decreases bias, accurately represents the views of the participants and enables transparency. Although data analysis was based on manual coding, these issues were considered and endeavours were made to achieve them as discussed below. As suggested by Rickles et al. (2007), thinking systematically is generally time consuming and complex, which in this case resulted in the use of manual coding as discussed below.

Manual coding involves non-technological instruments that, although time consuming, can enhance familiarity with the data. As argued by Bodine (2021), manual coding can enable a researcher to "streamline the overall analysis process. Creating codes requires the researcher to decide which data is relevant and why, reducing the amount of data that must be considered in the final analysis. In this case, manual coding was used as it enhanced familiarity with the data given the complex nature of the topic. Although time consuming, as it requires illustrations and tables to be developed manually, it was suitable for assisting the researcher to achieve the objectives of the project. Coding was done through MS Word wherein the data was first arranged broadly in line with the research questions. As

suggested by Saldanha (2016), coding involves inserting codes in the form of comments on the relevant passages In the text.

Coding in this case was instituted from the beginning as data analysis had to start while the research was in progress. It was necessary to establish patterns from the beginning, which was daunting for an exploratory study as analysis involved both inductive and deductive reasoning. At the start of the data collection processes, the research questions had already been identified and constituted the initial codes to guide the research as it progressed. The allocation of data into patterns followed after transcription wherein data was allocated into patterns and themes.

Some scholars have recommended pattern matching to improve rigour in research as it involves comparing predetermined theoretical path and observed pattern arising from the collected data (Sinkovics, 2018; Baskarada, 2014). Goodman (n.d.) adds that pattern matching involves moving from observing data, to identifying behavioural patterns, to surfacing the underlying structures that drive those events. In this regard, some of the sub-codes and the themes emerged as the research was in progress. As stated, data was analysed using deductive and inductive coding based on the research questions of the study as indicated in Table 15. The questions per se were informed by the theories of economic regulation as discussed in Chapter 2.

- The data was first packaged in accordance with the three research questions. Data associated with the nature, development and behaviour of the institutions of the regulatory state were associated with the first research question. This in the main focused on how the interplay between the regulatory state and the developmental state shaped a new institutional environment.
- The second question was associated with how the behaviour of the institutions has influenced the performance of price regulation in relation to efficiency,

followed by the response to the third question on approaches to enhance efficiency. Approaches to improve efficiency were mainly informed by the recommendations of the participants as well as the overall analysis of the data across the different industries.

Data was tabulated and analysed during the research process to enable the researcher to proactively identify emerging patterns and close gaps in the data before the research was completed. This was also to ensure that the researcher was flexible enough to allow the semi-structured interview to evolve or enable the research to refine the interview questions, as suggested by Christensen et al. (2014).

Table 20 provides a framework within which data was compared and contrasted within and between the three case studies, in line with the research questions and the scope of the study.

Table 20

A Matrix for Cross - Case Analysis

Research Questions	Telecommunications	Electricity	Airports
In what way does the political ideology of a developmental state influence collaborative leading to self-reinforcements and lock in in the regulatory state?			
How do self-reinforcements and lock in influence efficiency?			
What approaches are required to improve efficiency in price regulation?			

Note. Own work

3.6 Ethical Considerations

The researcher is aware of ethical issues in scientific research, which may have adverse effects on the participants if not attended to. It is thus essential that researchers adhere to ethical practices during their research as this is one of the requirements for sound research (Descombe, 2013). In line with the proposition by Descombe (2013), the researcher considered ethical issues related to the treatment of research participants and adhered to established professional conduct as set out by the University of the Witwatersrand concerning the Ethics for the Humanities. Before undertaking the study, I followed up and fulfilled the requirement of my ethics clearance, the proof of which has been attached as Annexure 1. No interviews or engagement with the participants took place before the approval of the ethics clearance.

In addition to obtaining ethical clearance from the University, the researcher developed an ethical checklist, which was also included in the invitation letter to the participants. The researcher and the research scope were introduced in the interview request sheet. The introduction included the researcher's background and current activities. The rights of the participants to contribute voluntarily were also outlined in the request. It is common cause in qualitative studies that researchers enter research with particular views due to their knowledge, experience and proximity to the issues (Seidman, 2006). In this specific case, the researcher was aware that his role in government could potentially lead to bias, whether perceived or actual. To mitigate this, and as stated, the participants were informed in advance about the activities of the researcher. The declaration was necessary to enable the participants to opt out of the interview if they were uncomfortable with participating, given the role of the researcher in government. The Interview Request Sheet and the Consent Form are attached as Annexures.

3.7 Summary of the Chapter

This chapter focused on the design of the study including the choice of methodologies and methods. Qualitative methodologies and the associated methods were identified as they were suitable for an interpretive study. Regulation is such that social reality can be explained in terms of the interactions and the experience of the participants. In addition to the need for an interpretive methodology the purpose of the study was to compare trends and approaches between the three industries with a view to enhance the understanding of how the topic can be handled from the different industries' perspectives.

As a result, this study was based on the qualitative case study method. Key to this integration was the use of semi-structured interviews common in qualitative studies. At the same time, the study used the triangulation and thick description approaches. Regarding triangulation, the data used in the study was supported by extensive literature and document reviews in order to explain the context of each industry. Thick description, which entails a detailed explanation of the context, was used in the different parts of the study, especially in Chapters 4 to 6. A pattern-matching approach linking research questions and the relevant codes was chosen as a method for data analysis for the individual and the comparative cases.

Chapter 4: Regulating an Inefficient Monopoly: A Case of the Electricity Industry in South Africa

This chapter presents the findings from the semi structured interviews and document reviews in the electricity industry. The findings combine the data from the review of documents such as court rulings, legislation, policies and regulations as well as the data from the semi-structured interviews with the participants. First, the chapter deals with the influence of political ideology on the institutions of the regulatory state, followed by the presentation of the data on the influence of the institutions of the regulatory state on the performance of price regulation. In section 4.1 the study is concerned with the influence of the political ideology of the developmental state on the institutions of the regulatory state in this industry. Section 4.2 is concerned with the influence of the political ideology on the institutions of the regulatory state, followed in section 4.3 by the data on the influence of the institutions of the regulatory state on efficiency in the industry. The chapter concludes with the recommendations of the participants on approaches to mitigate inefficiencies/improve efficiencies in this industry.

4.1 The Influence of the Political Ideology on the Institutions of the Regulatory State

4.1.1 The Institutional Design of the Electricity Regulatory State

This sub-section deals with the institutional environment in the electricity industry as set out in formal or official instruments such as the laws, policies and regulations. These are the rules that enable interactions among the actors in the regulatory state with an emphasis on the policy maker, the Minister of Energy, and the regulatory agency, NERSA. As mentioned in Chapter 1, the three actors in the regulatory state are interlinked and bound together by specific institutions or rules in each industry thereby completing the cycle of the regulatory state.

Collaborative governance, as opposed to the dominance of either the politicians in the Ministries or the regulatory agency, can be observed from the review of the legislation and the views of the participants in the electricity industry. In particular, collaborative governance between the Minister of Energy and NERSA is evident in the provisions of the various laws, especially the ERA. The Minister of Energy is required in terms of section 34 of the ERA to consult NERSA before issuing determinations for the licensing of new generation capacity, determination of energy sources and the procurement processes to be followed. This means that neither the Minister nor the regulator has a sole responsibility on licensing matters. However, unlike in the telecommunications industry, where ICASA is only required to consider policy directions issued by the Minister of the Communications and Digital Technologies, NERSA is required by section 34(3) of the ERA to implement the determinations issued by the Minister.

As in the telecommunications industry, NERSA is not required by the legislation to publicly explain its decisions following consultations with the Minister. Yet the nature of this engagement between the policy maker and the regulatory agency is a significant public interest issue as evidenced in the ruling of the Western Cape High Court in the matter between *Earthlife Africa v the Minister of Energy and Others* (2017). The High Court ruled that the consultation between the Minister and NERSA was not a "rubber stamp" but substantially administrative. The court further ruled that that NERSA was not subservient to the Minister of Energy who also happened to appoint the members of the Regulator. As a result, NERSA was bound to consult the public and explain its reasons for concurrence with the Minister in accordance with the Promotion of the Administrative Justice Act No 4 of 2000 (PAJA).

PAJA gives effect to section 33 of the Constitution of the Republic of South Africa, 1996. In terms of this section, state institutions are required to ensure that "everyone has the right to administrative action that is lawful, reasonable and procedurally fair subject to the law. Public policy makers and regulators, like other state institutions, are to comply with PAJA, as it regulates decision-making procedures and practices of public entities to ensure fairness, promote accountability and enhance efficient governance. To give practical effect to the right to administrative action, section 2(b)(i)-(ii) of PAJA sets out the requirements for a fair administrative action. These provisions require administrative bodies to ensure that adequate notices are issued, citizens or affected parties are given opportunities to make representations, and are entitled to request reasons for decisions.

As an example, the South Gauteng High Court ruled in the matter between *ESKOM SOC Holdings and the National Energy Regulator of South Africa (NERSA) and Others* (2020) that NERSA should not have deducted an equity investment of R69 billion by government into ESKOM against the revenue applications for 2019/20, 2020/21, 2021/22 without consulting ESKOM. NERSA had argued that ESKOM was not entitled to the revenues it had applied for because government had injected a R69 billion equity investment which, in its view, would amount to "double dipping". NERSA's actions were found to be contrary to PAJA and it was thus ordered to reverse its decision so as not to prejudice ESKOM by deducting an equivalent of the equity amount from its new revenue applications.

The High Court in *Earthlife Africa versus the Minister of Energy and Others* also ruled that the Minister of Energy was not bound to consult on his or her draft determinations. This part of the ruling exposed the complex nature of the relationship between the two actors and showed the significant role of the regulatory agency compared to the Minister. This was particularly the case because the court was of the view that the draft determination of the Minister only became effective once the Minister had obtained the concurrence of the

regulator. The ruling was similar to the situation in the telecommunications industry wherein the role of the regulator was mandatory while the issuing of policies and policy directions by the Minister was optional or discretionary.

Policy Expert 3 weighed in positing that having both NERSA and the Department of Energy was not workable, considering that the Minister was required to consult with the regulator before taking critical decisions but the regulator in this industry was not expected to do the same. In his view, expecting the regulator to consult with the Minister would be called capture while it was not the same the other way around. This in his view pointed to the fact that collaborative governance was more weighted in favour of the regulator than the government. This disjuncture, according to Policy Expert 3, has resulted in an incomplete regulatory system and limited accountability and transparency on the side of the regulator.

The following subsection traces the origins and the reasons for the current institutional environment with a specific focus on the role and influence of politics, which is in line with the scope of this study.

4.1.2 The Making of the Institutions of the Regulatory State

Literature shows that the rise of the regulatory state in the world was significantly founded on the establishment of independent regulatory agencies at a time when the role of the state was constrained by poor macro-economics and dwindling fiscal positions (Bauer, 2013). It was anticipated, with the rise of the regulatory state, that the newly established regulatory agencies would provide technical expertise to mitigate the unintended consequences of political decisions in the previously state dominated industries and the monopolies. However, what happened in practice has resembled a complex confluence of politics and the technocratic world of regulation.

The participants were aware of the ongoing discourse about the role of the Minister and the regulator in this industry especially following the court ruling in *Earthlife Africa v*

Minister of Energy and Others. Even without invoking the concepts (regulatory state and developmental state) used in this study, the participants were aware that the divide between policy making and regulation relative to each other was not resolved even although regulation had been in existence since the mid-1990s. According to some of the participants, the roles of both the Minister and the regulator were unavoidable considering that politicians were not willing to hand over full responsibilities to the regulators. Instead of the regulatory agency taking responsibility for the entire licensing process, it was being implemented as a shared responsibility. Some of the participants, however, argued that the shared responsibility between the regulatory agency and the policy maker in the industry reflected the neo-liberal origins of the regulatory state. In their view, government was constrained to discharge its electoral mandate because it was bound to follow what was happening in the whole world with the adoption of the regulatory state even if it was not going to work in the South African context.

Policy Expert 1, for instance, indicated that the creation of the regulators in the 1990s had never been in the plans of the ANC throughout its existence until after its unbanning in 1990. He pointed out that the ANC only came to terms with the need for regulators upon assuming power, as the whole world was embracing them. Policy Expert 2 added that there were still questions on whether the regulator in this industry, as well as the others in other industries, has assisted to achieve efficiency as a goal of regulation, or whether the regulators and the current regulatory models of collaborative governance between the policy makers and the regulators have continued even though they were failing to achieve efficiency in the different industries. This view was supported by Industry Expert 3 who argued that the notions of regulators was not suitable for South Africa and other developing countries but were attempts by the developed world and associated institutions like the World Bank,

International Monetary Fund (IMF) and the World Trade Organisation (WTO) to undermine governments and politics in the developing world.

This view about the imposition of the regulatory state in the developing world was mentioned even though the developed world also introduced similar regulatory institutions and developed countries were grappling with ongoing measures to improve efficiency. Organisations such as the OECD, comprising mainly of developed countries, have been at the forefront of regulatory reforms to achieve efficiencies in the monopoly and the liberalised industries. For instance, the OECD has introduced the OECD Measuring Regulatory Performance Programme that seeks to help members of the OECD improve "regulatory quality" in their regulated industries (OECD, n.d.). As one of its purposes, the programme seeks to measure regulatory performance to diagnose failures and successes with a view to improve overall functioning of the regulated industries.

Regulatory Expert 1, on the other hand, argued that the government was not committed to independent regulation but was more concerned about advancing its ideology of state intervention and interference with the work of the regulator, which explains why policy makers had continued to direct the industries even when they were failing. She posited that there was generally no commitment to efficiency as government was obsessed with controlling everything in pursuit of the ideology of the developmental state. Regulatory Expert 1 further posited that collaborative governance between the Department of Energy and NERSA was created by the politicians because government did not allow the regulator to take final decisions on licensing matters.

Collaborative governance was, according to Regulatory Expert 1, a mere compliance posture by the government to pacify the private sector while committing to do something else. This view suggested that government was pursuing two objectives at the same time, namely, advancing its goals of the developmental state while at the same time allowing

aspects of the regulatory state. Regulatory Expert 2 also argued that the government grudgingly accepted regulation because it was in line with its plans to liberalise the generation market but the "enthusiasm fizzled out" when it failed to achieve this objective and had to revert to consolidating Eskom as a monopoly.

This view about the compliance nature of government's embrace of the regulatory state was echoed by Regulatory Expert 3 who posited that were it not for the compliance-driven commitment to the regulatory state, there would have been no need for the separation of NERSA and the Department of Energy because neither of them had the capacity to do what they were meant to do. She further highlighted that NERSA was deliberately under-resourced both in terms of human capital and political support to stand up to a favoured monopoly, Eskom.

Concerns about the capacity of the regulatory agencies were also mentioned in the National Development Plan,[15] which recommended their review amidst their failure to achieve efficiency, among other objectives. She concluded by pointing out that it was inevitable that NERSA would fail because government was always committed to a state-led trajectories even when it was failing, arguing that "everything was just a case of fulfilling an ideological preference than doing what was supposed to be done". Regulatory Expert 2, however, argued that it was the right thing for the Ministers to consult the regulators when making policy determinations as doing so made it easy for the regulators to implement, while they had to be independent from the politicians and the regulated entities when making final determinations or regulations.

The Industry Experts also commented on the role of politics leading to collaborative governance. Industry Expert 1, for example, postulated that, since the introduction of collaborative governance, price regulation was still not fully optimal but the prevailing

[15] Chapter 4 of South Africa's National Development Plan.

arrangement was allowed to continue because the government could not "let go" and "hand over power to an independent regulator". As also argued by Industry Expert 3, "there was no way that politicians could hand over the running of the industries to technocrats who were not even elected by the voters". He emphasised that the government had to be involved in the running of the critical industries to ensure that it could take responsibility as it accounted to the voters whenever things did not "go right", that is in the event Eskom failed to be provide services. Industry Expert 3 emphasised:

> Infrastructure and network industries were significant to the economy and thus government had to have its pulses where it matters. We cannot expect politicians to contest elections only to suggest that they have no role in critical governance matters. Other participants also indicated that there was a link between the "unworkable" collaborative governance with government's preference for a monopoly in the industry.

Regulatory Expert 4, for instance, pointed out that NERSA was not failing but was doing its "best in the circumstances" wherein it had to deal with a state-owned monopoly that was not of its creation – but had persisted over many years due to policy preferences of how services were provided through a monopoly. This conclusion raised questions on whether NERSA was deliberately targeted to weaken it or whether its limitations reflected a state-wide capacity challenge facing State Owned Companies and other state entities.[16] Although there was no specific evidence to suggest that NERSA was deliberately weakened, this sentiment raised questions about the capacity of the regulator, one of the issues that has dominated scholarship over the years.

[16] The State of Capture Commission (2022) reported widespread pillaging of some state-owned companies especially ESKOM due to corruption enabled by some of the leaders in government and in the State-Owned Enterprises. The regulators were not part of the entities that were targeted or found to have been captured. At the same time, the Minister of Finance, Enoch Godongwana, announced that government had limited resources to bail out troubled State-Owned Companies (Godongwana, 2022). There was no mention of any support to the regulators even though government has stated its intentions to prioritise network industries.

The preference for a state dominated industry was also evident in the argument by some of the participants who identified regulation with the role of the private sector. Industry Expert 3, Policy Expert 1 and Policy Expert 2 pointed out that handing over power to the regulators was going to favour the private sector as technocrats would be inclined to be seen to be bidding for the market while there was still a significant role of the state in the industry to ensure service redistribution. This view raised questions about the possibility of capture of the regulators by the private sector at a time when the Judicial Commission of Inquiry into State Capture revealed the role of politicians and executive managers in the capture of state institutions including ESKOM (Judicial Commission on State of Capture, 2022). Although this study explored the influence of ideology rather than of capture, the data still indicated that the two co-existed especially in this industry.

4.1.3 The Challenge of Institutional Inertia

As suggested by Caballero and Soto-Onate (2016), the political nature of the regulatory state was evident due to institutional inertia and the preference for the status quo, which are characteristics of self-reinforcements and lock ins. The concepts self-reinforcements and lock in have been associated with economics for a long time yet they can be applied in politics as well. In this context, self-reinforcements and lock ins happened when institutions persisted even when they were failing. As will be shown below, the current institutional arrangement had remained the same even when the industry was failing. Self-reinforcements, also known as increasing returns, can be observed as the role of the different institutions, especially political ones, was increasing instead of reducing amid failure. And the fact that the institutions continued over the years suggested that there were limited options or alternatives.

Various participants argued that it was no longer feasible to undo the current institutional arrangements, or that doing so, was going to take a significant amount of time. Policy Expert 1 and Policy Expert 2 indicated that it was no longer possible to change the existing institutional arrangements as any alternative was bound to reduce either the role of the politicians or that of the regulator. According to Policy Expert 4, on the same issue, there was evidence that the government was not going to change the failing systems or approaches if doing so means "losing power" to the regulators. Government therefore wanted it both ways; to be involved in the appointment of the regulators but still to be involved in the industry matters. Regulatory Expert 1 and Regulatory Expert 2, though agreeing that changing the status quo was going to take a long time, still argued that these institutions had to change for the industry to focus on real and substantial issues to overcome the challenges posed by ESKOM, which was a failing monopoly that has been allowed to continue for the sake of fulfilling the role of the state in the economy.

Against this background, the next section investigates the influence of the prevailing institutional arrangement on efficiency in price regulation in the electricity industry.

4.2 The Influence of the Institutions of the Regulatory State on Efficiency in Regulation

This sub-section focused on the influence of the institutions of the regulatory state discussed above on efficiency in price regulation. This analysis was concerned with how collaborative governance as discussed in the foregoing, influenced and shaped performance in this industry. An analysis of this nature was necessary considering that the collaborative governance was about the role of the policy makers and the regulators in shaping the market. The section explored the discourse in relation to some of the licensing undertakings such as of Kusile and Medupi, as well as the independent renewable energy projects, which have been significantly influenced by the prevailing institutional environment.

4.2.1 Efficiency Challenge and the Institutional Dilemma

As stated in the foregoing, the interplay between politicians and the regulators does not happen for its own stake but entails the struggle to direct the industries and their markets. Thus, the effectiveness or failure of any institutional arrangement manifests in the way the market function.

Some of the participants expressed concerns about the lack of transparency during the consultations between the policy maker and the regulator when issuing determinations for licensing. This was particularly the case as consultations between the Minister and NERSA were held in private yet the final determinations issued by the Minister were binding on NERSA. The participants generally argued that there was a link between transparency and efficiency in price regulation. Transparency was thus mentioned by Regulatory Expert 2 among others, as an important pillar of good regulation. Regulatory Expert 2 further pointed out that it was not enough for the Minister and the regulator to maintain a good relationship when the industry was failing. Compared to the telecommunications industry, the relationship between the successive Ministers of Energy and NERSA can be said to be cordial potentially because they engaged in private. As evidence, Regulatory Expert 1 indicated that it was impossible for NERSA and the Minister to take each other to court because their engagements were private. As will be shown in the Chapter 5, the Minister of Communications and ICASA resorted to the courts to settle their disputes on the licensing of the radio frequency spectrum. Regulatory Expert 1 and Regulatory Expert 2 pointed out that failure in this industry could therefore be attributed to the fact that, in his view, NERSA was always made to follow the thinking of the Ministers by supporting determinations that damaged the industry instead of it acting as an independent regulator. In their view the failure of this industry could be attributed to the way that the Ministry and NERSA had functioned

as if they were one by agreeing on everything instead of overseeing and reporting each other's behaviour to the public or the courts.

The participants indicated that efficiency as a goal of regulation was generally elusive and was unattainable because of the failure of the key institutions. Policy Expert 1 in particular indicated that while the goal of government was to ensure that "infrastructure should be provided sufficiently and efficiently to meet demand and stimulate upstream and downstream industries", but these goals have not been fully realised. He emphasised that the current challenges facing the electricity industry had made it difficult for the "lofty" goals of the government to be realised. Although the scope of the interview and the study was on the developments since 1994, Policy Expert 4 pointed out that the decline in electricity infrastructure started in 1975, and since then, investment in infrastructure had slowed down and was not being consistent. He, however, pointed out that there were "some" investments in the late 1970s and the early 1980s with Majuba as the last power station to be constructed, starting in 1983 and commissioned in 1996. To him, this meant that between 1996 and the 2000s there was either no infrastructure or what existed was dilapidated and in need of significant investments to maintain infrastructure and provide services.

He attributed this situation to the debates that started towards the dawn of the democratic dispensation and the advent of the ANC-led government in 1994, which were in favour of liberalisation of the electricity and other industries to reduce the role of the state in the economy. This paradigm, according to Policy Expert 2, was in line with the self-imposed Structural Adjustment Programmes (SAPs) in the form of the GEAR strategy which sought to reduce state investment in the economy. Policy Expert 1 specifically cited the influence of the Berg Report issued by the World Bank in 1981 directing countries in sub-Saharan Africa to implement Structural Adjustment Programmes (SAPs) leading to what he called the "hollowing out" of the role of the state in building critical infrastructure especially in the

electricity industry. Although South Africa was a pariah at the time due to apartheid and was thus not directly affected by the recommendations of the World Bank, it later followed a path that was crafted by these institutions for developing countries.

According to Industry Expert 3, "GEAR treated state entities as fiscal liabilities as opposed to being levers of transformation". In his view, government made many concessions to the World Trade Organisation, going beyond the expectations of these institutions. This perspective, although not backed by evidence, was also in line with COSATU and the SACP's anti-liberalisation and privatisation stance, discussed in Chapter 1. This view was advanced even in the absence of evidence regarding the extent to which neo-liberalism could have influenced a market structure that ended up as an inefficient government monopoly. This view about external influence or coercion was also common in the views of the participants in this industry besides the fact that there were no specific WTO commitments to liberalise the electricity industry. Commitments to liberalise the electricity industry, especially the generation market, were set out in the government's White Paper on Energy Policy for South Africa, 1998 (White Paper of Energy Policy).

However, there is evidence to show government's incoherent approach to reforms in this industry, which explains a complex balancing act to embrace the regulatory state and the developmental state. According to Policy Expert 3, the policy choices made by government at the time were contradictory considering that government was at the same time advocating a universal access policy to ensure that all households had access to affordable electricity. He highlighted that in 2004, then President Thabo Mbeki announced that government would achieve full universal access by 2012. Although his was not achieved, by 2012 about 83% of households had access to electricity. Industry Expert 4 also pointed out that since 1994, government had pursued a policy to ensure universal access wherein all new households would be provided with affordable electricity, which increased demand while generation was

slowing down. Industry Expert 2 spoke on the same issue, indicating that government should have anticipated that the surplus that had existed since the late 1980s was "artificial" because, by 1994, only 30% of the households in South Africa had access to electricity, and the surplus was "bound to be exhausted as soon as more households were connected".

Regulatory Expert 2 pointed out that it was because of the electricity surplus and government's plans to achieve universal access that it reached a pricing compact with Eskom wherein Eskom would set its prices at no more than the rate of inflation, which according to Regulatory Expert 2 amounted to dumping the surplus into the economy. Regulatory Expert 2 further indicated that the surplus happened because in the 1980s government built more power stations to support the growing gold industry, and it was not by design that there was a surplus. He indicated that the demand for gold was high across the world and therefore South Africa, as one of the leading producers of the precious metal, had to increase its electricity supply to support the industry. However, he pointed out that in response to the demand in the gold industry, government opted for mega projects instead of smaller power generation plants, which take a short time to build. He also added that:

> As a state monopoly, ESKOM would not buy existing plant-built solutions off the shelf but preferred to build on its own. In the late 70s and early 80s things did not go right. What we have now is the repeat of what happened in the past when we needed power for the booming mining industry at the time. The gold price was booming and South Africa needed more power but could not finish its mega projects on time and experienced serious challenges in finalising its own plans. Kriel and Duvha were some of the stations that experienced design and implementation challenges. What happened with that experience is that you spend a lot of money on assets that are not generating electricity when you need it.

According to Industry Expert 1, prior to 2001, when transparent price regulation was introduced, Eskom was cross-subsidising poor areas by charging higher prices in affluent areas. This, she pointed out, made it possible for Eskom to drive universal access but that changed because government was now also talking about transparent pricing. It is within this context (as explained by Regulatory Expert 2) that Industry Expert 1 pointed out that government declined Eskom's proposal to build new power stations, preferring instead to open the generation market to the private sector as set out in the White Paper on Energy Policy, 1998. "This was beside the fact the projections in the White Paper already indicated that South Africa was going to run out of supply by 2007", she emphasised.

However, as argued by various participants, the private sector did not invest because of the low prices that prevailed at the time due to the pricing compact between the government and Eskom. Regulatory Expert 3 and Industry Expert 4 indicated that the failure of government's reforms was again due to pursuit of multiple policy objectives, mainly its attempts to ensure low prices, accelerate universal access and also open the generation market to the private sector. Industry Expert 1 further indicated that as part of the market reforms, and in anticipation of the private sector-led model, Eskom also mothballed some of the ageing generation infrastructure. However, she pointed out that the surplus was depleted after 2005 and by 2008 Eskom had introduced load shedding to meet the demand, which also necessitated the recommissioning of some of the mothballed power stations, at a huge maintenance cost. The failure of the government reforms set out a new electricity path dominated by Eskom with the costs of the utility increasing significantly as a result of the use of the Open Cycle Gas Turbines (OCGT), which are plans that use diesel to mitigate electricity shortages, and this came at a cost for consumers and business users. The high costs manifested in the impact on industrial policy, as indicated in the following paragraphs.

Policy Expert 2, among others, pointed out that government's reform programme was a significant policy failure. He argued that it was an anomaly considering that the Industrial Policy Action Plan (IPAP) – introduced by government to support manufacturing and other industries – was based on low electricity prices which was expected to last for a significant period without prices having to increase astronomically. In his view, the policy emphasis on manufacturing was supported by the fact that unlike agriculture, for example, manufacturing was "always" associated with high incomes that are required for a country to "graduate" into a developed country. He argued that this happened while there was evidence in the world that the electricity industry played a significant role in industrialisation in the developed world with the advent of electricity in the late 1870s, leading to the Second Industrial Revolution. In his view it was impossible to talk about South Africa becoming a developed country until manufacturing constituted 25% of the economic output, which was a trend in most emerging markets. He highlighted that "manufacturing in South Africa halved over the years to 13% in 2019 from 25% in 1994 and this is attributable to high electricity prices that have increased by over 100% in the same period".

This view was echoed by Industry Expert 5 who pointed out that the automotive industry in South Africa (in 2019) was already experiencing challenges due to the surge in electricity pricing, such that the industry was continuing in South Africa because of the incentives provided by the Department of Trade, Industry and Competition, otherwise the investors would have relocated to other competitive markets in South America and East Asia. The arguments advanced by Policy Expert 2 and Industry Expert 5 highlighted misalignment between different government policies, in this case between the electricity policy and the industrial policy. According to Industry Expert 5:

> Overall, the current situation is a complete policy failure. From a policy point of view, government has failed to move away from obsession with Eskom in favour of opening

> new opportunities. The Department of Minerals and Energy and the Department of Public Enterprises have not succeeded at all, and Eskom has been left to lurch from one crisis to another.

This reality raised questions about the misalignment of various government policies and plans. To further explain this reality, Industry Expert 5 pointed out that:

> Other departments see industrial policy as a product of the Department of Trade, Industry and Competition. This eventually results in government departments having to lobby each other instead of pursuing a seamless integration of the different mandates. This is beside the fact that state entities should be catalysts for growth throughout the economy.

He further pointed out that the misalignment was not unique to the electricity industry but was common even in other state-dominated industries such as transport wherein most state entities were even experiencing governance, performance and unstable financial situations. He cited South African Airways and the Passenger Rail Agency of South Africa (PRASA) as some of the examples of the failure of the state sector. In his view, the failure of the state entities to meet their obligations and mandates was mainly a manifestation of policy failure at the level of government and not the regulatory administrative entities, in this case NERSA.

Initial commitments to liberalise generation were set out in the White Paper on the Energy Policy, 1998, which included provisions to restructure Eskom into generation and transmission services and the consolidation of the distribution services into regional electricity distributors did not progress as initially envisaged. Eskom has continued to operate as a monopoly, even after the licensing of the IPPs, which are required to only sell electricity to the state utility.

The participants also mentioned that costs and prices had been increasing on an annual basis since the late 2000s, even while production remained unchanged. According to Regulatory Expert 2, the discourse on the state of electricity prices in South Africa, whether they were high or not, depended on what was being compared. However, he indicated that the current electricity prices in South Africa were the highest since 1950. Industry Expert 4 and Regulatory Expert 4 also indicated that the electricity prices in South Africa had increased "year in and year out" even when the economy was not performing and demand slowed due to the global economic crisis since 2009.

Policy Expert 3 and Industry Expert 3 highlighted that electricity prices in South Africa had increased above the production capacity and output of Eskom, as shown in Chapter 1 above. The increase, according to Policy Expert 2, represented one of the failures of the post-apartheid dispensation, considering that by 1994 South Africa was one of the cheapest electricity markets in the world. Regulatory Expert 2 pointed out that "we have never seen this before. Despite the advances in technology, which should bring about innovation and efficiencies, we still have high prices". This, he argued, was besides the fact that growing an economy over a low-price trajectory was needed to build market confidence and attract investors who would expect the prices to remain unchanged over time. This is in stark contrast with the situation in the airport and telecommunications industry where the regulated tariffs have generally declined since 2009.

Table 21 provides an overview of Eskom's performance over a 10-year period between 2007 and 2018. More generally, this diagram shows that while Eskom's cost structure has increased over the years, this has not been matched by productivity, which has remained largely unchanged.

Table 21

Eskom's Performance Overview (2007-2018)

	2007	2018
Total Installed Capacity (MW)	42 618	43 260
Electricity Sales (GWh)	218 120	212 190
Revenue (R'bn)	39,4	177,4
Average selling price (c/kWh)	18	85,06
Coal Purchases (Mt)	117,4	115,49
Coal Costs (R'bn)	10	53,8
Employee Costs (R'bn)	9,5	29,5
Employee Numbers	32 674	48 628
Debt Securities and Borrowings (R'bn)	40,5	388,7

Note. From Department of Public Enterprises (2019, p.10)

4.2.1.1 Electricity distribution and the municipality debt crisis. The restructuring of the distribution market is also important for this study given the failure of some of the municipalities to pay Eskom for bulk electricity supply, which in turn they sell to the households in their respective jurisdictions. Government's initial attempts to restructure the electricity distribution market in the 1990s did not materialise after Cabinet decided in 2010 not to proceed with the introduction of the six regional electricity distribution services (REDS) providers, which would have taken over the distribution mandate from the municipalities (Yelland, 2010). The decision to discontinue the restructuring followed the ANC's 2007 national conference resolution to reverse the government's decision to amend

the Constitution thereby enabling the transfer of the distribution function to the REDS. In its resolutions, the ANC noted that electricity was one of the main revenue sources for local municipalities and their viability was dependent on it (ANC, 2007).

As a consequence, plans to amend the Constitution to provide for the transfer of the distribution mandate from municipalities to the REDS did not proceed, halting the restructuring of the distribution system, reverting to the old arrangement of Eskom providing distribution alongside the municipalities (Yelland, 2010). A constitutional amendment would have been necessary, since the Constitution empowers municipalities to distribute electricity in their respective areas. The reversal of the decision to restructure the market, where municipalities provide distribution, has been fraught with challenges, with some municipalities owing Eskom longstanding debts, as indicated in Table 22.

Table 22

Top Highly Indebted Municipalities (December 2020)

Top 10 Defaulting Municipalities	Province	Total Debt (R million)
Maluti a Phofung	Free State	3 264.94
Matjhabeng	Free State	1 956.60
Ngwathe	Free State	1 046.93
Emalahleni	Mpumalanga	2 162.99
Govan Mbeki	Mpumalanga	831.46
Lekwa	Mpumalanga	645.62
Thaba Chewu	Mpumalanga	517.29
Modimolle	Limpopo	332.15
Ditsobotla	North West	352.69

Note. From Department of Public Enterprises, personal communications, 30 March 2020

These challenges due to the inability of the municipalities to pay exacerbated ESKOM's financial challenges amidst a staggering debt of R440 billion in 2020. The ANC's decision to do away with the restructuring of the distribution market did not provide a solution to dealing with the ESKOM's financial challenges arising, in part, from political considerations. As mentioned above, the construction of Kusile and Medupi also highlighted the limitations of institutional governance in the electricity industry in South Africa. The same can also be said about the licensing of the IPPs in light of the ongoing debates on whether they were worth it considering that they, as in 2020, contributed 5% to the grid while government had committed a guarantee of R350 billion should ESKOM default on its power purchase agreements with the licensed providers.

The impact of Medupi and Kusile as well as the IPPs are discussed further in the following paragraphs.

4.2.1.2 The Impact of Kusile and Medupi. The licensing of Medupi and Kusile power stations is often cited to explain the nature of failure and its implications for efficiency. The participants pointed out that the budget overruns have been as a result of poor planning, which arose from government's decisions, against the advice of Eskom, in favour of building additional power stations when it was opportune to do so. Regulatory Expert 2 pointed out that the decision to build two meagre power stations on short notice was bound to come at a cost and Eskom would justify its future existence because of the unfinished business. Industry Expert 1 argued that someone had to pay for these failures associated with political decisions, and money has to come from the users even though the costs were not efficiency incurred.

As already indicated above, the data shows that government was responsible for the delay in the construction of Medupi and Kusile. The failure of Kusile and Medupi happened in an environment characterised by collaborative governance. This is important considering that NERSA was responsible for the licensing of the two power plants pursuant to the

Ministerial Determinations. According to Regulatory Expert 2, Industry Expert 1 and Industry Expert 3, Eskom was given a short notice by the government to build Medupi and Kusile, leading to poor planning and implementation of the projects. They pointed out that due to limited time given to construct the power stations, Eskom resorted to old technical and financial plans that were last used in the construction of Majuba, which was completed in 1996. This is beside the fact that according to Industry Expert 1, it would generally take no less than five years to design a power station and not less than eight years to construct a power station of the sizes of Kusile and Medupi (4800MW each). Industry Expert 1 further argued that:

> There is confusion in the market and the general public about the cost of the two power stations and their budget overruns. It needs to be clarified that the budget overruns happened because from the onset the budget[s] used were estimates based on something that was done twenty years ago. ESKOM did everything under pressure. This generally showed poor political decision making on such a crucial issue. On its own Eskom had been preparing on the side by starting to source coal, which though limited, eventually assisted.

She further added that "that was at a time when ESKOM also had to buy equipment outside the country as South Africa does not produce most of what was required to build two new power stations, a reality that was also exacerbated by an unstable exchange rate". Industry Expert 3 indicated that when the decision to build Medupi and Kusile was taken, ESKOM had limited funding without any capitalisation from the fiscus and the role of the regulator became a significant focus, while at the same time, ESKOM was paying other debts related to the use of Open Cycle Gas Turbines (OCGT), which cost more than coal and renewable energy sources. Industry Expert 2 and Industry Expert 3 indicated that faced with its inability to maintain a stable power supply, ESKOM opted for the OCGTs. According to Industry

Expert 4, this was done besides the fact that the "overuse" of OCGTs could also damage the generation plants but that was allowed in the MYPD because there were no other options when ESKOM failed to achieve the required Energy Availability Factor due unscheduled maintenance as most of its power stations had aged.

While acknowledging that building new power stations was inevitable, Regulatory Expert 2 argued that government and Eskom did not have to build "mega projects", in reference to the size of Medupi and Kusile. Instead, he posited that they should have opted for small, modular off the shelf power stations that could be expanded overtime as an when it became necessary. He further argued that:

> Instead of building incremental solutions government opted for mega projects that take 15 years to build and repeated the mistake of the 1980s. Government did not learn anything from the past. It can take three to four years to build a smaller plant and increase it over time when it becomes necessary. It is really about whether the configurations of technologies and economic risks are understood by both the government and the company. Politicians love mega projects, which increases risk while the risk in the private sector is lower as they follow smaller projects and less capital risks.

In addition, he argued that "companies don't need a single 600MW plant, for example, you can have multiple wind or solar farms. You can have hundreds of players in the generation market; you do not need a monopoly anymore".

On the same issue, Industry Expert 4 pointed out that Eskom did not use its own skills, which were side-lined in favour of consultants. This was in contrast with the view of Regulatory Expert 3 and Industry Expert 3 who indicated that Eskom had lost its own internal capacity to build power stations as soon as government decided (in 2003) that it would no longer build generation infrastructure. However, Industry Expert 3 pointed out that:

> The side lining of Eskom's own internal capacity was deliberate to enable rent seeking and corruption. There are allegations of corruption and the security services are investigating and these issues also came up at the Zondo Commission. Part of reported corruption include[s] people using Eskom's money to build solutions and later come back to sell to the company at a premium.

According to Policy Expert 1, the contractors also took advantage of the lack of proper planning which resulted in rent seeking and corruption. He added that even contract management was bad because Eskom was not ready for what eventually happened. And according to Policy Expert 2 Eskom entered into over 30 contracts that were not aligned to each other, contributing to potential rent seeking and corruption as revealed in the final report of the Zondo Commission,[17] which pointed to coordinated corruption within the company involving senior executives and board members with private individuals.

By 2019, Medupi and Kusile were estimated to have cost R145 billion and R161 billion, which was over the initial budget of R70 billion and R80 billion, respectively (Creamer, 2019).

4.2.1.3 The Impact of the Independent Power Producers (IPPs). The licensing of the renewable energy projects has also shown the challenge of managing the interplay between the two actors. For instance, the licensing process for renewable energy is managed by the Department of Minerals and Energy (DMRE) through a bidding process that also produces the market price. NERSA issues licences following this process raising questions about the extent to which the regulator can still determine prices after a bidding process has been concluded.

[17] Prior to the release of the Judicial Commission on State Capture Report in 2022, in 2019, the North Gauteng High Court ordered Mckinsey and others to return close to R1.7 billion to E for a contract that was awarded corruptly (Eskom Holdings SOC Limited v Mckinsey and Company Africa (Pty) Ltd and Others (2019)). Another major contractor, ABB, returned R1.56 billion for a contract that was also awarded corruptly (DPE, 2020).

The prices of the renewable energy projects do not follow the same process that is used in the determination of Eskom's tariffs. Although NERSA stated (in its MYPD document) that it was also responsible for price determination for renewable energy, Policy Expert 3 challenged this, pointing out that the role of the regulator in this regard would render the outcome of the bidding process, futile which was not the case in practice. In his view, the role of the Department in determine the bidding prices when there was a regulator was evidence of NERSA being marginalised, as it was used to validate the outcome of tenders.

The licensing of IPPs has also been contentious as their cost to Eskom was estimated at R350 billion in 2020, while only contributing a paltry 5% of the generation market (Creamer, 2020). The discourse on the implications of the high tariffs of the renewable power producers, particularly those of the first bid windows, have also led to government Ministers asking the successful bidders to voluntarily reduce their tariffs set out in their twenty-year power purchase agreements. Figure 9 highlights the trends in the tariffs of the IPPs since the licensing of 'Bid Window 1 in 2012, pointing to a significant reduction with each successive bid window.

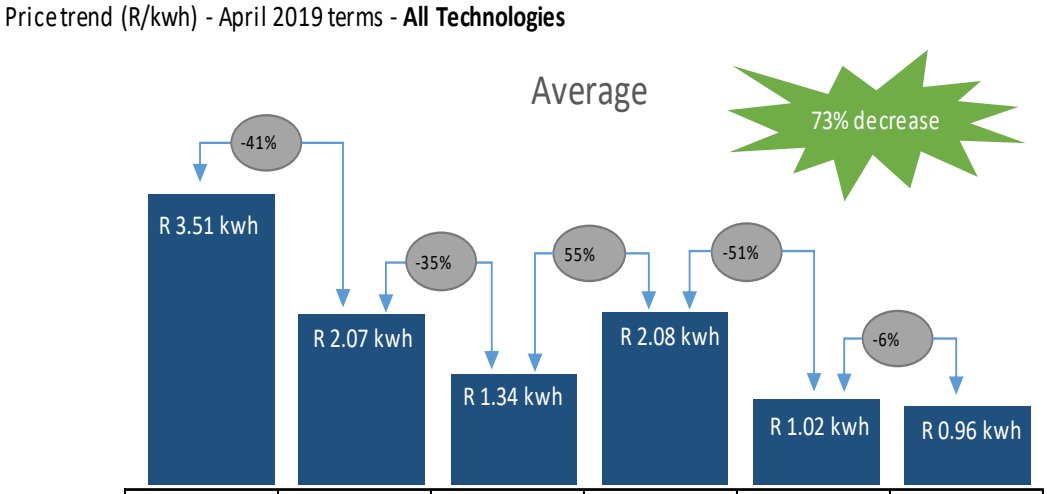
The influence of the IPPs points to different paradigms as far as their impact was concerned. The cost of the IPP is included in the tariff application. Two schools of thought have emerged to explain the cost structure of the IPPs between those who argue that the costs of the first bid window couldn't be justified considering the limited size of the contribution of IPPs to the grid at 5% of the total output. While generally agreeing that the tariffs of the IPPs have been in decline as shown in Chapter 1, this school of thought argued that the benefits have been limited by the length of the first contracts, which entail 20-year power purchase agreements that Eskom is required to honour, supported by government guarantees.

Policy Expert 3 argued that the cost was not justifiable considering that the IPPs contributed only 5% of the baseload and the tariffs of the first bid windows were set for a 20-

year period without a provision for a review. He pointed out that the government Ministers were running "helter-skelter", pleading with the successful bidders in the first bid windows to voluntarily reduce their tariffs in response to the public outcry. Policy Expert 2 and Regulatory Expert 3, on the other hand, indicated that, the cost of IPPs, especially in the early stages, were justifiable because government needed to attract investments and create a new industry. Figure 8 highlights the pricing trends of the IPPs over the different bid windows.

Figure 8

Overview of Renewable Pricing Trends in South Africa



	BW 1 1425 MW	BW 2 1040 MW	BW 3 1457 MW	BW 3.5 200 MW	BW 4 2205 MW	BW Exp 1775 MW
Average	3.51	2.07	1.34	2.08	1.02	0.96
Min	1.70	1.22	0.91	1.96	0.72	0.67
Max	4.36	3.84	2.25	2.20	1.88	1.81

Note: All tariffs are contracted to increase by CPI or less per annum over the PPA term (in other words in real terms the price stays the same for the 20 years). It should also be noted that BW1 and BW2 price trends cannot be compared with BW3, BW3.5 and BW Exp since there is no peak tariff for BW1 and BW2. 4 BW 2 and 1 BW 3 projects are partially indexed resulting in a reduced tariff in real terms over the PPA term.

Note. From Department of Minerals and Energy (personal communication, 15 February 2020)

According to Industry Expert 4:

> The debate about the cost of the IPPs is a diversion from the real issues about the poor state of electricity in South Africa. There was a need for government to pay a particular price in the initial bid windows to enable the development of new technologies. To enable this, government had to give guarantees to the renewable energy providers in case Eskom fails to pay them. Half of the Eskom debt therefore includes commitments or guarantees that are supported by the government.

This view exposed another balancing act between the long-term industrial policy needs, that is, to create a new industry, and the immediate needs of the electricity policy. Industry Expert 4 further indicated that the initial plan was for government to determine the price of renewable energy but this was changed to the allow the market price through competitive bidding. So, in his view, what has happened is a product of a competitive market price through a transparent bidding process. Industry Expert 4 further argued that the anti-IPP lobby was influenced by another lobby for nuclear energy, which was still recognised as one of the medium to long term options as set out in the Integrated Resource Plan. This, he said, was exacerbated by the shift of the mandate to build nuclear power from NECSA to Eskom, which resulted in Eskom favouring the nuclear option at the expense of the IPPs.

Industry Expert 5 also pointed out that there was a huge opportunity to expand the IPPs across the different energy sources but this was constrained by policy uncertainty given the different messages emanating from the government and the governing party, the ANC, as there were factions within the party either for or against the renewable energy programme. He pointed out that while IPPs would contribute positively with costs reducing over time, it would be an opportunity for the automotive industry to invest in renewable energy on its own.

4.2.3 Implications for and the Role of NERSA

Some of the participants indicated that the prevailing situation in the electricity industry made of an unreliable service delivery was a result of government's actions and failure. The regulator was seen to have been weakened as a result of prevailing environment wherein ESKOM was struggling to provide electricity resulting in coordinated and planned load shedding in the country. It was evident in the views of the participants that the challenges faced could not be resolved by the regulator but required a coordinated effort including government being involved not only by investing in infrastructure but by changing how the industry was governed.

Policy Expert 3 pointed out that it did not matter which economic and cost accounting methodology was being you used in this industry "because everything boiled [down] to saving Eskom in order to keep the lights on". In the absence of alternatives to Eskom, the regulator was bound to play along hence its many discretions as set out in the MYPD. In the MYDP methodologies NERSA exercises discretion on the treatment of costs incurred beyond the control of the firm, some of which can be attributed to policy decisions and the pursuit of the political ideology of the developmental state.

Industry Expert 3 pointed to a possibility of regulatory forbearance wherein NERSA would grant ESKOM tariffs it did not deserve but indicated that the extent to which this happened was mitigated by the fact that NERSA and Eskom were under two different Ministerial oversights, Minister of Energy and Minister of Public Enterprises, respectively. This was a different arrangement from the situation in the airport industry wherein the Regulating Committee and ACSA were under the Minister of Transport as discussed in Chapter 6.

Policy Expert 2, however, suggested that the separation of the two was not a deterrent as this allowed the Minister of Public Enterprises to veto the decisions of the Minister of Energy whenever they were discussed in Cabinet. In his view, this was unavoidable considering the prevailing state of ESKOM, which would have collapsed were it not for the fact that it was state-owned. According to Industry Expert 3, this was a "catch 22" situation as there was no easy way out. Government has to incentivise ESKOM for failures associated with its decisions and in the absence of capitalisation and efficiency improvements, it was left to NERSA to intervene and increase ESKOM tariffs whenever there was a need to do so. And there was always a need because of the costs associated with the IPPs and Medupi and Kusile.

According to Regulatory Expert 2, the Rate of Return formula was selected because it was common in the electricity industry across the world. In her view, its use had benefited the utilities especially the inefficient ones such as Eskom in South Africa. Regulatory Expert 1 also indicated that any regulatory methodology could be used, but it depended on the environment and what was being regulated. He pointed out that in the case of Eskom, no regulatory model could address the challenges it faced because they were many and complex. Regulatory Expert 1 further pointed out that the shift towards efficient cost pricing was a significant undertaking considering that prior to the Electricity Pricing Policy, in 2008, price regulation was based on fully allocated costs wherein Eskom had tariffs based on its total costs, irrespective of whether they were efficient or not. The implementation of the Electricity Pricing Policy started with the introduction of the MYPD3 in 2013.

Regulatory Expert 2 and Regulatory Expert 4 posited that it was partly due to this approach (fully allocated costs) that Eskom received "high tariffs" in the MYPD1, and MYPD2. When MYPD3 was introduced, the aim was to ensure that the costs and consequently the prices were reduced significantly but this did not happen. However,

Regulatory Expert 1 and Regulatory Expert 2 pointed out that the MYPD3 did not achieve efficiencies, for the same reasons as in the past interventions. They pointed out that until the input issues are resolved, there could be no case in which the Rate of Return would lead to efficient outcomes. In their view, Regulatory Expert 2 and Regulatory Expert 4, as well as Policy Expert 4, Industry Expert 3, and Industry Expert 4 indicated that the Rate of Return formula used by NERSA to regulate Eskom's tariffs was therefore "just a nice to have", it was impossible to rely on such methodologies to solve a problem that was beyond the scope of the regulator.

However, even if NERSA tried to intervene, Regulatory Expert 1 argued, the chances of success were limited by the fact that its MYPD formula was open-ended as it incentivised everything. For instance, the MYPD states that all new building projects form part of the Regulatory Asset Base and were bound to be compensated. The MYPD also incentivises the use of the OCGT and mothballed power stations that could be used in a short space of time. She further highlighted that government has dumped the problems of Eskom that it had created at the doorstep of the regulator, which was trying its best.

Industry Expert 1 and Industry Expert 4 also emphasised that the MYPD was open-ended, a reason why ESKOM would always win court cases against NERSA. In the view of Industry Expert 1, NERSA had given too much discretion to itself so that it could punish Eskom when it found itself under pressure from politicians and the public. According to Industry Expert 4:

> We need a pragmatic approach to regulation without losing transparency. What NERSA does is to pretend to be pragmatic while at the same time killing transparency, which is not the right thing to do in modern regulation when there is a lot of data to develop new insights.

Policy Expert 4 argued that there was no point in changing the methodology while everything else remained the same. The solution, in his view, was more complicated because any other methodology including LRIC would have to ensure that prices were efficient and affordable when the behaviour of government and Eskom continued to increase costs. This understanding was shared by Industry Expert 1, Industry Expert 2, Regulatory Expert 3, Regulatory Expert 4, and Policy Expert 3, who generally pointed out that Eskom had reached its end; it was a matter of time before it collapsed, "going down with the economy".

Although the conventional conception of regulation has been confined to the regulators, the data pointed to the risk posed by political decision making and the pursuit of the political ideology of the developmental state on their effectiveness, that is achieving efficiency and other goals of regulation. This was evidenced by the views of the participants who argued above that it was not possible for the regulator to achieve the expected results when the other aspects of the regulatory value chain were ineffective.

4.3 Approaches to Improve Efficiency in Network Industries

The participants also recommended approaches to improve efficiency in price regulation in the electricity industry. The recommendations included policy alignment between the government and the regulator; effective oversight over Eskom, a funding model for the electricity infrastructure, review of the IPP tariffs, liberalisation of the generation market, regulation of coal prices, and transparency in the regulation of efficiency, as detailed below. The industry specific recommendations are also mentioned below as they form part of possible interventions to improve efficiency in regulation as set out in Chapter 7. They also broadly constitute some of the areas for further studies mentioned in Chapter 8.

4.3.1 Regulatory Expert 1 and Regulatory Expert 2 specifically recommended the review of the collaborative governance to enhance transparency but also to remove vague arrangements and requirements that amounted to appeasement such as the

purported role of NERSA in the licensing of renewable energy projects. This would entail the Minister taking final decisions. In their view, government should allow the regulatory agency to perform its licensing role unhindered.

4.3.2 Policy Expert 1 recommended that government should lead the investment in electricity infrastructure and not leave this to the private sector. This recommendation was made despite the fact that government currently leads investment in infrastructure through its support for Eskom and the guarantees by the state for renewable energy. The challenge, though, is that government's own investment in the electricity industry has not been efficient, evidenced by the state of Eskom. Meanwhile trends indicate the appetite for investments by the private sector seen in the growth of investments in renewable energy sources.

4.3.3 Policy Expert 1 also mentioned policy instability due to changes with every new Minister having to come up with new policies. To deal with this, he recommended that the policy of government should not be changed without justification and a mechanism was needed to ensure that any changes to government policy were evidence-based. This offers an opportunity for the introduction of future-oriented adaptive regulation and the strengthening of credible commitment and the use of evidence in policy making taking advantage of big data analytics.

4.3.4 In addition to this, Policy Expert 2 mentioned policy misalignment and recommended that the energy policy should be set centrally to ensure that it is not confined to the Department of Minerals and Energy but also responds to other needs of the economy, such as support for the industrial policy. In this regard, he recommended the establishment of a "super" department with various departments under it to ensure policy synergy. Such an option will need to be considered within an environment in which government Departments are equal.

4.3.5 For the market structure, Regulatory Expert 1 and Regulatory Expert 2 recommended that the current model of a monopoly should be reviewed in light of the changes in technology. They posited that ideology was no longer enough to justify the current model of Eskom being the sole provider of electricity especially in light of its current state with its huge, unprecedented debt. Given the significance of the economy and social life in general, Eskom was a huge risk to South Africa. There is a scope for the liberalisation of the generation market to allow competition while the transmission infrastructure is made available to all market players, subject to a transparent cost structure. Regulatory Expert 4 recommended that South Africa should set a target to increase the further opening of the electricity market in such a way that the renewable energy service providers are allowed to sell directly to the users but continue to use Eskom's transmission infrastructure at a regulated rate. The restructuring of Eskom recommended above can pave the way for the separation of transmission from generation and distribution thereby allowing the transmission infrastructure to be used by Eskom's competitors.

4.3.6 Policy Expert 3 recommended that coal prices should be regulated for the purpose of meeting national requirements as South Africa was one of the leading producers of coal, but the benefits were not visible as it had to compete with other countries such as China, which can afford high coal prices. Industry Expert 3 pointed out that there was a need for South Africa to declare sovereignty over its own resources. According to Regulatory Expert 1, it should be possible to regulate the coal prices but this was not happening because the "mining companies had a huge lobbying power". She emphasised that "the mining companies were making a lot of money and government has not been keen to regulate them. However, taking such a significant step will require that other forms of restructuring of Eskom are pursued

and accelerated. In particular, this may entail Eskom returning to coal plus mines", which it used to subsidise, and at the same time open opportunities for Black Economic Empowerment players to participate.

4.3.7 Policy Expert 3 also recommended that the IPP tariffs should be reviewed as it was no longer justifiable to have the IPPs accounting for 20% of primary energy costs, yet they contributed about 6% of the supply. This, in his view, should focus on the initial bid windows as there is now more evidence that they were overpriced. The tariffs of the successive renewable energy projects have been decreasing with each succeeding bid window, and attempts to reduce tariffs midway may affect credible commitment and reduce certainty.

4.3.8 Policy Expert 3 recommended that NERSA and Eskom should continue to fall under the different Ministries to avoid the capture of the regulators by the regulated firms. On the other hand, Regulatory Expert 1 recommended that the Department of Energy and NERSA should be merged into one entity in order to maximise the capacity and utility of the limited skills.

4.3.9 Regulatory Expert 4 pointed out that will also ensure that the Department of Minerals and Energy was independent of the influence of the regulated firm. Merging the Department of Energy will undo the regulatory state and reduce credible commitment in this industry. There were other ways to resolve the challenges of collaborative governance in this industry and these include the requirements for transparency in the interaction and the engagements between the Department of Energy and NERSA.

4.3.10 Policy Expert 1 and Industry Expert 4 also mentioned effective oversight and consequence management for failure and corruption. This, according to Policy Expert 4, should include the development of performance standards of the boards and

executive management, and strengthen shareholder compacts to regulate the "cozy relationships" between the regulated firm and the politicians. The high turnover of the boards and the CEOs at Eskom point to serious governance challenges that can be overcome with the introduction of further rules or institutions to enhance accountability and transparency.

4.3.11 Regulatory Expert 2 recommended that Ministers should not be involved in investment decision making; this should be left to the companies and their qualified managers. This points to the blurring of lines in that boards and their CEOs should be responsible for investment decisions subject to government requirements that should be set out explicitly in shareholder compacts and not be susceptible to *ad hoc* decisions.

4.3.12 Regulatory Expert 3 dealt with the politicisation of the debt that was owed to Eskom by the municipalities. This will require a coordinated approach involving Eskom and the South African Local Government Association (SALGA).[18] Municipalities should be supported to carry out the cost of supply studies. In addition to this, Regulatory Expert 3 recommended that the role of the municipalities in the distribution market needs to be review with the view to strengthening it. The role of the municipalities in electricity distribution is entrenched in the Constitution and constitutes one of their revenue streams. There is therefore a need to strengthen the capacity of the municipalities to improve their cost management systems and to collect debts from the unpaying customers.

4.3.13 Regulatory Expert 4 recommended that the MYPD methodology be reviewed considering the current state of the electricity industry as it was evident that NERSA

[18] The South African Local Government Association is an autonomous association of local government established in terms of its own constitution to advance the interests of its members including advocacy on matters of common interest (SALGA, n.d.).

would not implement its methodologies without destroying Eskom. Continuing to implement the MYPD methodologies to the fullest is not possible in the current environment. The transformation of Eskom recommended above will not be achieved overnight but will take time. Resolving the current electricity challenges will require various interventions, including restructuring itself to improve cost transparency, opening the generation market in such a way that it does not exacerbate Eskom's situation in the event that it loses its generation market share.

4.3.14 Industry Expert 1 recommended that there should be transparency in the calculation of the efficiency factor as this was not currently the case, and this should form part of the evidence-based approach to regulation in the electricity industry. Evidence-based regulation, according to Policy Expert 3 and 4, can be enhanced by the use of digital technologies such as data analytics and the Internet of Things. These technologies can first and foremost enable the regulator specifically to monitor performance in real time while at the same time generating data needed to inform decision making. In anticipation of the current challenges facing Eskom, NERSA has granted itself the responsibility to use its own discretion to determine what constitutes efficiency.

4.3.15 Regulatory Expert 1 and Regulatory Expert 2 have argued that government needed to review the monopolies and their role in the markets because its interventions have not produced the expected results; the state entities have failed to reduce costs and consequently the regulated prices. Regulatory Expert 2 also argued that given the advances in technology there is no longer a justification for a natural monopoly. Lastly, Regulatory Expert 2 recommended the restructuring of Eskom because it is no longer sustainable, given that its huge cost structure should precede the review of the market structure.

4.3.16 Various participants, among them Policy Expert 2, Regulatory Expert 1 and Regulatory Expert 4 indicated that there was scope to use digital technologies such as digital analytics and the Internet of Things to improve the quality of regulation. More generally, the participants recommended that the approach to digital innovations should be proportional so that both the regulator and the firm have access to similar innovations, cautioning that the imbalance in resources should not lead to the marginalisation of the regulator, which needs evidence to monitor the performance of the company. Regulatory Expert 1 further indicated that the use of data analytics would enable the regulator to monitor the behaviour and performance of the regulated firm in real time. He further recommended that the regulator should compel the regulated firm to also embrace digital innovations, which will enable the regulator to monitor its performance. Regulatory Expert 4, Industry Expert 1 and Industry Expert 4 further pointed out that the firm's digital innovations were inevitable as networks industries were beginning to embrace platform economies with profound implications for regulation. The use of digital technologies by the different actors in the value chain is gaining ground across the globe with the financial sector showing a lead. Learning from the financial sector, there is scope for the introduction and adoption of digital technologies by the regulators and the companies.

4.3.17 As in the telecommunications industry, some of the participants argued that the industries were overregulated. Industry Expert 1, particularly, pointed out that NERSA and Eskom will need a different approach to the MYPD because it was not producing any results either way. Given the current situation in the electricity industry, Policy Expert 4, Regulatory Expert 2 and Regulatory Expert 3 indicated that there was a need for alternatives to what has been known since the rise of the regulatory state. Regulatory Expert 3 argued that "we can no longer regulate for the

> sake of doing so even if we do not get the results. Things that are not working must be removed so that we can take difficult decisions. So far, government always opt for an easy way out to maintain peace in political circles while things are falling apart in the regulations domains across all industries". Although generally limited to the role of the regulator, there is evidence of systemic challenges facing the entire industry and the role of all the stakeholders, which require a complete review of the entire regulatory state.

4.4 Summary of the Chapter

The chapter presents the data from the review of documents and the semi-structured interviews with the participants in this industry. First, the data indicates that there was collaborative governance between the Minister and the regulator in this industry. Such an institutional arrangement was set out in the ERA, which enjoins the Minister to consult NERSA before issuing ministerial determinations. The ruling of the Gauteng High Court on the exercise of collaborative governance was reviewed. The participants were generally of the view that government accepted the regulatory state because it was common across many jurisdictions. They, however, suggested that the introduction of the regulatory state was not followed by specific interventions to ensure that it was working to achieve the expected results. While government committed to embracing the regulatory state, there were still decisions that were not informed by the quest to achieve efficiency. A cohort of decisions were attributed to political considerations rather than concerns about the efficient management of the industry.

A case in point was the licensing of Medupi and Kusile wherein, while the regulator was consulted, it did not undertake any public consultation that would have allowed the interrogation of Eskom's plans. This resulted in the licensing of two meagre power stations, Kusile and Medupi, without due consideration of their budgets and plans. The data indicates

that Eskom used its old designs for new power stations, resulting in budget overruns and delays in the completion of construction. The delay in the licensing of Medupi and Kusile has been attributed to political considerations wherein government gave ESKOM short notice to build new power stations after delays due to policy uncertainties. The data also shows challenges related to the role of the regulator.

Chapter 5: Policy – Regulatory Tensions in the Midst of Spectrum Scarcity in the Telecommunications Industry

This chapter presents the findings of the document reviews and the interviews with the participants in the telecommunications industry. As in the electricity and the airport industries, the findings are presented in line with the three research questions. Below section 5.1 focuses on the influence of the political ideology of the developmental state in shaping the institutions of the regulatory state. Section 5.2 of the chapter deals with the influence of the political ideology of the developmental state on the institutions of the regulatory state, followed in section 5.3 by the influence of the institutions of the regulatory state on performance. The chapter concludes with section 5.4 on approaches to mitigate inefficiency or improve efficiency in price regulation.

5.1 The Influence of the Political Ideology of the Developmental State on the Institutions of the Regulatory State

5.1.1 Institutional Design of the Regulatory State

The telecommunications industry is one of the cases of collaborative governance between the policy maker and the regulator where the relationship between the two is governed by specific rules set out in legislation. The prevailing institutional model and rules bind the policy maker and the regulator to engage with each other in accordance with the rules. The relationship between the Department of Communications and Digital Technologies (DCDT) and ICASA[19] is regulated by the ICASA Act and the ECA. The Minister of Communications and Digital Technologies is empowered to issue policies and policy directions for ICASA to consider when issuing regulations or undertaking licensing. In terms

[19] ICASA is the only industry regulator that is established in terms of Chapter 9 of the Constitution, alongside other independent bodies such as the Public Protector, the Electoral Commission, and the Auditor General. Institutions established in terms of Chapter 9 of the Constitution, including ICASA, are independent and only subject to the law (Constitution of the Republic of South Africa, Act 108 of 1996).

of section 3(1), "The Minister may make policies on matters of national policy applicable to the ICT, consistent with the objects of this act and of relation to-

(a) the radio frequency spectrum[20]

(b) universal service and access policy.

Furthermore, the Minister is empowered in terms of section 3(2) to issue policy directions to ICASA to undertake inquiries, determine priorities for the industry, and consider matters reasonably placed on it by the Minister. However, section 3(3) prohibits the Minister from issuing policy or policy directions "regarding the granting, amendment, transfer, renewal, suspension or revocation of a licence, except as permitted in terms if this Act". The exercise of collaborative governance in this industry is complicated by the fact that, unlike in the electricity industry where NERSA is required to implement the determinations of the Minister, ICASA is only required in terms of section 3(4) of the ECA to consider the policies and policy directions issued by the Minister. In the matter between the *Minister of Telecommunications versus the Chairperson of ICASA and Others* (2016), the Gauteng High Court ruled that the relationship between the Minister of Telecommunications and ICASA was not hierarchical but that of co-dependence between equal partners. In the view of the court, ICASA was not an agent of the Minister but an independent institution with its own responsibilities answerable only to the law.

ICASA, like the other two regulators, was therefore independently bound to comply with the various enablers of the constitutional regulatory state such as section 25 and section 33 of the Constitution. In particular, section 25 of the Constitution has been cited in the policy discourse on the licensing of the radio frequency spectrum, which pitted the Minister

[20] Spectrum licensing is used in this chapter as a case study of how the regulator- policy maker misalignment could negatively affect the growth of an industry. Although the latest legal disagreements and court challenges have been led by the regulated firms, especially Telkom challenging ICASA, there is still a need to study how delays in the licensing of the radio frequency spectrum spanning close to a decade since the introduction of the ECA in 2005 were influenced by a failing institutional context which persists to this day.

of Telecommunications against the regulated entities during the finalisation of the National Integrated ICT Policy White Paper, 2016 (ICT Policy White Paper). The industry insisted on transparency and adherence to the rule of law in the determination of the future spectrum licensing policy trajectory. Section 25 of the Constitution states:

> 25 (1) No one may be deprived of property except in terms of the law of general application, and no law may permit arbitrary deprivation of property.
>
> (2) Property may be expropriated only in terms of the law of general application –
>
> (a) for public purpose or in public interest; and
>
> (b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed to by those affected or decided or approved by a court.

Although ICASA was just one of the participants in the unfolding consultations between the Minister and the industry, the outcome of the discussions would have implications given the obligations on ICASA to consider policy issued by the Minister. As in the ruling of the court in *Earthlife Africa versus the Minister of Energy and Others*, ICASA would have been expected to undertake its own processes in accordance with PAJA. PAJA gives effect to section 33 of the Constitution. In terms of this section, state institutions are required to ensure that "everyone has the right to administrative action that is lawful, reasonable and procedurally fair, subject to the law. Public policy makers and regulators, like other state institutions, are to comply with PAJA, as it regulates decision-making procedures and practices of public entities to ensure fairness, promote accountability and enhance efficient governance. To give practical effect to the right to administrative action, section 2(b) (i)–(ii) of PAJA sets out the requirements for a fair administrative action. These provisions require administrative bodies to ensure that adequate notices are issued, citizens or affected parties

are given opportunities to make representations and are entitled to request reasons for decisions.

A possibility existed that ICASA would have arrived at a different conclusion to that of the Minister, leading to further misalignment between the two and therefore further delay in the licensing of the radio frequency spectrum.[21]

As it will be shown below, it is the exercise of this form of collaborative governance in the telecommunications industry that has defined the context within which the licensing of the radio frequency spectrum takes place.

The next section focuses on the influence of the political ideology of the developmental state on the making of the institutions of the regulatory state, leading to the prevailing institutional arrangement between the policy maker and the regulator.

5.1.2 The Making of the Institutions of the Regulatory State

Various participants, among them, Policy Expert 3 and Regulatory Expert 1, argued that the South African government had no option but to adopt the regulatory state as it also needed to attract investments in the emerging mobile communications industry. This was a period of "global boom" in new mobile communications technologies when countries were also in need of new investments in environments generally influenced by low macro-economic positions including dwindling finances (Bauer, 2013). In this regard, Policy Expert 3 pointed out that no firm would have invested in this market were it not for the regulatory paradigm that was introduced in South Africa, particularly the introduction of the independent regulatory agency, ICASA, a common practice in many jurisdictions. She pointed out that there might have been big markets in which the private sector invested

[21] The National Integrated White Paper on ICT Policy, 2016, has been amended with a separate policy and policy directions issued in 2019 wherein the Wireless Open Access Network will be licensed alongside the industry (Minister of Communications and Digital Technologies, 2019).

significantly even in the absence of an enabling regulatory paradigm, and South Africa did not have that opportunity. She further argued:

> We must not blame the past for the current issues and challenges that we face. All [t]hat we need are solutions, given the fact that it would be difficult to do away with the current institutional arrangements [that] have led to dichotomies between the policy maker and the regulator. Whose power are you going to reduce between the two?

Regulatory Expert 3 further pointed out that while the regulatory state was inevitable, there were opportunities for the state to continue to be involved in the industry as regulators were supposed to be state institutions even though sometimes they were seen and treated as outsiders. Concerns about the practice of treating regulators as "outsiders" was common across the industries wherein the governments were seen to have created them for compliance reasons but were not committed to allowing them to operate efficiently. Governments were seen to be more concerned about the roles of the Ministers than about ensuring that the industries functioned efficiently.

A case in point in this industry is the licensing of the radio frequency spectrum wherein successive Ministers in this industry attempted to issue policy directions for spectrum licensing but the process had remained inconclusive over a decade. The licensing of additional radio frequency spectrums has been pending since the introduction of the ECA in 2006, owing largely to uncertainties and disagreements on the respective roles of the Ministry and the regulator. For instance, in 2010, the Invitation to Apply for spectrum licences, issued by ICASA, was withdrawn at the request of the then Minister of Communications ostensibly because the Minister intended to issue a policy direction preceding the licensing of the spectrum (*Minister of Telecommunications versus the Acting Chairperson of ICASA and*

Others). Yet, at the same time, section 4 of the ECA empowers ICASA to issue regulations on any matter including the licensing of the spectrum as follows:

> 4(1) The Authority may make regulations with regard to any matter which in terms of this Act or the related legislation must or may be prescribed, governed or determined by regulation.

In line with this provision, ICASA can issue regulations in the absence of ministerial policies and policy directions. Ministerial policies and policy directions were optional in terms of the law but could be considered whenever they existed.

The court ruling found resonance in the ruling of the Gauteng North High Court in the matter between the *Minister of Telecommunications versus the Acting Chair of ICASA and Others.* Accordingly, the court ruled that: "ICASA is allotted the task of licensing a radio frequency spectrum in section 31 of the ECA. In that realm it operates on its own without reference to MOT" (para. 33). Given this legal construct reading with section 3 of the ECA, it follows that the extent to which the Minister could intervene through policy was constrained by ICASA's powers already vested in the law.

In this regard, some of the experts indicated that there was no need for commotion between the two state entities, the Ministry and the regulator, as servicing the industry should be the most important concern of both. This view was generally supported by Policy Expert 2, Regulatory Expert 2 and the various industry experts, indicating that the Minister had remained the most dominant actor in the industry years after the establishment of the regulators, and the role had grown even when the industry was faced with a myriad of challenges such as the poor handling of the licensing of the radio frequency spectrum. However, an observation could be made that the delay between the Minister and the regulator in the licensing of the radio frequency spectrum was due to power dynamics as the scope of the Ministerial policies was significantly limited by the law at a time when Ministers

preferred to have more say. This view was confirmed by various regulatory and industry experts who argued that the ECA gave ICASA significant powers to issue regulations and undertake licensing without any government policy. Industry Expert 3, for instance, posited that in reality, Ministerial Policy Directions have always stated the obvious, that is, asking ICASA to do what it was supposed to do in accordance with the law.

Policy Expert 1 also argued that market failure and regulatory failure in the industry were outcomes of an arrangement where "there is a regulator that has no obligation to implement the policy of government besides the fact that it takes not less than three months to finalise a Ministerial Policy or Policy Directions, following extensive consultations with the regulator, the industry and the general public". Unlike in the electricity industry where the Minister can issue final determinations without public consultation, the Minister of Communications is required to undertake public consultations before issuing policies and policy directions. Policy Expert 1 thus argued that allowing the Minister to develop a policy or policy direction that no one would implement was the main challenge facing South Africa, as, in his view, this was a practice unique to South Africa. In his view, ICASA's independence was not insurmountable to the extent of "precipitating a crisis" where there would be policies that cannot be implemented because doing so, asking the regulator to implement, would infringe on its independence.

However, a court ruling in *Altech Autopage Cellular (Pty) Ltd versus Chairperson of the Council of the Independent Communications Authority of South Africa and Others* (2008) pointed to a limitation on the extent to which ICASA can be expected to implement Ministerial Policy Directions. In this particular case, the Ministerial Policy Directions were found to have been unlawful and therefore set aside. As seen in the electricity industry in the case between *Earthlife Africa versus the Minister of Energy and Others*, the ruling was on the grounds of PAJA, that the Minister erred in not following a process set out in section 3 (3) of

the ECA and in failing to fulfil the requirements of PAJA. In terms of the ruling, ICASA could only implement Ministerial Directions because they were lawful.

Industry Expert 1 and Industry Expert 2 generally supported the reduced role of the Ministry, arguing that the ECA already allowed the regulator to license the spectrum and other services in accordance with the objects of the Act, thus there was no need for policy to precede every licensing effort. They (individually) pointed out that regulations and other activities of ICASA were mandatory in law yet the policies by the Minister were discretionary, meaning that the industry can function without any ministerial intervention. Industry Expert 4 posited that politicians were taking advantage of something so "insignificant" as issuing policy directions that no one would implement for the sake of playing politics and advancing self-interest.

Participants such as Regulatory Expert 2 postulated that the role of the government should be decreasing after years of experimentation with the failed collaborative governance between the two actors. According to Regulatory Expert 2, "it was ironic that the role of government in this and other industries was growing instead of diminishing even when it was failing". Regulatory Expert 2 also argued that politicians did not know "what not to touch" because it was their nature to control everything and still "feel good even when there is nothing to show from their actions".

Industry Expert 1, on the other hand, argued that the debate on the role of the government in a country like South Africa was unnecessary as it was bound to happen but the industry, in particular, was concerned about the unintended consequences of the role of the politicians in industries such as telecommunications. He argued that the main issue was more about how the relationship between the two actors was managed than whether any of the actors had a role to play.

Policy Expert 3 also attributed failure in this industry to both the government and the regulator. In his view the two were failing because of a balancing act that empowered the Minister to issue policy directions that were not binding to the regulator. In his view, there was no need to blame the regulator for everything because government introduced the current arrangement and had a responsibility to ensure that the provisions of the law were implemented accordingly to achieve the intended policy goals. “But this is not what we see on the ground other than competition between the two entities of the same state,” he said.

Both Policy Expert 2 and Policy Expert 3 cited the High Court ruling in the case between the *Minister of Telecommunications and Postal Services and the Chairperson of ICASA and Others* to explain how the provisions in the ECA opened an opportunity for a “stalemate” between the two main actors in the telecommunications industry. They pointed out that the Court ruling coined a new concept called collaborative governance or co-dependence as opposed to a hierarchical arrangement between the policy and the regulatory functions, which means any disagreement will have to be adjudicated by the courts and this was bound to take more time than it would be necessary to resolve common industry problems.

The misalignment between ICASA and the Department of Communications and Digital Technologies also contributed to a debate on government’s oversight responsibility over ICASA, with Policy Expert 1 indicating that “it did not make sense” that ICASA was reporting to Parliament instead of the Minister of Communications and Digital Technologies, which had the necessary expertise that Parliament did not to oversee complex regulatory processes and procedures. In his view, by reporting to Parliament, with its limited capacity, ICASA was allowed to “just dump” reports in Parliament while the regulatory problems persisted. He added: “Since 2006, when the ECA was introduced, ICASA’s capabilities had not been assessed. Its council has also not been assessed for its performance because of the

prevailing power dynamics between the Minister and the council", he pointed out. He concluded that:

> The parliamentary system has its own challenges. Can Parliament as a political forum have capabilities to exercise such responsibilities? Parliament has political problems but there is no competency to manage complex regulatory methodologies. To do this Parliament will need resources equivalent [to] those that are allocated to the Departments. It will make sense for Ministers and departments to account to parliament while the regulator accounts to the Ministers and the bureaucracy.

Policy Expert 3 argued that ICASA cannot be blamed as it was common for institutions to develop their own outlook as soon as they were established. Policy Expert 2 indicated that the discussion should also be about failure in politics, that is, even without the regulator, politicians would have failed, which is explained by the fact that every successive Minister changed the rules about the licensing of the radio frequency spectrum, resulting in inconsistency and instability. He pointed out that the licensing of a spectrum has changed with every Minister even though the Ministers come from the same political party, the ANC, implying that there was ideological incoherence in what the governing party and government wanted to achieve.

The participants also mentioned the limited regulatory capacity, which they attributed to government's failure to adequately resource ICASA. According to Regulatory Expert 1, ICASA was not adequately resourced potentially because politicians did not understand the requirements of regulation and generally feared a resourced regulator whose councillors and staff would earn more than them and their bureaucracies. To the contrary, Political Expert 1 posited that, in his view, ICASA had enough resources but did not have a plan to regulate the industry. In his view the problem facing ICASA was about accountability rather than its

independence, the latter having been used by the regulator to reduce accountability to the government and the citizens.

5.1.3 The Challenge of Institutional Inertia

As in the other industries, the prevailing institutional gridlock has persisted even while the industry was facing challenges due to spectrum scarcity, proving self-reinforcements and lock ins in this industry. The institutions of regulation have remained unchanged with implications for the industry and the markets. The data indicated that there were limited prospects for the redesign of the current institutional arrangements if it meant that either the policy maker or the regulator would use the power they were enjoying. While the market structure in the airport industry was seen as the main driver of the industry path, in this industry collaborative governance played a significant role. While the industry has prospects for growth, this is constrained by the delay in the licensing of the radio frequency spectrum.

The following section analysesthe influence of the institutions of the regulatory state on efficiency in price regulation.

5.2 The Influence of the Institutions of the Regulatory State on Efficiency Regulation

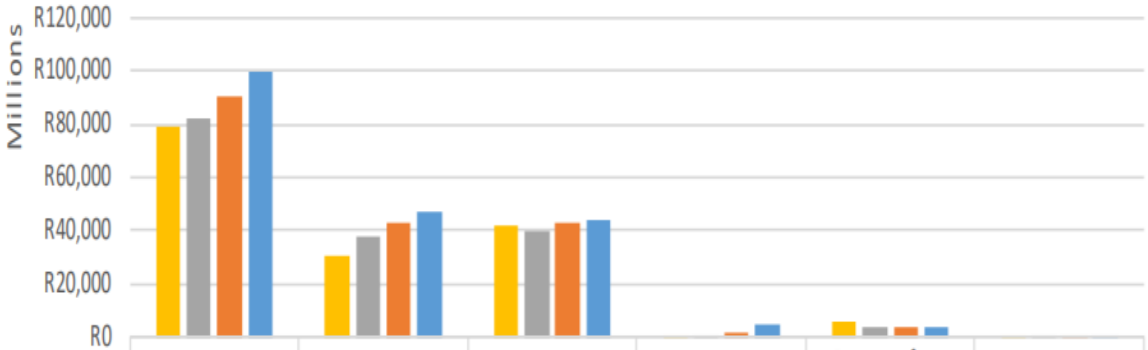
5.2.1 Efficiency Challenge and Institutional Dilemma

As in the electricity industry, the participants also reflected on the implications or influence of collaborative governance on efficiency in the industry. The participants were generally concerned by the fact that political inertia was making it difficult for the industry and society to reap the benefits of liberalisation in this industry. They generally accepted that the liberalisation of the market, which resulted in four regulated mobile communications firms starting with the licensing of Vodacom and MTN in 1993, was necessary even though it was failing; there was no option for the liberalised industry. According to Regulatory Expert 1, liberalisation was a good development as it contributed to innovation which would not

have happened under the state-dominated industry of the past. The telecommunications industry has grown over the years as evidenced by the data in Figure 9.

Figure 9

Overview of the Performance of the Telecommunications Industry (2015-2018)



	Total Mobile Services Revenue	Revenue from Mobile Data services	Revenue from Voice Services	Other Mobile Services Revenue	Revenue from Text and Multimedia Messaging Services	Revenue from Outbound Roaming
2015	R78,838,681,356	R30,216,263,601	R41,992,110,991	R546,158,563	R5,190,759,632	R893,388,568
2016	R82,209,711,759	R37,881,274,945	R39,498,579,909	R463,330,629	R3,910,993,637	R455,532,639
2017	R90,737,963,135	R43,190,853,863	R42,474,346,282	R1,198,304,773	R3,495,840,536	R378,617,682
2018	R99,569,265,222	R47,068,742,797	R43,756,195,020	R4,587,185,489	R3,957,858,068	R199,283,848

Note. From ICASA (2019b, p. 10).

Over the past decade, the capabilities of the telecommunications firms and the industry generally have been constrained by the delay in the licensing of additional radio frequency spectrum due to disagreements between the policy maker and the regulator on how to process the licensing (Vodacom, 2019). Policy Expert 2 further emphasised that the disagreements between the policy maker and the regulator in the licensing of the frequency spectrum always came at a cost as it resulted in industry having to build additional networks to optimise the already licensed spectrum to offset the delays in the licensing of additional spectrum. Policy Expert 1, Regulatory Expert 1, Industry Expert 3 and Industry Expert 4 also indicated that

spectrum refarming by building additional infrastructure and networks had become the only option available to the industry because the policy maker and the regulator could not agree on the way forward regarding the licensing of additional spectrum, which has been going on for over ten years since the introduction of the ECA in 2005.

Some of the Industry Experts indicated that there was confusion as government was also attempting to expropriate the spectrum that was already licensed, which amounted to some form of expropriation. They generally argued that attempts to expropriate spectrum, as set out in the ICT Policy White Paper, 2016, was happening when, over the years, government introduced mechanisms such as the provisions in section 25 of the Constitution of the Republic of South Africa.

Industry Expert 1 also indicated that things were not working as they should because government was pursuing multiple objectives, sometimes talking about expropriation and in others being conciliatory. In his view, although illegal on its own, the threat to expropriate the already allocated spectrum bands was a tool to muzzle the industry. He further pointed out that the outcome of this was division in industry wherein some of the firms expected to benefit from the expropriation of the spectrum. Policy Expert 1 argued that the spectrum, like the mines, belonged to the people of South Africa and government was just simply a custodian. While agreeing with the views on spectrum ownership, Regulatory Expert 1 argued that any threat of expropriation was a “fallacy”, an attempt to play politics when the citizens were complaining about poor service quality and the economy was stagnating. He emphasised that it was common cause that politicians will even choose to ignore the Constitution for the sake of pursuing ideology and self-interest.

5.2.2. Spectrum Refarming

The participants in this industry attributed the delays in the licensing of the radio frequency spectrum to politics. Policy Expert 2 emphasised that the disagreements between the policy

maker and the regulator in the licensing of the frequency spectrum always came at a cost as it resulted in industry having to build additional networks to optimise the already licensed spectrum to offset the delays in the licensing of additional spectrum. Policy Expert 1, Regulatory Expert 1, Industry Expert 3 and Industry Expert 4 also indicated that spectrum refarming by building additional infrastructure and networks had become the only option available to the industry because the policy maker and the regulator delayed in the licensing of additional spectrum. Sanni (n.d.) defines spectrum refarming as:

> The process governing the repurposing of frequency bands that have historically been allocated for 2G mobile services (using GSM technology) for [the] new generation of mobile technologies, including both third generation (using UMTS technology) and fourth generation (using LTE technology).

In its ordinary application, spectrum refarming is a means to ensure the efficient use of the spectrum through a shift to more efficient technologies and services. South African telecommunications operators have long argued that spectrum refarming should be allowed without the operators having to amend their licences and without having to seek regulatory amendments (Vodacom, 2018). This approach to spectrum refarming has been associated with cost efficiency as it is also linked to innovation and the use of efficient technologies. Such innovations and cost efficiency can be observed in the shift from 2G to 3G technologies. For instance, Viavi Solutions indicate that a shift from 900MHz GSM to UMTS 900 can improve coverage by over 40% in urban areas and over 100% in rural areas, thereby enabling firms to expand services economically.

However, the literature and data indicate that spectrum refarming can also be elastic when new, additional bands were not licensed over a significant period as was the case in South Africa. In the South African environment, the delay in the licensing of the spectrum

affected the extension of the 4G networks and the deployment of the 5G network and services across the country. In such a situation where refarming is also necessitated by scarcity as opposed to innovation increases in the costs in the industry were bound to happen. Industry Expert 1, for instance, pointed out that the cost of spectrum refarming was intense to extend the 4G services to various communities especially rural areas, and this was not the best way to do things considering that even refarming the spectrum was elastic – it can be done up to a certain extent before it starts to negatively affect the quality of service.

Industry firms have also attributed the high data costs in South Africa to the delay in the licensing of the radio frequency spectrum. Although the extent to which the delay in the licensing was increasing costs in the industry can be a subject for further studies, the participants pointed out that it was common cause that spectrum was always needed to expand existing services and to enable the introduction of new ones.

Industry Expert 2 and Industry Expert 4 (individually) indicated that the country was stuck as the existing model of collaborative governance leading to stagnation was likely to continue as no one between the policy maker and the regulator will agree to having their powers reduced. They pointed out that this approach had not yielded results for a long time already but that both parties chose the status quo even at the expense of the industry.

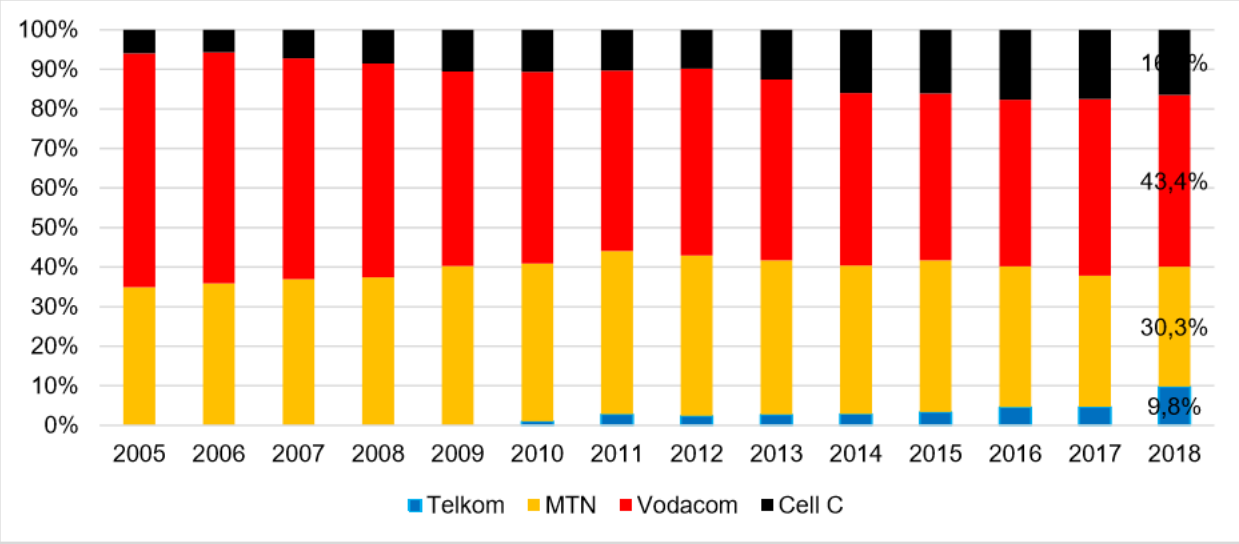
Regulatory Expert 2 pointed out that the current law (the ECA) has been in place since 2006 but a failing system continues merely because politicians would not yield and allow the regulators to do what they were meant to do. As argued by Policy Expert 3, governance failure was also affecting competitiveness in the industry as refarming for the sake of survival would favour the bigger industry firms. He further suggested an industry path dominated by few players was being increasingly entrenched each passing day with a negative impact on industry costs and prices. This view is expressed beside the fact that the dominant firms with multiple users were equally affected by the delays in the licensing of the

radio frequency spectrum. The situation persists at a time when government has also committed to use the licensing of the radio frequency spectrum to enhance competition in the market. This includes setting aside of the spectrum for the yet to be established Wireless Open Access Network (WOAN) to provide infrastructure and network capacity to new and smaller industry firms in terms of the White Paper on Integrated ICT Policy (DTPS, 2016).

There are currently four mobile telecommunications firms that have been subjected to tariff regulation – Vodacom (43.4%), MTN (30.3%), Cell-C (16.5%) and Telkom (9.8%) – as they have access to scarce radio frequency spectrum, and own and manage their infrastructure (ICASA, 2019, Competition Commission, 2019). Figure 10 shows the distribution of the market shares of the four mobile service providers.

Figure 10

Comparative Market Share in the Telecommunications Industry (2005-2018)



Note. From ICASA (2019a, p. 32).

The market shares of the regulated firms are generally considered in the determination of dominance and market concentration using methodologies such as the Herfindahl-Hirschman Index (HHI). The number between zero and 1 500 is associated with a competitive market

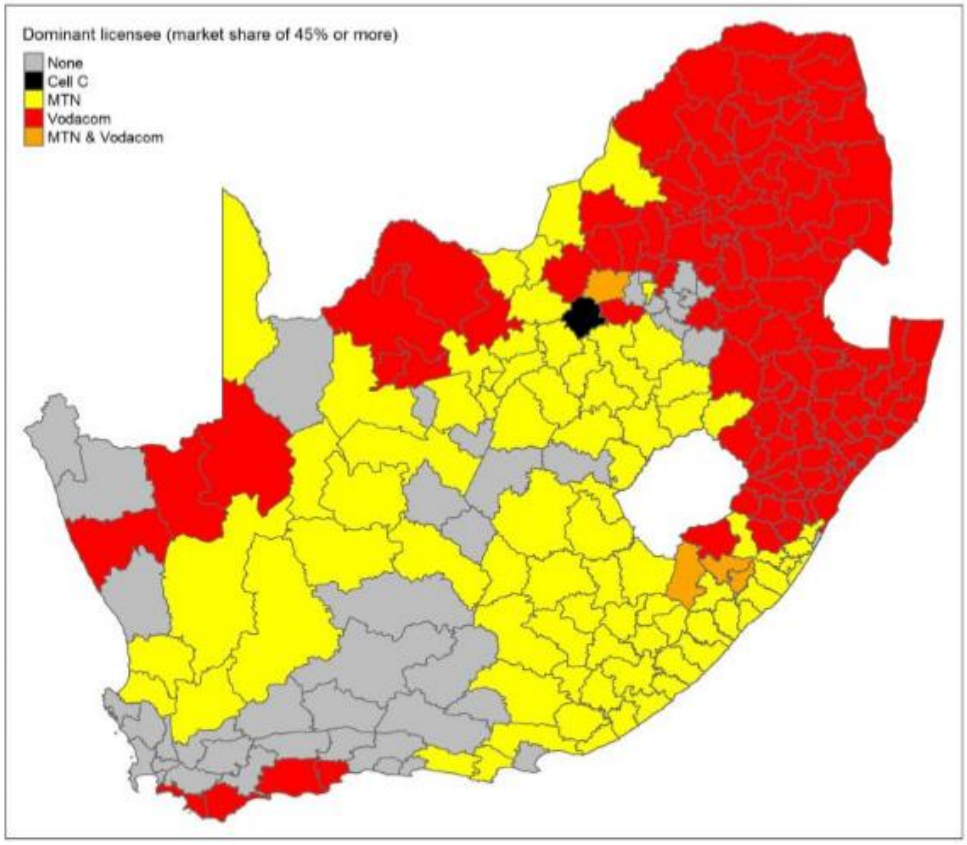
(USA Department of Justice, n.d.). The number between 1 500 and 2 500 is considered moderately competitive, and the number above 1 500 is for a non-competitive market. Using the market shares above, the total HHI for the telecommunications industry is 3 170 which is above the 2 500 threshold, thus the market is concentrated. The market structure of the South African telecommunications industry can therefore be characterised as an oligopoly, which is defined by OECD (2015) as follows:

> Oligopoly markets are markets dominated by a small number of suppliers. They can be found in all countries and across a broad range of sectors. Some oligopoly markets are competitive, while others are significantly less so, or they can appear that way. (para. 3)

The competitiveness of the telecommunications industry in South Africa has also been measured by ownership and access to essential facilities, mainly the towers and base stations that are used for transmission purposes. The control of communications infrastructure by the different firms is further highlighted in Figure 11.

Figure 11

Distribution of Infrastructure per Regulated Firm



Note. From ICASA (2019a, p. 53)

It is because of their significant ownership of infrastructure and market share that the Competition Commission of South Africa has also designated Vodacom and MTN as dominant players in terms of the Competition Act No of 1998 (Competition Commission, 2019).

5.2.3 Implications for and the Role of ICASA.

As in the other industries, the role of the regulator in tariff determinations was mentioned as an important aspect of the effort to achieve efficiency. This, as stated, happened because the regulators and not the policy makers, were assessed the costs of providing infrastructure and services as a basis of determining tariffs that were charged by the regulated firms. This, according to some of the participants, resulted in a situation where the users

'looked up' to the regulators to do their work by reducing the tariffs that were charged by the regulated firms. So, in the view of Regulatory Expert 1, the users would always blame the regulators for anything that went wrong in the industry, meaning that they (users) were aware of the existence of the regulators and expected them to resolve any challenge facing the industry. Regulatory Expert 1 and Regulatory Expert 3 pointed out that South Africa and, this industry in particular, had an established regulator to an extent that South Africans were not aware of issues and activities that happened behind closed doors, the engagements between the Minister and the regulator. In the words of Industry Expert 1, the citizens and users generally were only interested in quality and affordable infrastructure and services and looked up to the regulator to make this a reality. He pointed that, " ordinary users know nothing about spectrum policy and policy directions but were interested in the services that they were receiving from the regulated firms through the work of the regulator".

ICASA, like the other regulators, has introduced its own cost accounting methodologies determine tariffs informed by the costs of doing business. These were extensive and costly interventions whose utility and costs could be undermined by inefficient political decisions and outcomes. The participants in this industry generally indicated that LRIC has been used to detect failure (inefficiencies), as it relied on comparing the regulated firms with similar firms in other markets as a form of benchmarking. Regulatory Expert 3 pointed out that there was a need for the development of the LRIC methodology without expecting that it would resolve all the problems, especially those associated with political decision making. He pointed out that, " detecting the costs of political decisions was always evident as the firms in South Africa were facing similar challenges. They were all engaged in innovating with what they have but they could only do so much. In this case, the regulator has to be on the side of the firms that were facing a spectrum crunch". Industry Expert 4 also weighed in, arguing that the firms cannot be punished for high costs especially when the

situation was common across them. This would be different in monopoly industries wherein the regulator would deal with costs from a single source. This, in his view, showed the essence of using LRIC in a market with multiple firms. According to Industry Expert 2, the regulator was managing considering how it dealt with the call termination rates[22] which decreased significantly from R1.25 in 2010 to over 100% decline by 2018 as indicated in Box 6:

Box 6

Overview of ICASA's Call Termination Regulations, 2018

1. for operators with more than a 20% share of the total minutes terminated in the wholesale voice market, a glide path period –
   - 1.1 where a charge for terminating a call at a fixed location would be 0.09c from October 2018 to September 2019; 0.07c for the period October 2019 to September 2020; and 0.06c from October 2020 onwards.
   - 1.2 where a charge of terminating a call at a mobile location would be 0.12c from October 2018 to September 2019; 0.10c for the period October 2019 to September 2020; 0.09c from October 2020 onwards.
2. for operators 20% or less share of total minutes terminated in the wholesale voice market, a glide period –
   - 2.1 where charge for terminating a call at a mobile location would be 0.18c from October 2018 to September 2019; 0.16c for the period October 2019 to September 2020; and 0.13c from October 2020 onwards.
   - 2.2 Where the charge for terminating a call at a fixed location would be 0.10c from October 2018 to September 2019; 0.08c for the period October 2019 to September 2020; 0.06c from October 2020 onwards.

Note: From ICASA Media Release (2018)

But as argued by the various participants, the firms rightly raised their concerns about the delay in the licensing of the radio frequency spectrum. Industry Expert 3 for instance pointed out that government wanted prices to decrease while at the same time was party to the delays in the licensing of the radio frequency spectrum. In his view, there was a disjuncture between

[22] Whole voice call termination rates are charges that the industry firms charge each other for the termination of each other's signal on their respective networks. This is needed for the purposes of enabling communications between the subscribers of the different networks. In South Africa this service is regulated by ICASA particularly to ensure that the smaller firms were not being disadvantaged. ICASA uses what is called "the calling party pays" which means that each firm pays for the termination of its own traffic on another network.

the expectations of the government and the regulator to reduce prices while the key ingredients and inputs were significantly misaligned. These concerns pointed to an uneasy situation where the regulator was committed to achieve certain outcomes such as reducing prices without due regard of the lack of critical inputs such as the radio frequency spectrum.

The participants also indicated that the shift towards regulating for efficiency was also constrained by the regulator's limited capacity to implement LRIC. According to Regulatory Expert 2, the LRIC methodology was adopted and used over the years as a generally preferred model to improve efficiency. LRIC allocates costs to specific services as opposed to generalised allocation of costs to services as in general accounting approaches such as fully allocated costs (FAC). Regulatory Expert 2 pointed out that LRIC was suitable to regulate for efficiency as it is forward looking as costing or modelling takes place when all costs are variable as it is common in long run costing models. "Although LRIC does use historical data, it is adjusted for efficiencies by comparing a firm's cost and price with possible efficient prices in the long run", Regulatory Expert 2 pointed out.

In the South African context, LRIC has been used in the regulation of the call termination market since 2014. Spectrum costs form part of the input that is considered during the tariff determination processes.

As its advantage (Industry Expert 4), LRIC models the ideal firm considering both the ideal and the real factors on the ground and these are adjusted for efficiency. Policy Expert 3 and Industry Expert 4 added that LRIC required "a lot of information" as the regulator needed to consider and examine ledger statements and audited statements to trace the costs of providing services. As such, government input costs such as taxes are also included in the cost modelling. Government taxes will differ from other decisions related to the functioning of the market. Policy Expert 3 added that while LRIC can detect excess costs arising out of

refarming, that would happen at the end when the regulator undertakes a competition assessment in terms of section 67 of the ECA.

According to Regulatory Expert 2, implementing LRIC was initially a challenge for ICASA, resulting in the dispute between the regulator and the regulated firms being settled by the courts, which ruled that ICASA should publish its LRIC methodology as mentioned in Chapter 1 above. Regulatory Expert 2 indicated that in 2014, Vodacom and MTN challenged ICASA on the processes, which later improved in 2018 when ICASA introduced new call termination tariffs, and there were no further challenges, although the two major operators were not satisfied by the asymmetrical dispensation given to the smaller operators, Cell C and Telkom Mobile. In Regulatory Expert 2's view, the imposition of asymmetrical interventions was unique to South Africa wherein Cell-C also benefited from this even though it had been in the market since 2003. Regulatory Expert 3 also indicated that the regulator finalised the process while it had limited information from Telkom, which delayed submission and only submitted when the regulator was about to finalise the determinations and thus it did not have sufficient time to analyse the information submitted by Telkom.

Policy Expert 3 indicated that the use of LRIC involved over reliance on consultants, which also helps mitigate information asymmetry as most of them would have done similar work in other jurisdictions. This has raised questions concerning the capacity of the regulator to implement complex methodologies without relying on consultants as this may also result in external control of the regulatory processes. Regulatory Expert 3 indicated that information asymmetry was inevitable as the regulators were not in the business of building and managing networks and thus were largely dependent on the regulated firms for information. Policy Expert 3 further posited that:

> There are things that will require international exposure. It is not possible for regulators to match this capacity. So, there is nothing wrong with using consultants,

> but it is how you do it. For instance, there should always be people who look after the consultants and indeed those people must have the necessary expertise in order to advise council adequately.

Policy Expert 1 argued that the regulator still needed its own internal capacity and should be made to account for its own activities. Policy Expert 3 also argued that the regulator needed its own capacity "to review the inputs of consultants and ensure that they meet the expectations of the regulator". This, according to Regulatory Expert 1, was necessary as ICASA did not have adequate capacity on its own, partly due to the poaching of skills from the regulator by the firms that offer higher salaries than the regulator.

While still seeing information asymmetry as a reality, Regulatory Expert 3 indicated that ICASA always had adequate information to work from. She argued that the regulator needs experienced staff to sift through the information submitted by the firms. In her view:

> Experienced experts within the regulator could always "write to the industry and detail their specific cost information that they needed and even host workshops before the commencement of the formal submissions, allowing the regulator to use multiple methods and approaches.

In contrast, Policy Expert 2 suggested that the performance of regulation was influenced by what she called structural issues, referring to policy issues at the level of government, such as the licensing of the radio frequency spectrum. According to Policy Expert 4, "structural issues persist leading to the current market challenges". This she said was exacerbated by the fact that government has not invested in capacity to understand the source of the problem. She further added that government would not have done this without using evidence-based methods, which had not been institutionalised. "Policy failure is having impact on the quality of regulation," she added.

It is within this context that the regulator deals with the cost of doing business in this industry. As in the other industries, there is no mechanism to mitigate the costs arising out of the political decision making. The regulators only assess the costs after the fact, that is, when the services have been provided. Literature and data in this industry indicate that collaborative governance has not succeeded in mitigating the costs in the industry. Instead, costs have increased due to the delay in the licensing of the much-needed radio frequency spectrum as the regulated firms had to reform the spectrum to expand and improve the quality of services. Such a reality has motivated the need for further reforms to improve efficiency in the industry.

The next section contains some of the recommendations of the participants on interventions to mitigate inefficiencies and improve efficiencies.

5.3 Approaches to Improve Efficiency in Regulation

This sub-section focuses on the recommendations of the participants on the approaches that could be implemented to improve efficiency in the telecommunications industry. The recommendations dealt with the different issues concerning possible interventions to mitigate inefficiency and improve efficiency in the industry. These included mechanisms to improve collaborative governance and other specific industry interventions listed below. As in the other industries, the recommendations are considered and discussed in the development of the integrated regulatory reform framework in Chapter 7. The recommendations mentioned below should be considered as part of the reforms mentioned in Chapter 7 provided they are suitable to address specific industry challenges.

5.3.1 Policy Expert 1 recommended that a hierarchy be established between the Minister of Communications and Digital Technologies and ICASA to enable the resolution of disagreements between the two wherein the Minister will have a final say whenever a deadlock arises. He added that ICASA should report to the Minister of

Communications and Digital Technologies, which will allow Parliament to focus on political issues while government, with its capacity, focuses on complex regulatory processes. He further argued that it should be left to the Minister as a politician and the Department of Communications and Digital Technologies to report to Parliament through the Portfolio Committee on Communications and Digital Technologies. This recommendation has significant implications for building credible commitment around the establishment of the regulatory state, which has been one of the incentives for private sector investment. While reforms are necessary, such an intervention should be accompanied by rigorous cost-benefit analysis to establish an optimal design for the regulatory state. It must be seen and discussed together with the alternative view that government should exit the industry and do away with collaborative governance while allowing the regulator to license spectrum subject to the industry goals set in the law.

5.3.2 Some of the participants also recommended an overview of the current mismatches between policy directions and the regulations wherein the Minister has a mandate to issue policies but the regulator has no obligations to implement them, which creates uncertainty in the system. Citing the case of the licensing of the radio frequency spectrum, Policy Expert 2 and Policy Expert 3 indicated that while it was necessary to ensure checks and balances to enhance regulatory independence, this must not be at the expense of industry performance. They recommended that the regulator be allowed to do its work and the status quo must be retained as it would be difficult to remove either of the two actors from the "equation". They advanced that other reforms will be needed to create a balance between the requirements of the Regulatory State and those of the Developmental State.

5.3.3 Policy Expert 2 argued that the challenges facing regulation were more complex than the regulatory methodologies and involved the role of politics in the establishment

and management of the regulatory institutions. He indicated that there was evidence of political ideology in regulation seeing as how even the internal dynamics in political parties, especially the governing party, has influenced the state of regulation. This view suggested that the study of the manifestation of political ideology in practice is complex and would require further studies. Also, this points to a complex interplay between ideology and self-interest.

5.3.4 Regulatory Expert 1 stated that the regulator was not adequately funded hence its over reliance on consultants to implement the complex and time consuming LRIC methodologies. Regulatory Expert 3 and Regulatory Expert 4 indicated that research was a cornerstone for any regulatory endeavour and that internal restructuring was necessary to ensure that the regulator invested more resources towards research and data management, which over time will include the use of data analytics to enhance its capacity to generate the much-needed empirical evidence. Policy Expert 1 recommended that the regulator should also reinstate a methodology that would enable the regulator to constantly collect industry information, supported by the use of big data analytics. This in his view would enable the regulator to track the performance of the regulated firms over a period. Data, and big data especially, is essential for modern day regulations such that evidence-based approaches to regulation should be supported by new technological innovations. Although the discourse on regulatory capacity is necessary, it does not account for the specific concern about ideology and its influence on efficiency in price regulation.

5.3.5 Policy Expert 3 and Regulatory Expert 3 argued that impact assessment before and during the development of the regulation and laws was necessary to ensure that regulator interventions dealt with specific cases of market failure and to ensure that the interventions were proportional to the problem being addressed. This, according to

Policy Expert 3, could be done without prolonging the legislative and regulatory processes, provided that the regulator focuses on areas with high benefits and impacts. This could include undertaking an RIA before introducing a regulation or legislation. "At the same time, it would be necessary to improve the policy maker and regulator interface in a way that does not weaken the regulator. This is particularly important in an environment where the regulator members depend on the policy maker for their careers", he pointed out. Evidence based approaches to regulation are needed to enhance the quality of regulation and known methods such as RIA can be customised to suite a local environment or context. Key to this issue is how evidence-based methods can be introduced and integrated within the environment that considers the prevailing ideological environment.

5.3.6 Regulatory Expert 3 and Regulatory Expert 4 recommended the institutionalisation of monitoring and evaluation including the publication of monitoring and evaluation reports to enhance transparency. They argued that the law should impose an obligation on ICASA to explain to the consumers the basis and outcomes of its decisions. In her view this would "ensure that there is an agile regulator that is able to learn from its own processes and keep on improving instead of doing the same thing all the time". Such an approach could form part of the evidence based regulatory governance.

5.3.7 On benchmarking, Policy Expert 3 and Industry Expert 1 recommended that evidence-based policies should also include the use of benchmarking based on a well-defined methodology to ensure that comparisons with other jurisdictions were consistent and informed by the assessment of similar indicators. This according to Industry Expert 3 will ensure that ICASA has the necessary data to assess the top down and bottom up modeling during the implementation of LRIC methodology.

5.3.8 Regulatory Expert 1, Regulatory Expert 4, Industry Expert 1, Industry Expert 2, Industry Expert 3 and Industry Expert 4 also recommended the use of evidence which can be generated from the use of new digital technologies and international benchmarking. They generally indicated that the telecommunications companies have already embrace technologies that are used to develop tailor made products at a time when the regulator keeps on asking for the same information which it cannot even process. Regulatory Expert 1 pointed out that it was unfortunate that the regulator in this industry was storing critical information on the network drives while the entire economy was moving to cloud computing. He specifically recommended that the introduction of digital technologies in this and the other industries should be a significant change management as it would usher in a new regulatory terrain and redefine the relationship between the regulator and the regulated firms.

5.3.9 The participants generally recommended the retention of the LRIC model suggesting that while it was complex, time consuming and information intensive it was suitable to deal with the challenges facing the industry even though it was far from being perfect. They alluded to the fact that there were no issues related to measuring efficiency, as it was the case in the electricity and airport industries. Regulatory Expert 2 also recommended that LRIC can be explored and use in the other industries that were facing more challenges than telecommunications, and this would require the regulators to be adequately capacitated to implement LRIC. He pointed out that: “Other regulators such as NERSA in the electricity industry can use the same model. “LRIC is good in the sense that it was forward looking and future oriented. It is probably the best but not perfect model”, he argued.

5.3.10 Policy Expert 2, Regulatory Expert 1, Regulatory Expert 3, Industry Expert 1 and Industry Expert 3 pointed out that regulation was generally failing because it

was rigid. The same extended to the laws that take very long to change even when regulatory environment was changing. In their view government and regulators just want to place rigid rules for everything even issues that can be resolved through once off negotiations. This calls for a complete rethink of how things are done to ensure that laws are proportional to the issues being addressed at a given moment. These participants generally pointed out that there was a need to improve trust amongst the key players as a way to adopt the new dispensation.

5.4 Summary of the Chapter

This chapter focused on the data from the review of documents and semi-structured interviews with the participants in the telecommunications industry, the only liberalised of the three industries under review. The data points to the existence of collaborative governance between the policy maker and the regulator in this industry. The rules governing collaborative governance are set out in the ECA. The data indicates that collaborative governance was inevitable in this industry as the politicians still wanted to play a significant role after the introduction of the regulator. The current governance model has thus persisted even when there were challenges and failure to meet the goals of the industry especially related to the licensing of the radio frequency spectrum. The participants pointed out that the industry has resorted to spectrum refarming amidst the delays and the uncertainties in the licensing of the radio frequency spectrum, which increased the costs of the industry. At the same time the regulator had introduced its own mechanisms to enhance efficiency but this does not include mitigating inefficiencies arising out of political decision making. As a result, the participants recommended a range of interventions to mitigate inefficiencies or improve efficiencies in the industry. The recommendations of the participants have been considered in the recommendations of the study in Chapter 7 and Chapter 8.

Chapter 6: Regulating a 'Favoured Airport Natural Monopoly' in a Competitive Airline Industry

This chapter focuses on the data from document reviews and semi-structured interviews with the participants in the airport industry. In Section 6.1, the study deals with the influence of the political ideology of the developmental state on the institutions of the regulatory state. Section 6.2 presents the findings on the study regarding the influence of the ideology of the developmental state on the institutions of the regulatory state. This is followed in Section 6.3 by the data on the influence of the institutions of the regulatory state on efficiency in price regulation. Section 6.4 concludes the chapter with the recommendations of the participants.

6. 1 The Influence of the political ideology of the Development State on the Institutions of the Regulatory State

6.1.1 Institutional Design of the Airport Industry Regulatory State

The development of the airport industry followed a similar path as the other two industries with the separation of policy making, regulation and industry. This industry was also the first to adopt a regulatory state with the introduction of the ACSA Act in 1993, which consolidated nine state-owned airports into a new company, the Airport Company South Africa (ACSA) and the creation of the Regulating Committee, within the Department of Transport.

The Regulating Committee is mandated in terms of section 11(1) of the ACSA Act to regulate ACSA's tariffs. Unlike the other two cases (electricity and telecommunications), the Minister of Transport does not issue policies to the regulator, so collaborative governance between the policy maker and the regulator is limited only to the Regulator implementing its mandate in terms of the ACSA Act. However, the Minister is empowered in terms of section 10(1) of the ACSA Act to issue orders to ACSA, subject to the consultations between the two

parties. This provision has left the government through the Minister of Transport to engage directly with the regulated entity on its investment decisions and priorities.

The Minister of Transport also approves ACSA's infrastructure programmes in terms of the Public Finance Management Act No 1 of 1999. ACSA, like other state entities, is required in terms of section 52 of the Public Finance Management Act No 1 of 1999 (PFMA) to submit corporate plans to the Minister and the National Treasury before the start of a new financial year on 1 April of each year. Furthermore section 54(2) of the PFMA provides that:

> Before a public entity concludes any of the following transactions, the accounting authority (a board) for the public entity must promptly and in writing inform the relevant treasury (provincial or national) of the transaction and submit relevant particulars of the transaction to its executive authority for approval of the transaction:
>
> (a) Establishment or participation in the establishment of a company;
>
> (b) Participation in a significant partnership, trust, unincorporated joint venture or similar arrangement;
>
> (c) Acquisition or disposal of a significant shareholding in a company;
>
> (d) Acquisition or disposal of a significant asset; and
>
> (e) Commencement or cessation of a significant business activity.

The PFMA enables direct engagements between ACSA and the Minister on the activities of the regulated entity. Through these provisions the Minister of Transport can approve ACSA's investment plans outside of the processes of the regulator, which as will be shown below creates uncertainty as the regulator has its own procedures to be followed by ACSA when investing in new infrastructure. Policy Expert 1 indicated that the Minister can always engage the board and the management of ACSA as and when it is necessary. This, according to

Policy Expert 3, was necessary to ensure that the Minister of Transport and government generally could influence the development of economic infrastructure.

6.1.2 The Making of the Regulatory Institutions

The participants in this industry also expressed their views on the influence of the political ideology of the developmental state on the regulatory state leading to a new institutional environment. Some of the participants indicated that besides the regulatory state in this industry having been associated with the consolidation of various government airports into a natural monopoly, there was evidence of a significant orientation towards a state-led trajectory. This, in their view, was visible in government's failure to establish a fully functional regulator similar to ICASA and NERSA, a situation which, in their view, suited both the Department of Transport and ACSA. As will be shown below, ACSA was seen by the participants as the major beneficiary of the status quo. This argument followed similar ones in the electricity and the telecommunications industry wherein the participants argued that government was not in favour of independent regulators but was merely complying to be in line with other countries.

The Policy, Regulatory and Industry experts were generally in support of the introduction of a fully-fledged independent regulator to enhance efficiency in the industry. They pointed out that the other two industries (telecommunications and electricity) were doing better than the airport industry, which, in their view, was stuck in conflicts between ACSA and the Regulating Committee and between ACSA and the airline industry. Regulatory Expert 2 added that there was a political problem considering that the under-capacitated regulator was required to perform tasks that were performed by "well capacitated" regulators in the electricity and telecommunications industries.

Industry Expert 2 argued that government was not prioritising this regulator because, in her view, the ACSA Act should have been amended "a long time ago" but this was not

happening. Industry Expert 2 and Industry Expert 4 attributed this to the failure of the Department to prioritise aviation as it did with roads and rail transport. While some of the participants linked the state of regulation to favouritism, Policy Expert 3 argued that good regulation was not happening because government was focusing more on the other modes of transport such as road and rail, which were experiencing more problems. In his view, there was no evidence that the government was incapacitating the regulator in order to control the industry or to advantage ACSA. He further argued that it was also due to the lack of prioritisation that the Department of Transport usually delayed appointing consultants for the regulator with severe, negative implications for the industry as a whole.

According to Industry Expert 2, while the regulator was trying to do its best in the circumstance, that is, working with limited capacity, a more capacitated regulator would have "dug [more] deeper" to identify weaknesses in the operations of ACSA. Government was, in other words, seen to be focusing on industries with significant redistributive effects than those that serviced the high-income earners who rely on air travel. According to Industry Expert 2:

> There can be no explanation why government has not changed the law. Maybe there are pressures in other areas hence the failure to pay sufficient attention to the needs of the airport industry that plays a significant role in the economy. Government has been "firefighting" in the other areas and aviation was getting attention as a "by the way".

She further pointed out, however, that:

> Of course, government does pay attention to the South African Civil Aviation Authority due to its international obligations, otherwise no one will fly to South Africa if we do not comply with international obligations that were common and universal across the world.

The participants further pointed out that the lack of proper regulation resulted in the lack of predictability and consistency in the industry. In their view, the capacity and behaviour of the Regulating Committee depended on the "kind of people" who constituted it at any given period. Policy Expert 2 and Regulatory Expert 1 indicated that, as it is, the Regulating Committee was a quasi-subdivision of the Department of Transport, which also provided it with secretariat services and was responsible for sourcing legal and other services on behalf of the regulator. This arrangement, in his view, raised issues about the independence of the regulator, which was compounded by the fact that both ACSA and the Regulation Committee reported to the Minister of Transport, making the Minister a conflicted party.

Given this relationship, including the proximity of the Minister to decision making, Industry Expert 1 indicated that the Minister should be involved in the determination of the tariffs. He further highlighted that the ACSA business model had become significantly complex and required a clear political oversight of the company and how regulation was conducted in this industry. On the role of the Minister in tariff determinations, he argued that:

> Practice requires that the tariffs determined by the regulator should first be presented to the Minister for approval. The regulator must be able to convince the Minister that proper procedures were followed, all parties were consulted, the calculated tariffs are reasonable, the interests of the parties have been taken into consideration, the company will be able to finance its infrastructure expenditure. The regulator must only implement new tariffs once the Minister has been consulted.

There were, however, concerns about the role of the Minister with regard to influencing the tariffs while the airlines were not given the same privilege of engaging with the Minister. This concern was in relation to ACSA's ability to discuss the tariffs with the Minister in the absence of the airline industry. More so, the participants highlighted that the involvement of the Minister was illegal as it was not provided in law. The participants referred to the role

played by the Minister in 2009 by when he appointed an arbitrator to settle disagreements between ACSA and the Regulating Committee even though this was not provided for in the law. Regulatory Expert 4 further indicated that during the 2009 permission period, ACSA threatened to take both the Minister and the regulator to court, leading to the Minister intervening by taking the matter on arbitration in the absence of an enabling mechanism for conflict resolution in the law. Regulatory Expert 4 expressed reservations about the role of the Minister, indicating that the arrangement was not adequate, especially when dealing with a regulator that was not fully established against a big corporate with a huge lobbying muscle, which created a challenge for the airline industry that was dependent on a monopoly.

According to Industry Expert 4, the Minister's (Ministers') preference for ACSA was inevitable at a time when ACSA was doing well and did not require government subsidies and bailouts as did the other state entities such as the South African Airways and Eskom. On the same issue, Regulatory Expert 4 indicated that ACSA was using its lobbying muscle to "drag" the Minister into the tariff measures. According to Regulatory Expert 1 the lack of prescribed processes and the lack of clarity on the role of the Minister had implications for the independence of the regulator, pointing out that "the Minister expects ACSA to be profitable and sustainable. On the other hand, the regulator is concerned to ensure that ACSA's profitability does not result in the abuse of its monopoly position".

6.1.3 The Challenge of Institutional Inertia

The data indicated that this industry was characterised by self-reinforcements and lock in especially in the market structure that the participants indicated was suitable for a natural monopoly. As mentioned above, government's preference for a monopoly defined the industry path leading to what the participants called the complete neglect of the regulator. ACSA as a natural monopoly was facing increasing returns as there were limited prospects of a competitor. Some of the participants also associated the establishment of fully functional

regulators with market liberalisation. In this regard, Industry Expert 3 argued that government was not interested in regulation because there were no external investors in the airport industry.

In other words, the participants were of the view that there was a neglect of the regulator in this industry because of the existence of the monopoly. However, the state of the regulator was likely to change with the establishment of the Transport Economic Regulator to integrate the Railway Safety Regulator, the Ports Regulator and the Regulating Committee, among others. But some of the participants were concerned about the risk of the new regulator continuing to "marginalise" the aviation industry in favour of other modes of transport for reasons related to limited aviation industry skills and government's preference for redistribution in the other modes of transport. Industry Expert 4 in particular argued that there was no guarantee that the "new regulator" would prioritise the airport industry.

However, the Economic Regulation of Transport Bill, which was in Parliament at the time of the completion of this thesis in February 2022, indicated significant changes to the regulation of the airport and other transport industries. The Bill provides for concurrence between the Minister of Transport and the envisaged regulator, wherein the Minister would consult with the regulator before issuing determinations on the markets and entities to be regulated. Contrary to the views expressed by some of the participants that government was not in favour of a regulation in the industry, the Bill included provisions that would bind the Minister of Transport to consult with the regulator in a prescribed manner thereby addressing some of the contentious issues in the other industries. For instance, the Bill provides that the Ministerial Determinations will be preceded by the regulator undertaking public consultations. Section 4(5) of the Bill states:

> Before the Minister may consider making determinations contemplated in subsection (2), the Regulator in the prescribed manner and form –

(a) must publish the relevant opinion or report contemplated in section (4) in the Gazette, within the prescribed period;

(b) must publish, in the Gazette, a notice that such a determination is being considered, and invite public submissions in response to the notice; and

(c) may conduct public hearings on the matter in appropriate circumstances.

The Bill was, however, silent on whether the Minister would be bound by the outcomes of the consultations by the regulator in which case the regulator will have a significant influence on policy.

These provisions in the Bill address similar issues raised in *Earthlife Africa versus the Minister of Energy and Others (2017)* regarding the administrative nature of the consultations between the Minister of Energy and NERSA. In this case, the Court ruled that the regulator was bound to consult and explain its reasons for concurrence with the Minister in accordance with PAJA, which seeks to give effect to section 33 of the Constitution In terms of this section, state institutions are required to ensure that "everyone has the right to administrative action that is lawful, reasonable and procedurally fair subject to the law. Public policy makers and regulators, like other state institutions, are to comply with PAJA, as it regulates decision-making procedures and practices of public entities to ensure fairness, promote accountability and enhance efficient governance. To give practical effect to the right to administrative action, section 2 (b)(i)–(ii) of PAJA sets out the requirements for a fair administrative action. These provisions require administrative bodies to ensure that adequate notices are issued, citizens or affected parties are given opportunities to make representations, and are entitled to request reasons for decisions.

6.2 The Influence of the Institutions of the Regulatory State on Efficiency in Regulation

6.2.1 Efficiency Challenge and the Institutional Dilemma

This section deals with the influence of the institutions of the regulatory state on efficiency in this industry. In this industry, in the absence of the collaborative governance, the institutional environment is largely defined by the separate roles of the Minister of Transport and the Regulating Committee on critical infrastructure investment decisions. The data indicates that government has continued to take significant investment decisions with influence on efficiency in price regulation. The Minister of Transport has exercised his or her right in an environment that is dominated by a state natural monopoly as discussed in the following paragraphs.

According to the participants, especially Industry Expert 2 and Industry Expert 4, ACSA was treated as a natural monopoly because of barriers to entry in the airport industry; there were limited possibilities to create another entity to compete with ACSA and to ensure cross-subsidisation among the airports in the different towns as some were not profitable. Whether privatised or still in state ownership, the natural monopoly characteristics of the airport industry have persisted, as argued by Serebrisky (2013, p. 468).

The reason is that airports have large economies of scale: the unit costs of infrastructure supply fall as airport traffic increases, because of the high fixed costs of capital and of infrastructure and equipment maintenance. This situation implies a market configuration with a monopolist airport operator upstream and with passenger and freight air transport companies downstream operating in a competitive market.

The treatment of ACSA as a monopoly was, according to Policy Expert 3 and Policy Expert 4, inevitable given the location of the ACSA airports in the major cities and towns across the country. They pointed out that by virtue of the location of its airports in the metropolitan areas in the country, ACSA had to be treated and regulated as a monopoly

provider. Policy Expert 4 further indicated that the lack of land for airports closer to the main cities and towns was thus considered as an entry barrier to potential, private competitors to ACSA. In his view, the airport infrastructure was different to the electricity and telecommunications infrastructure as it needed large tracts of land and access to transport networks, while telecommunications services were largely transmitted through wireless technologies and electricity through underground, sunk cables. He emphasised that:

> Telecommunications relies largely on wireless infrastructure and services that need limited land for investment and this explains why the industry has many players that are operating at the same level. The same with the electricity industry, which can be opened to nuclear and renewable energy without similar constraints that you find in the airport industry if we were to introduce significant competition to ACSA.

Policy Expert 3 and Regulatory Expert 4 further pointed out that while Lanseria Airport was a privately-owned international airport, it is small compared to the three leading ACSA airports, namely, OR Tambo, Cape Town and King Shaka[23]. There were other small airports outside the ACSA stable such as Hoedspruit in Limpopo and various local and provincial government airports that were niches for tourists and trade respectively, but with limited capabilities for international traffic and thus could not be treated as alternatives to ACSA.

The airport industry path was therefore informed by the nature of the industry as it was difficult, for instance, to build alternative airports due to limited land near the metropolitan areas. The natural monopoly in this industry was justified by economic considerations such as sunk costs and economies of scale. According to the participants, especially Industry Expert 2 and Industry Expert 4 ACSA was treated as a natural monopoly because of barriers to entry in the airport industry; there were limited possibilities to create

[23] Lanseria Airport is the 4th largest commercial airport in South Africa after OR Tambo, Cape Town and King Shaka International Airport (Lanseria Airport, n.d.).

another entity to compete with ACSA and to ensure cross subsidisation among the airports in the different towns, as some were not profitable.

The treatment of ACSA as a monopoly was, according to Policy Expert 3 and Policy Expert 4, inevitable given the location of the ACSA airports in the major cities and towns across the country. They pointed out that by virtue of the location of its airports in the metropolitan areas in the country, ACSA had to be treated and regulated as a monopoly provider. Policy Expert 4 further indicated that the lack of land for airports closer to the main cities and towns was thus considered as an entry barrier to potential, private competitors to ACSA. In his view, the airport infrastructure was different to the electricity and telecommunications infrastructure as it needed large tracts of land and access to transport networks, while telecommunications services were largely transmitted through wireless technologies and electricity through underground, sunk cables. He emphasised that:

> Telecommunications relies largely on wireless infrastructure and services that need limited land for investment and this explains why the industry has many players that are operating at the same level. The same with the electricity industry, which can be opened to nuclear and renewable energy without similar constraints that you find in the airport industry if we were to introduce significant competition to ACSA.

Policy Expert 3 and Regulatory Expert 4 further pointed out that while Lanseria was a private international airport, it was still small compared to the three leading ACSA airports, namely, OR Tambo, Cape Town and King Shaka[24]. There were other small airports outside the ACSA stable such as Hoedspruit in Limpopo and various local and provincial airports that were niche airports for tourists and trade respectively, with limited capabilities for international traffic and thus could not be treated as alternatives to ACSA. And according to Regulatory

[24] Lanseria is a privately owned commercial international airport based on the outskirts of Johannesburg. It is the fourth largest airport in South Africa following behind OR Tambo, Cape Town and King Shaka (Lanseria Airport, n.d.).

Expert 1, ACSA also enjoys an advantage because it was being treated as a network allowing cross-subsidisation across its nine airports. This, according to Industry Expert 2, was justified against the needs for ACSA to cross subsidise the less profitable airports. Policy Expert 3 refers to the cross-subsidisation model as a "one till" approach wherein the accounts of the different airports are integrated.

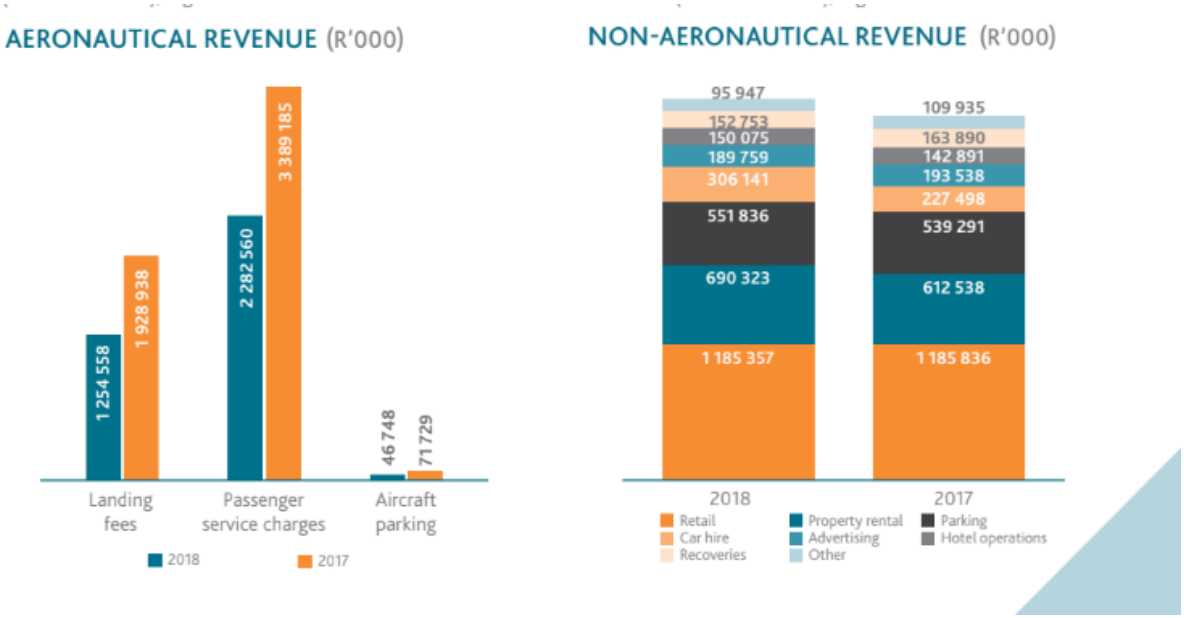
However, contrary to common the neo-classical view of the efficiency of natural monopolies, the South African airport industry was seen as not being cost efficient, hence the need for regulation. In fact, regulation was institutionalised from the beginning and not as a response to specific concerns about ACSA's abuse of its natural monopoly. However, evidence indicates that regulating the airport industry has become complex and there were concerns about ACSA's ability to function as an efficient monopoly explaining why the participants believed that a stronger regulator was needed.

Comparisons with the other industry regulators were made by the participants some of whom were oblivious to the challenges facing the telecommunications and the electricity industries as discussed in Chapter 4 and Chapter 5. The participants believed that the two industries with fully established regulators were doing better than the airport industry. The conclusion that the other industries were performing better than the airports was not backed by specific evidence but the normative expectation that the regulatory state was functioning optimally.

According to Industry Expert 3, having five part time members of the Regulating Committee, who also had their day jobs, was not adequate to regulate the airport industry, especially as ACSA had grown significantly over the years while the regulator remained the same. Figure 12 provides an overview of the performance in 2017 and 2018.

Figure 12

Overview of the Performance of ACSA (2017-2018)



Note. From ACSA (2019, p. 68)

Industry Expert 3 and Industry Expert 4 separately argued that government was taking advantage of ACSA's position as a natural monopoly to create an unfair playing field at the expense of the airline industry. Industry Expert 3, in particular, stated that "government decided that because ACSA was a natural monopoly given entry barriers associated with building airports, there was no need for a proper regulator". Put differently, she argued that government was taking advantage of ACSA's natural monopoly status to ignore the need for a strong regulation, which differs markedly with how the same government treated the electricity industry in particular. The industry experts observed that there was a link between the market structures and government's commitment to industry regulation. In this view, Regulatory Expert 1 argued that the neglect of the airport industry was due to the fact that government was not planning to liberalise the industry in the same way it did in telecommunications and has been attempting to do in the electricity industry.

According to Industry Expert 3 and Regulatory Expert 3, a poorly capacitated regulator raised the possibility for bias and therefore inefficiencies. They elaborated their conclusion by pointing out that in the past the regulator in the airport industry was seen to be close to the regulated entity, and that changed after 2009 with the appointment of a new Regulating Committee that "refused" to be dictated to by ACSA, as evidenced by the way the regulator has dealt with the tariffs since 2009. The tariffs following the steep increases before the World Cup were, according to the participant, generally fair.

It was the ability of the Regulator though under resourced to level the playing field that complicated its relationship with ACSA. This complex relationship between the regulator and the regulated firm since 2015, according to Regulatory Expert 2, was a "far cry" from the previous period when ACSA would even pay for the expenses of the regulator to attend international conferences; "things have changed although not to the level that was required to implement adequate price regulation". In his view "ACSA might not accept the current regulator as it did in the past when it would get the tariffs that it would have applied for. He pointed out that since 2015, ACSA received returns on investments that were below the cost of capital even though it was still doing well".

Comparing the airport industry with the electricity industry, Industry Expert 2 pointed out that:

> NERSA interrogates the submissions of Eskom and has a robust accounting regime. In the electricity environment, you cannot submit general accounting speak and demand a tariff. Eskom is required to submit its financial statements in a particular prescribed way. NERSA goes out of its way to consult with the public and it is not a buddy-buddy arrangement as we see in the aviation industry.

Industry Expert 1 disputed that ACSA was refusing to be regulated, pointing out that the problem arose from the misalignment between the regulator and the Minister. In his view,

there was a “huge” misalignment between the mandate of the regulator and the expectations of the Minister of Transport. He emphasised that ACSA was a “victim” of the lack of clarity on the alignment between the regulator and the Department, which was responsible for oversight of the entity. Industry Expert 1 posited that the views of the regulator were not aligned to those of government because “it was only focused on punishing ACSA, instead of incentivising the company adequately so that it can discharge its responsibilities”. This view raised questions about the role of the Department of Transport in relation to the two entities. Such a disjuncture arose because the Department would approve ACSA’s investment programmes as part of its corporate strategy only for the regulator to refuse to incentivise some of the investments when they did not meet its requirements.

To support this view, Industry Expert 1 cited the fact that the regulator had on various occasions refused to prefund ACSA when the firm needed resources to build new infrastructure even after consultations with the airline industry. In his view prefunding would entail ACSA applying for the tariffs before the next permission period if it needed additional funds to implement new capital projects, such as in the period leading to the 2010 FIFA World Cup. He argued that the regulator was not supportive of ACSA’s requests even though the government had asked the company to build new airport infrastructure. This, in his view, resulted in ACSA having to borrow from the capital markets with expectations that the regulator would reimburse it, only for the regulator to decline some of the investments, putting ACSA at the risk of defaulting. He concluded by pointing out that the lack of clarity on whether the regulator can prefund ACSA through tariffs makes price regulation in this industry unpredictable.

The natural monopoly status of ACSA has influenced the trajectory in this industry with implications for regulation. Like the other industries there was generally evidence of self-reinforcements and lock in. In particular, the market structure shaping the industry path

has persisted for years. As discussed above, the Regulating Committee was left to regulate an entity that has grown over the years while it remained the same. Achieving efficiency in this industry is thus the responsibility of the Regulating Committee. From an institutional standpoint this meant a poorly resourced regulator was mandated to deal with such a complex task, while government, as will be shown below, continued to take decisions with significant implications for the cost of providing services.

The path in this area was therefore informed by the nature of the industry as it was difficult, for instance, to build alternative airports due to limited land near the metropolitan areas. So, the natural monopoly in this industry was justified by economic considerations such as sunk costs and economies of scale.

6.2.2 Establishment and construction of the King Shaka International Airport

The construction of the King Shaka International Airport ranks as one of the examples of how political decisions influence efficiency in price regulation. The data indicates that the decision to establish a new airport was rushed, without proper planning, which led to significant budget overruns estimated at almost 100% of the initial budget as discussed below. Various participants pointed out that this was a classic case of the inability of politicians to plan properly as they were guided by ideology and self-interest as opposed to prudent economic considerations. Industry Expert 3, for instance, posited that regulators were needed as they bring expertise to complex infrastructure projects but politicians were only interested in seeing "huge structures" even when there was nothing to show in impact. This was a similar argument to the feedback by some of the participants in the electricity industry on government's decision to build two new power stations, Medupi and Kusile, which were

later plagued by delays, budget overruns and corruption challenges, as also reported by the Judicial Commission on State Capture in 2022[25].

The period leading to the hosting of the 2010 FIFA World Cup was a hive of activity in South Africa. Government's decision to host the World Cup affected various state and non-state institutions that had to invest in new infrastructure to enable the hosting of the event. The construction of the King Shaka International Airport has been cited as one of the examples of the infrastructure that had to be constructed within a short space of time to enable the hosting of the World Cup. It had not been in the plans of ACSA prior to the award of the hosting rights by FIFA to South Africa. Government was in favour of ACSA building a new airport under the guise of boosting its infrastructure drive and for tourism purposes. According to Industry Expert 2, plans to construct a new airport were only announced in 2007 and ACSA was required to conclude the project before June 2010, but only managed to achieve this in May 2010, a month before the World Cup.

Various industry experts indicated that the construction of King Shaka Airport was a political decision that ACSA had to implement even though it had a different view in favour of continuing to use the old Durban International Airport, which still had a lifespan of ten more years. The construction of a new airport while the existing one was still operational was also criticised by the participants. According to Regulatory Expert 1 the new airport led to significant budget overruns towards the 2010 FIFA World Cup, which also affected the airline industry as it coincided with the global economic crisis that started in 2009 and lasted for close to a decade. According to Industry Expert 2, the additional funds needed for the airport infrastructure during the World Cup was estimated at R3 billion, with ACSA arguing that it acted in the national interest and that the entire planning of the World Cup was not its

[25] The Judicial Commission on State Capture revealed coordinated, widespread corruption in various state-owned companies including Eskom, South African Airways, Transnet and Denel. The scale of corruption involved government ministers, boards and the management of the entities (Judicial Commission on State Capture, 2022).

responsibility but that was expected to play a significant role in ensuring that the airport infrastructure was of a good standard.

According to Policy Expert 2, the construction of the new airport was initially estimated at R3.2 billion but was eventually completed at R6.8 billion due to budget overruns as part of ACSA's fast track programme to ensure that the infrastructure was on time ahead of the World Cup. He further explained that these costs had to be included in the Regulatory Asset Base as soon as the infrastructure was ready to be used. ACSA had to recover the costs of its projects through the regulated levies, and the regulator also had to take into consideration that the company had to earn reasonable returns. As a solution, the Regulating Committee had to deduct part of the amount that ACSA sold the old airport for from the subsequent permission periods. The Durban Airport was sold to Transnet for an estimated R1.85 billion (Tourism Update, 2012). According to Industry Expert 3 and Industry Expert 4, it was a good thing as the Regulating Committee used the proceeds of a wrong decision to build a new airport to incentivise the airlines and the passengers.

6.2.3 Implications for and the Role of the Regulating Committee

Although the scope of the study focused on the costs arising out of political decisions, the role of the regulators in promoting efficiency in network industries remains significant. While it is recognised that there are no institution mechanism to mitigate costs from political decisions the regulators still play a role in the value chain as the incentivise the firms to provide services at reasonable costs. There is still a case to investigate how the regulators deal with efficiency at their own level as a way to determine how the system as a whole can mitigate the unintended consequences of political decision making. The Regulating Committee in the airport industry plays a significant role in the regulation of costs and tariffs in the industry. In carrying out its tasks, the Regulating Committee in this industry purports to

prioritise efficiency, which explains the use of CPI-X methodology through which it assesses the costs that eventually inform the tariffs that are charged by ACSA to the airlines.

According to Policy Expert 2, the scope of the procedures used by the Regulating Committee were aimed at ensuring that the tariffs "always reflect the cost of providing a service". This, he said, included the operating costs, depreciation, tax, and reasonable return on the asset base. In addition to this approach, the regulatory model would, according to Regulatory Expert 4, include the efficiency factor as follows:

> Efficiency factors in this industry are imposed on the company in order to push them to be efficient in providing the services. An efficiency factor can be defined as an index number and reflects efficiency gains that can be achieved by the regulated entity over the price cap or tariff period. In other words, it is the minimum cost that is required to provide a specific level of output for a given quality, which is the difference between a provider's actual cost performance and the performance of a fully efficient provider.

Policy Expert 2 argued that the regulator was able to ensure prudent pricing because it had a predetermined pricing methodology. According to Regulatory Expert 2, the airport industry used the same regulatory methodology as the electricity industry where focus is on the return on the Regulatory Asset Base, that is, the cost of the assets being used to provide a service. However, he pointed out that the determination of the productivity factor was a contentious issue in the same way that there were disagreements on the efficiency measures in the electricity industry. He pointed out that as in the electricity environment, ACSA was required to forecast future tariffs to inform the infrastructure that would be required and supported by the regulated tariff.

However, as in the electricity environment, he pointed out that ACSA would overestimate traffic focus and making commitments that it usually struggled to implement or realise. Industry Expert 1, on the other hand, was of the view that the regulator was not

experienced enough to deal with complex regulatory and financial accounting issues other than relying on consultants (Price Waterhouse Coopers had been retained over the years as consultants to perform this function). To support this, he cited the fact that the regulator also disagreed with ACSA even when the industry had agreed as ACSA was required to consult the industry before it could engage the regulator. According to Industry Expert 3, however, the agreements between ACSA and the industry were sometimes constrained by the fact that ACSA usually failed to meet its own forecasting, commitments and obligations. He pointed out that ACSA's failure to deliver was usually offset through the claw back or correction factor that was similar to the Regulatory Clearing Account in the electricity industry.

According to Regulatory Expert 2, transparency was generally a challenge because, unlike in the telecommunications industry, tariff setting processes in the airport industry were not prescribed in law, giving discretion to the regulator. He emphasised the need for consensus in setting the productivity or efficiency factor. He pointed out that "key to everything is how to set up the productivity levels and the productivity factor from the Regulatory Asset Base. In this regard the airport industry has a long way to go". The implications of the lack of clarity on the calculation of productivity has implications on whether the decrease in prices mentioned below were due to efficiency gains.

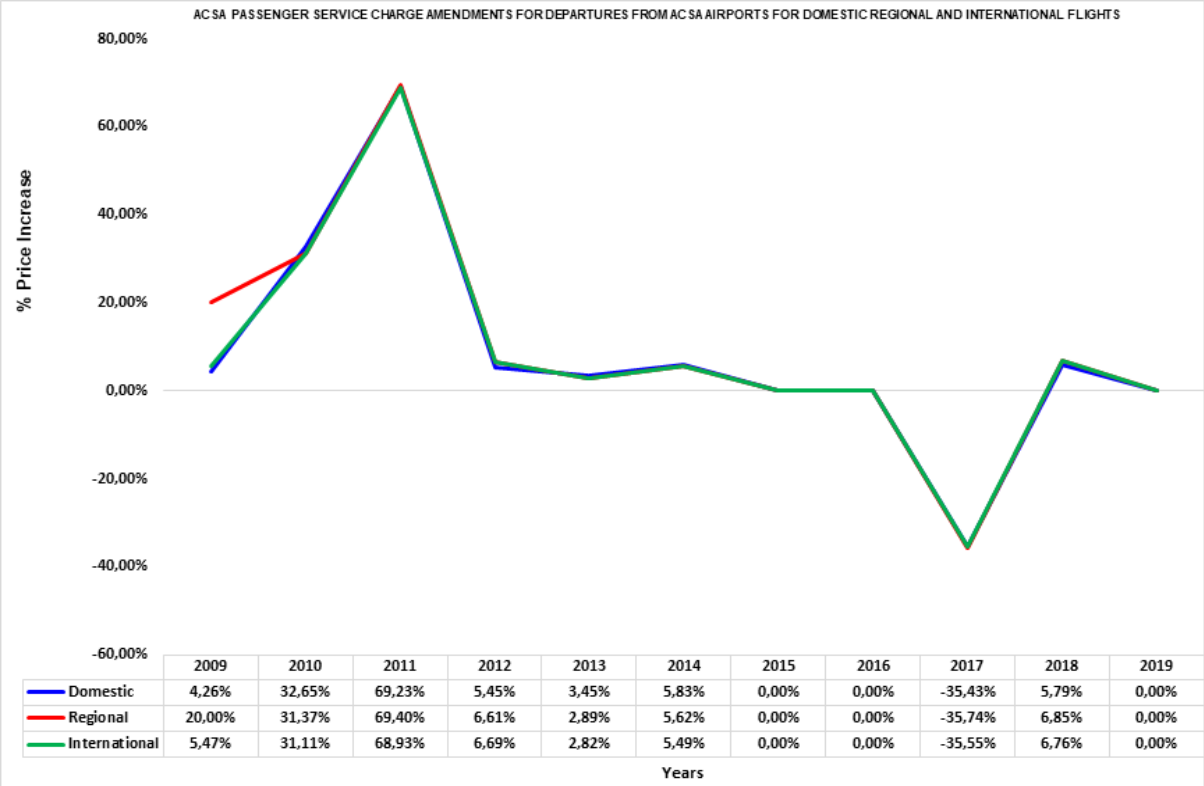
Industry Expert 3 and Industry Expert 4 indicated that the regulated tariffs were high for a long period until the latest determination in 2015, which significantly reduced the ACSA tariffs. This in part arose when ACSA implemented what was called "fast track" related to infrastructure upgrade at the OR Tambo International Airport and the construction of the King Shaka necessitating higher tariffs. However, the regulator refused to incentivise all the costs, arguing that the decision of government to build a new airport could not justify some of the expenses that were claimed by ACSA. According to Policy Expert 2, some of the costs incurred in that period were not allowed. For example:

> the costs incurred as a result of projects being accelerated, costs overruns where the regulator believed that ACSA could have avoided, projects arising out of project scope changes, were disallowed by the regulator. This means that these costs were not passed to the users and were attributed to the company.

Policy Expert 2 postulated that while there was a spike in the prices just before the World Cup, the prices later went down and remained the same for three years between 2014 and 2017, followed by a further 35% decrease in the prices in 2018. There were no planned increases for 2020 and 2021. He, however, acknowledged that the tariffs that had been charged since 2009 were higher than the charges prior to that but that has been addressed in the prices since 2014, considering the benefits that came with the infrastructure that was needed for South Africa to host the 2010 FIFA World Cup. ACSA's regulated tariff trajectory from 2009 to 2019 is highlighted in Figure 13.

Figure 13

ACSA's Regulated Tariffs (2009-2019)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Domestic	4,26%	32,65%	69,23%	5,45%	3,45%	5,83%	0,00%	0,00%	-35,43%	5,79%	0,00%
Regional	20,00%	31,37%	69,40%	6,61%	2,89%	5,62%	0,00%	0,00%	-35,74%	6,85%	0,00%
International	5,47%	31,11%	68,93%	6,69%	2,82%	5,49%	0,00%	0,00%	-35,55%	6,76%	0,00%

Note. Own work from data supplied by some of the participants

According to Policy Expert 3, the regulator performed well because while ACSA applied for 132% in 2010, it only received 40% that was later reduced by 35%, followed by further decreases, resulting in ACSA getting a return below the cost of capital. This, according to Policy Expert 2 and Regulatory Expert 4, happened because the costs incurred as a result of projects being accelerated and costs overruns could have been avoided. The regulator also disallowed the costs arising from the changes in scope.

While some of the participants generally suggested that the Regulating Committee did well to reduce ACSA's tariffs after the World Cup, there was no evidence that this was attained efficiently given the contestations about the lack of clarity on the calculation of the productive factor (X). As indicated above, some of the participants argued that the lack of

clarity on the productive factor remained contentious as it was also not explained in the Approach Document of the Regulating Committee. In the absence of clarity on the calculation of the productive factor, it is impossible to conclude that any decrease in fees would have been obtained efficiently.

6.3 Approaches to Improve Efficiency in Network Industries

The participants also shared their views and recommendations on approaches to improve efficiency in the airport industry. The recommendations of the participants include the restructuring and the capacitation of the regulator, clarification of the roles of the minister and the Department of Transport in tariff determinations, participation and contributions of the passengers during consultations on the public policy processes, including during the determination of the tariffs as in the other industries. The recommendations of the experts in this industry were discussed and included in the development of an integrated regulatory governance framework in Chapter 7. More generally, the participants recommended approaches to deal with efficiency cutting across the different segments of the regulatory state (policy maker v regulator; policy maker v regulated firm, and regulator v regulated firm). As in the other industries the recommendations points to a need for significant reforms cutting across the value chain of regulation. The recommendations are highlighted in the following paragraphs.

6.3.1 The establishment of an independent regulator was mentioned as one of the recommendations. Various participants recommended that the Department of Transport should establish a stand-alone regulator that is fully independent of the department. Such a regulator should according to Industry Expert 2 be modeled in the same way as ICASA and NERSA, which have their own structures and are operationally independent even though they are required to implement policies issued by their respective line Ministers. Regulatory Expert 3 and Industry Expert 4

recommended that the amalgamation of the various transport regulators into a single Transport Economic Regulator (TER)[26] should ensure equal focus on the different modes of transport and not lead to the marginalisation of aviation, as has been the case in the current environment. According to Industry Expert 3: "we would like to see a balance between the new Transport Economic Regulator and what currently exist[s] to ensure a degree of continuity and equal focus on all modes of transport". To ensure equitable attention to the different modes of transport, it is important that it is articulated in the relevant statutes.

6.3.2 Regulatory Expert 3 and Industry Expert 3 argued that there was a potential for ACSA sliding into detrimental monopolistic behaviour taking advantage of its proximity to the Minister and the Department of Transport. This in their view would be exacerbated by a weaker regulator that has remained the same while the industry has changed significantly in the past years; ACSA has grown into a complex business. In addition to establishing a new regulator, Industry Expert 2 recommended that the law should be amended to clarify the regulatory procedures and methodologies used in the tariff determinations. This, according to Industry Expert 2, should include investment in and the use of digital technologies such as data analytics to improve innovation in the way the regulator determines the tariffs.

6.3.3 Some of the participants, especially Industry Expert 2 and Industry Expert 3, suggested that the regulator was recently acting independently, dependent on the serving members of the regulator and the situation can always change depending on who serves on the regulator. In addition to the establishment of a fully-fledged regulator, the participants recommended that the role of the Minister during the tariff

[26] At the time of finalising this thesis February 2022, the Economic Regulation Bill (B1 -2020) was still pending in Parliament for further public consultation. The Bill seeks to integrate the regulation of the various modes of transport including aviation, airports, ports, rail and road.

determinations should be clarified in law considering that the same Minister also exercises oversight on ACSA. The reported engagement between the Minister and the regulator on tariff matters has to be clarified in the statute as it is currently illegal.

6.3.4 Policy Expert 3 recommended that the performance of regulation should also be measured in terms of the contribution of the aviation industry to tourism and trade, arguing in favour of mandatory consultation between the Transport Ministry and other Ministries and Departments that depended significantly on aviation, such as the Ministry of Tourism and the Ministry of Trade and Industry. In other words, he recommended that ACSA tariffs should only ensure that the company was sustainable and did not declare "mega profits", which it was wasting by investing in new international business ventures. Alongside this, Policy Expert 3 indicated that ACSA should not be allowed to use profits generated through tariffs in South Africa to invest in business ventures outside the country. Industry Expert 3 also recommended that National Treasury should be involved in the approval of the Corporate Plans of ACSA to ensure that they are prudent and efficient and focused on the sustainability of ACSA. This links with the need to ensure that there is account separation with separate treatment of aviation and non-aviation businesses within ACSA to prevent cross subsidisation.

6.3.5 Industry Expert 1 argued that there was a need for synergy between what the government and the regulator expected from ACSA as in his view this was currently not happening. He pointed out that this was not happening because the Minister of Transport would approve ACSA's capex and operational plans in the Corporate Plan only for the regulator to refuse to incentivise the same investments and expenditures. Industry Expert 1 and Regulatory Expert 4 also recommended that the law should be amended to ensure that the regulator was required by law to explain and publish its

reasons for final tariff determination. Such interplays between the regulator and the policy maker can best be explained in a transparent legal framework to ensure that there is transparency.

6.3.6 Calculating the efficiency or the productive factor was contentious as stated above. Industry Expert 1 argued that while the regulator's Approach Document provides methodologies for the different aspects of tariff determination, it was silent on how it calculated the productivity factor in its CPI-X formula. Industry Expert 1 added that there was no clarity on the mechanism used by the regulator to determine the rate of return on the assets (commercial rate). Notwithstanding this, Regulatory Expert 2 and Regulatory Expert 3 recommended that the current formula combining Rate of Return and CPI-X should still be used in this industry because it was suitable for an industry with one player. However, they concurred with Industry Expert 1 that there was a need for the clarification of the methodology related to the determination of efficiency and the rate of return. Such a methodology is currently needed to also protect the industry from steep tariff increases arising due to the impact of Covid-19 on the finances of ACSA.

6.3.7 Various participants, among them Policy Expert 3, Policy Expert 4, Industry Expert 3 and Industry Expert 4, also recommended that the passengers should be involved during the tariff determination processes considering that the passengers' charges constituted the largest portion of the regulated tariffs. While the regulator, as argued by Regulatory Expert 1, purports to represent the interests of the passengers, the participants recommended that the passengers should be represented by their own institutions, such as the airline industries. Industry Expert 3 and Industry Expert 4 recommended that consultations on tariff determinations should also be held in public as was the case in telecommunications and electricity to enable and ensure

transparency. Industry Expert 4 further recommended that having consultations in public would reduce the tensions that usually characterise the engagements among the parties. Public consultations are common cause in the electricity industry, and the airport industry can learn from such experiences.

6.3.8 Some of the participants indicated that the regulation of service standards was a significant part of price regulation wherein the regulator imposes certain standards on ACSA. In this regard Industry Expert 3 recommended that the law should introduce performance standards and penalties on ACSA. Industry Expert 4 indicated that this mattered also from a perception point of view, that is, how South Africa will be perceived by tourists and other travellers if it did not adhere to performance or compulsory service standards. She pointed out that low perception could lead to potential tourists not visiting South Africa. The review of the Airport Company South Africa Act should include these requirements.

6.3.9 Industry Expert 1, Industry Expert 3 and Industry Expert 4 recommended that the regulator should not be involved in the decision on the capex projects as this will contradict another provision that ACSA should first engage with the airline industry on its capex plans before submitting tariff requests to the regulator. They further argued that the regulator did not have capacity to determine complex capital expenditures. However, the removal of the regulator from approving infrastructure projects would require an amendment to the law to create an enabling environment for consensus between ACSA and the Airline Associations, because as things stand, ACSA has no obligations to accept the recommendations of the airline industry. The need for infrastructure should be determined by the regulated firm and the airline industries, subject to engagement with the regulatory industry, including justification of the need for such infrastructure, and to address efficiency concerns.

6.3.10 With regard to the use of digital technologies, industry Expert 1 indicated that ACSA was beginning to embrace digital technologies to ensure efficient running of the airports. ACSA was doing this on its own without a requirement from the regulator to do so. There was potential and scope for the regulator and ACSA to share digital innovations, but the regulator would need to invest in its own systems and innovations. Given the current challenges facing the regulator due to its lack of capacity and its over reliance on the consultants, the chances of the regulator embracing technological innovations were limited.

6.3.11 Regulatory Expert 1 and Industry Expert 2 recommended that the regulator particularly should still be innovative by taking advantage of digitisation to improve its data gathering methodologies even though doing so will require significant investments given the current state of the regulator, which is still not fully established. According to Industry Expert 2, Industry Expert 3, and Industry Expert , the use of digital technologies will also enhance transparency in the calculation of the efficiency factor and the return on capital invested. But this will depend on the extent to which government was prepared to have a regulator with the capacity it needs to regulate a huge, complex firm like ACSA. As in the case of the electricity and the telecommunications industries, the uptake and usage of digital technologies will improve efficiencies in the industry.

6.4 Summary of the Chapter

This chapter dealt with the findings from the review of documents and the semi-structured interviews with the participants in the airport industry. The chapter explored the interface between the Minister of Transport and the Regulating Committee in accordance with the practice of collaborative governance. According to the data from the foregoing, the Regulating Committee is not involved in licensing matters while the Minister can approve

investments in terms of the PFMA. As can be observed from the data, this results in a situation where the Regulating Committee may not be aware or involved in the discussion between the Minister and ACSA. Neither the Minister and ACSA have obligation to involve the Regulating Committee in their discussions and decisions. From the data it follows that the Regulating Committee usually is involved during the assessment of costs and the determination of the tariffs. The chasm explains why ACSA would approach the Minister whenever it was not satisfied with the tariff decisions of the regulator. ACSA does this, expecting backing from the Minister who would have sanctioned its investment decisions in its Corporate Plans.

According to the data, there is a case for this study given the evidence showing the influence of politics on efficiency in price regulation. The data shows that, notwithstanding that the regulator has not been fully capacitated, it has attempted to intervene in critical decisions that justify its independence. First its decisions on clawing back a portion of ACSA's profit from the sale of the old Durban International Airport shows that besides its capacity it was committed to ensure fairness in the industry. Likewise, the tariff trajectory over the years shows consistency. However, the question of whether such tariffs have been obtained efficiently still stands considering concerns expressed by the participants on the calculation of the efficiency factor. While the Regulating Committee purports to rely on the efficiency factor in determining the tariffs, its Approach Document was not explicit on how that was done in practice.

The participants suggested various interventions for consideration. Their recommendations formed part of the design of the recommended reforms in Chapter 7 and Chapter 8.

Chapter 7: Discussion of the Findings

This chapter provides an analysis of the research findings as presented in Chapters 4,5 and 6 above. In line with the objectives of the comparative case study methodology, the chapter primarily identifies similarities and differences among the three cases. It follows the same structure in the findings chapters in line with the research questions. The presentation and analysis of data and trends across the three industries is based on a theoretical analytical framework comprising various institutional theories, mainly discursive, sociological and historical institutionalism. Although the study has been premised around the politics, evidence from the data points to a significant contribution of the other disciplines and theories. This explains the inclusion of sociological institutionalism and historical institutionalism in the theoretical analysis of the data. Table 23 presents the analytical theoretical framework used in the analysis of data in this study. This is in line with the systems thinking approach discussed in Chapter 3. As mentioned in Chapter 3, the multi-theory dimension to regulation necessitated a systems approach. A systems analysis approach is further elaborated in the presentation and analysis of Figure 14 and Figure 15 in Chapter 8.

Table 23

Theoretical Analytical Framework

	Theoretical paradigms	Manifestations
Triggers (causes of social action)	Ideology (Discursive institutionalism)	In what way has the political ideology of the developmental state influenced collaborative governance leading to self-reinforcements and lock in in each industry?
	Institutional isomorphism (Sociological institutionalism)	How did institutional isomorphism contribute to collaborative governance?
Self-reinforcements and lock in	Path dependence (Historical institutionalism)	How did institutional inertia manifest itself including influence on the performance of price regulation?

Note. Own work

7.1 The Influence of the Political Ideology of the Developmental State on the Regulatory State

This section responds to the first research question regarding the influence of the political ideology of the developmental state on the regulatory state. The data indicates that both the developmental state and the regulatory state have been at play in South Africa's network industries. It is, however, the co-existence between the two paradigms including how that has influenced performance in the three industries that has informed the need of this study.

As suggested by Levi – Faur (2013, see also Majone, 1997) the two paradigms have always co-existed and complemented each other. This has been a case for the East Asian context even though the rise of the regulatory state followed on the developmental state. Both the regulatory state and the developmental state converged in driving the rise of the private sector and capitalism. Citing the example of the East Asian developmental states, which contributed towards the growth of the private sector and capitalism, Levi-Faur posited that there was scope for the two paradigms (in both theory and practice) to continue and expand into the future, while complimenting each other. Niklasson (2012) also pointed out that the interplay between the developmental state and the regulatory state could also be observed in the European context wherein governments implemented deregulation in some markets while, at the same time, continuing to support firms through subsidies, amongst other interventions.

Literature hitherto has however over relied on the East Asian experience of the developmental state to explain how the interface between the two paradigms can be studied and understood. There has been limited evidence from South Africa and other developing countries to explain country and industry specific complex issues, a focus of this study. Of

greater concern in the South African case, is how the interface between the two shaped governance and its influence on efficiency in network industries.

While the study sought to investigate the influence of the political ideology of the developmental state in shaping the institutions of the regulatory state, evidence indicates that such influence was reciprocal. Much as the political ideology influenced the regulatory state, the opposite was also happening as discussed below. The pursuit of the ideology of the developmental state was also influenced by the regulatory state explaining a reference to a confluence between the two. The use of the word confluence helps explain what has been happening in reality. It has not been a one-sided form of interaction between the two paradigms.

As already observed in Chapter 2, the developmental state in South Africa and in East Asia appear to have taken different forms which also explained behaviour and performance. A cursory look indicates that the South African environment has been plagued by considerable institutional gridlocks leading to misaligned policies and failure. This is contrary to the East Asian experience that motivated for highly resourced institutions and bureaucracies. Although the regulators were not in existence up until in the 1990s in the various East Asian developmental states, the emphasis on strong institutions was at the centre of what eventually happened. A critical question is whether the same happened (strong state institutions) in South Africa. Or whether a different set of conditions and outcomes have been at play wherein the transfer of bureaucratic capacities and responsibilities to the regulators has remained incomplete. The following sub- sections explore the South African situation in some detail.

7.1.1 The influence of the developmental state in shaping the institutions of the regulatory state

The data indicates that the South African regulatory state has been influenced by the pursuit of the political ideology of the development state. This is particularly the case since regulatory agencies, at the centre of the rise of the regulatory state, have operated in and sometimes constrained by the political environment. The regulatory state in the three industries in South Africa, like many other countries, has been shaped by the local political environment and preferences for the role of the Ministers leading to collaborative governance. Instead of a model dominated by the regulators, the South African regulatory state was that of collaboration between politics and the technocrats in the regulatory institutions.

Trends in South Africa have followed on the conclusions reached by Dubash and Morgan (2013) who posited that the advent of the independent regulators in various jurisdictions in the developing world did not remove the role of politics in the regulated industries. Contrary to Majone (1994) and Badran (2013) who postulated that the regulatory state was expected to replace what they called a positive state – an interventionist state characterised by nationalised enterprises and expansive government bureaucracies – the situation in South African still resembles a significant role of the positive state. The significant shift towards a may have happened Europe but certainly not for every other country and region. Jarvis (2012) citing the rise of the regulatory as an end of the Keynesian welfarist and interventionist state would have been premature were it meant for the South African context, where, the data shows, has been swinging between multiple, contradictory policy trajectories across the industries. The lingering ideological confusion that has shaped the ineffectual institutional design which was unlikely to be replaced anytime soon given the complex nature of redistributive concerns in the midst of significant economic decline.

Radaelli and Meuwese (2012) have also raised a question of delegation by governments to the regulators as part of the dimension to understand the governance matrices that followed the rise of the regulatory state. As Majone (1999) also pointed out, the entire exercise about the regulatory state and the establishment of the regulators was founded upon the expectation that the newly created institutions would play a significant role and have powers to shape the industries that they regulate. There is evidence to suggest that delegation happened to a larger or lesser degree depending on the country or industry in question. It is perhaps the extent to which the delegation happened as well as the associated institutional environment in each country that brings this inquiry into a sharp focus. Such issues are explored for the South African case in the following paragraphs. Majone (2007) suggested that the whole process of delegation was probably lost in the divide between the establishing strong accountability mechanisms for the regulators or allowing politicisation of the regulatory environment. The prevailing institutional environment in South Africa has to be understood within a similar perspective even if the specific issues are different to other political environments.

The ministers and the regulatory agencies in South Africa have been engaged in collaborative governance as opposed to hierarchical arrangements. Collaborative governance in the electricity and telecommunications industries were examples of the institutions that emerged from the interplay between the regulatory state and the developmental state. While the Regulating Committee in the airport industry has remained underdeveloped in the absence of its own institutional capacity, indications are that the creation of a new Transport Economic Regulator would follow similar arrangements in the electricity and the telecommunications industries wherein the Minister of Transport and the regulator would exercise collaborative governance.

According to the data, collaborative governance between the Ministers and the regulators has often been characterised by what Caballero and Soto-Onate (2016) called vague rules susceptible to different interpretations. A case in point were obligations on the Ministers in the electricity and telecommunications industry to consult with the regulators before issuing the ministerial determinations and directions, respectively. In both industries engagements between the Ministers and the regulators happened privately, raising concerns about the possibility of regulatory arbitrage wherein the regulators would follow the dictates of the Ministers. Up until the interventions of the courts the regulators were subservient to the Ministers. This was particularly a case in the electricity industry until the High Court in *Earthlife Africa Johannesburg versus the Minister of Energy and Others* ruled that the regulator was an independent body and was bound to act transparently by publicly stating its position during its consultations with the Minister. The court more specifically referred to the need for the regulator to comply with PAJA by undertaking its own public consultations.

The ruling in the *Minister of Telecommunications versus the Acting Chair of ICASA and Others* also exposed the limitations of the existing rules in relations to collaborative governance between the Minister and ICASA. The High Court ruled that the two were equal partners bound together by co-dependence. In terms of the Economic Regulation of Transport Bill, the issuance of the ministerial policies in the airport industry would be preceded by the regulator undertaking public consultations before the Minister can issue policy determinations on the markets and firms to be subjected to regulation. The provision in the Bill mitigates similar challenges that were mentioned in *Earthlife Africa versus the Minister of Energy and Others*. This requirement relates to obligations on the part of the regulator in the electricity industry to act independently, consult and publish its position on its engagement with the Minister.

The data in the two telecommunications and the electricity industries generally indicated that collaborative governance happened and was persisting because politicians still preferred to play a significant role in the industries even after the establishment of the regulatory agencies. According to the data, the respondents pointed out that collaborative governance was inevitable given the fact that politicians in government were not keen to give full mandates to the regulators to deal with licensing responsibilities. However, some of the participants especially in the telecommunications industry, pointed out that the politicians had a role to play by issuing policies and the failure of the industry can only be attributed to how collaborative governance was being implemented in practice.

The preference for a politically led environment was evident in the telecommunications and the electricity industries wherein the Ministers and the regulators shared the licensing mandates in their respective industries. The participants in the airport industry also pointed out that the Minister of Transport was an active participant in the industry. They argued that the failure by the Minister to establish a fully-fledged regulator was itself an expression of a political preference as the situation benefited ACSA which was under the political oversight of the same Minister.

The data also indicated that while the regulators across the industries were part of the state, in practice, they have been treated by the politicians as outsiders, hence the prevailing institutional arrangement. Such a conclusion was inevitable as the politicians who appointed the regulators still wanted to share responsibilities with them leading to complicated arrangements. For instance, while the law in the telecommunications industry mandated the Minister to issue policy directions to ICASA, there was no commensurate requirement on ICASA to implement. This was a case and practice besides the fact that it took a significant period for the Minister to issue a policy direction. Some of the participants estimated that it took close to ninety days as the Minister had to first publish a draft policy direction for

public comment. As required by section of PAJA, the Minister was bound to give a reasonable period for the interested parties to make oral or written submissions. In the telecommunications industry the engagements and the consultations were further complicated by the fact that the ECA was also silent on whether the Minister was required to consult ICASA before or after public consultations.

Another form of complex inter – agency relations was observed in the airport industry. In the airport industry, the Minister of Transport was empowered by the PFMA to approve the corporate strategies and plans of ACSA without consulting the regulator which falls under the same ministry. As will be shown below, this has resulted in tensions between the regulator and the regulated entity in the airport industry wherein the entity would expect the minister (who would have approved its corporate plans) to support it whenever it disagreed with the regulator on tariffs. ACSA's threats to take both the Minister and the Regulating Committee to court resulted in the Minister in 2009 intervening outside the law to appoint an arbitrator to adjudicate the conflict justifying concerns about a possibility of regulatory arbitrage in this industry. In an event that the disputes ended up in court, the Minister would potentially have been cited as one of the respondents considering his or her role in the approval of some of the infrastructure investments undertaken by ACSA including the construction of King Shaka Airport.

7.1.2 The influence of the institutions of the regulatory state on the developmental state

At the same time, the pursuit of the political ideology of the developmental state took place within a context shaped by the rules of the regulatory state. Much as the focus of this study was on the influence of the political ideology of the developmental state in shaping the institutions of the regulatory state, the data indicates that the opposite has been possible. The regulatory state has been associated with rules of regulation in accordance with credible commitment which shaped the approach to the developmental state in this industry. This

section therefore explores how credible commitment in the form of the rules of the regulatory state influenced (and some constrained) the pursuit of the developmental state. The emphasis on credible commitment also included a significant role of the courts as they adjudicated disputes in accordance with the prevailing rules. Although Ureana (2013) argued that a constitutional regulatory state was about the regulatory agencies implementing constitutional mandates, in the South African context, the constitution also regulated and constrained the extent to which the ideology of the developmental state could be pursued.

Various rules associated with credible commitment in the regulatory state in South Africa are found in the Constitution Act 108 of 1996, and apply to all industries. PAJA, as mentioned above, is one of the examples of credible commitment in the South African regulatory state. This is because of the sector-specific and the constitutionally enshrined rules that have shaped the context within which the political ideology of the regulatory state was being pursued.

Up until the court rulings mentioned above, the relationship between the two were skewed in favour of the Ministers as the regulators were consulted in private without any obligation to publicly explain the reasons for their concurrence or opposition to the draft determinations or policy directions. This has been particularly the case in the electricity and the telecommunications industries. As will be shown in the subsequent section, some of the participants attributed the failure of Kusile and Medupi power stations amidst delay and budget overruns to the limitations of collaborative governance, as the regulator did not undertake a public inquiry before licensing two meagre power stations.

Different forms of collaborative governance can be observed in the electricity and the telecommunications industry. The two differ because the electricity regulator was bound to implement the Ministerial Determinations while the telecommunications regulator was only required to consider the Ministerial Policy Directions. The participants in the

telecommunications industry attributed the difference in the two to section 192 of the Constitution, which provides for the establishment of an independent regulator to regulate the industry in the public interest. This provision has placed ICASA together with other Chapter 9 institutions that support constitutional democracy such as the Public Protector and the Auditor General. These institutions are required to regulate in public interest without fear or favour.

The data indicates that collaborative governance has persisted in the telecommunications and electricity industries even when it has resulted in industry failure. In the telecommunications industry, participants argued that allowing the Minister to issue policy directions after consultations with the regulator without commensurate requirement on the regulator to implement the ministerial policy was futile. This has an element of trust deficit wherein the actors do not trust each other's intentions. This, of course, can be attributed to the unstable nature of politics wherein politicians are in office for a short period and can easily change policies to suit their immediate interests. But as argued by some of the participants it takes a significant amount of time to conclude such a long, tedious process of consultation between the two. Added to this, has been concerns about blame shifting as the two actors are equally responsible, in the absence of a hierarchy, for the licensing of the radio frequency spectrum.

The data suggests that there was no likelihood of collaborative governance being reviewed. Were this to happen the result would involve removing one of the parties from the current arrangement. For instance, it may entail removing obligations on the Ministers to consult the regulators, which would have other unintended consequences. Some of the participants suggested that this would not be a solution as the regulators were responsible for implementation, thus needed to understand the context of ministerial policies and

determinations. The likelihood of the current arrangement continuing as it has hitherto, was still limited. Self-reinforcements and lock ins were evident across the three industries.

7.2 The Influence the Institutions of the Regulatory State on Efficiency Regulation

This section focuses on how the institutional arrangements resulting from the confluence of the ideology of the developmental state and the regulatory state have influenced efficiency. This level of inquiry is in line with the approach adopted who argued that there was a symbiotic relationship between the outcomes of regulation and the processes that led to them in the first place. This includes how the form of institutions influence behaviour and outcomes.

The policy makers and the regulators engage each other for the purposes of influencing how services are delivered by the regulated firms. It is at the level of the market structures where the regulated entities operate. When collaborative governance fails, that is decisions cannot be taken or inefficient ones are preferred, that is revealed when the regulators assess the costs in order to determine efficient tariffs.

The data, across the industries, show the inability of collaborative governance to mitigate the unintended consequences from political decisions. In the telecommunications industry, the delays and uncertainties in the licensing of the radio frequency spectrum have implications for access to services and competition. Both the small and large firms are affected. The dominant firms Vodacom and MTN are constrained to expand services or meet quality standards, while the smaller operators also need new opportunities to enhance competition and efficiency. As indicated in the data, the firms have had to resort to spectrum refarming at a cost. The cost of spectrum refarming has to be factored into the cost structure of the industry in an environment involving complex accounting methodologies when the regulator is generally seen to be under resourced to implement LRIC, leading to reliance on consultants. In the electricity industry, the Eskom path has persisted as its debt grows thereby

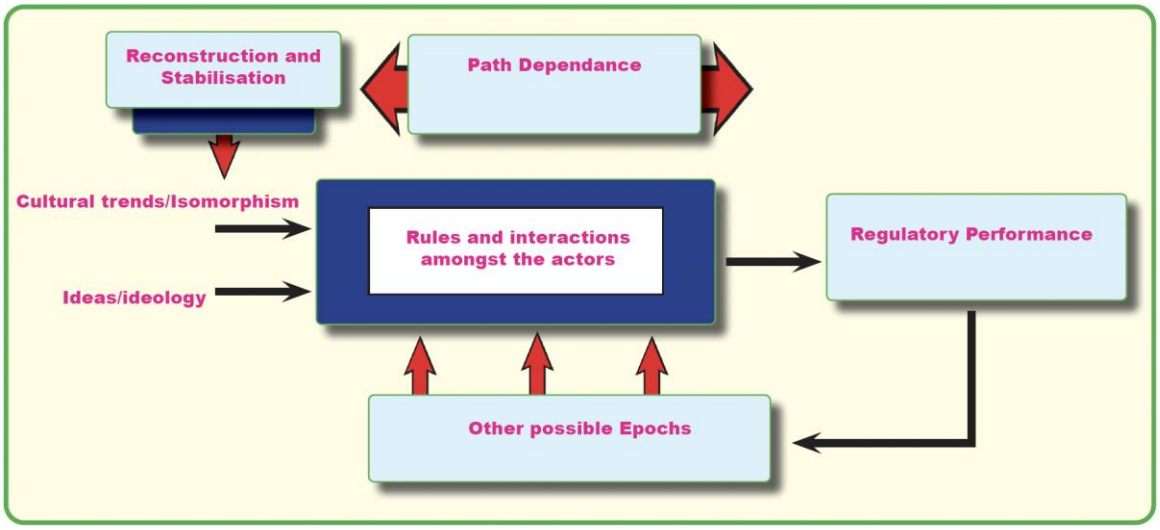
constraining the possibility of its exit which will require the fiscus to pay its liabilities. As a result, regulatory forbearance sets in in which NERSA has to exercise its discretions in the MYPD to ensure that Eskom keeps the lights on. NERSA has had to use the discretions in the MYPD to reward Eskom tariffs associated with, amongst others, the budget overruns in the construction of Medupi and Kusile.

Likewise, the regulator–operator tensions were evident in the airport industry drawing in the Minister who has a political oversight on ACSA and the establishes the Regulating Committee. The cost of King Shaka International Airport was, amongst others, central to the disagreements between the Regulating Committee and ACSA. The challenge in this industry was exacerbated by the lack of clarity and transparency in the calculation of the productive factor. Without clarity on the basis of the productive factor, it becomes a challenge to determine whether the tariffs reductions since 2015 were obtained efficiently by the regulator.

Besides the assessment of costs at the level of the regulators, there is no mechanism at the level of political decision making to mitigate the unintended costs of the pursuit of the ideology of the developmental state. Political risk is therefore common in the three industries. Figure 14 provides an analysis of the influence of the political ideology of the developmental state on the regulatory state leading to certain outcomes in the industries. The diagram indicates that the trends are generally common across the different industries.

Figure 14

Regulatory Governance Status Quo



Note. Own work

According to the diagram above, political ideology and institutional isomorphism (external environment) was a trigger of the South African regulatory state in the1990s. Conventional thinking may suggest that the regulatory state and the developmental state happened at different intervals yet literature and data indicate that the two have been at play simultaneously since the 1990s. This confluence between the two has thus been happening from the onset in the 1990s.

Debates leading to and after the introduction of the RDP and GEAR in the 1990s, discussed in Chapter 1, bear testimony to this complex interplay between the two paradigms in the South African context. Moreover, the discussions around the specific policies – especially within the ANC alliance – as discussed in Chapter 1, is based on the confluence between the regulatory state and the developmental state. The period starting in the 1990s is characterised here as a reconstruction and stabilisation phase because it was largely characterised by debates around the suitability of the Reconstruction and Development Programme or GEAR to accelerate the much-needed investments in the industries. The rules

introduced during that period in the different industries were therefore shaped by the confluence of the regulatory state and the developmental state. Drawing from the data in the different industries, the diagram indicates that collaborative governance resulted in path dependence wherein the institutions that emerged from the confluence between the two paradigms persisted even when they were failing.

In the absence of further reforms, the industries have been characterised by unintended outcomes or new epochs that repeat the same cycle of institutional misalignment and failure. New epochs emerge in the form of successive failing policy interventions and random interventions to address short term problems or challenges. Evidence in the electricity industry, for example, indicates that faced with challenges of unmet public policy goals of maintaining low prices while intending to liberalise the generation market, there was a knee-jerk reaction wherein government required ESKOM to build Medupi and Kusile power stations on short notice. Electricity challenges facing South Africa leading to scheduled nation-wide load shedding have been attributable to the misalignment of various policy decisions from the same government. Section 7.3 focuses on approaches to improve efficiency in price regulation.

7.3 Approaches to Improve Efficiency in Regulation

The participants in the different industry semi-structured interviews recommended a myriad of interventions to improve efficiency in price regulation. The recommendations range from institutional alignment to improve collaborative governance and the functioning of the market structures to strengthening approaches or methodologies used by the regulatory agencies to assess the costs as part of the determination of the tariffs. An overview of the recommendations across the three industries are highlighted in Table 24 as part of the comparative exercise in line with the object of the study.

Table 24

Overview of the Participants' Recommendations

Industry	Collaborative Governance	Market Structures	Approaches to Tariff Determinations
Electricity	Transparency in the engagement between the Minister and NERSA. This includes NERSA being bound to publish its views on Ministerial Determinations. Review collaborative governance in relation to the licensing of renewable energy projects to ensure that the roles of the Minister/Department and the regulator are specific.	Accelerate the liberalisation of the generation market subject to making the transmission network available to all competitors.	NERSA exercises various discretions as set out in the MYPD that can be open to abuse and regulatory forbearance to incentivise an underperforming monopoly for the sake of keeping the lights on. Introduce transparency in the exercise and use of such discretions.
Telecommunications	Review the current collaborative governance arrangement between the policy maker and regulator. This may include the regulator being required to implement policy directions issued by the Minister provided. Limit ministerial policy to broad policy outcomes as opposed to operational issues.	Unlock competition and universal access by making the radio frequency spectrum available to the firms.	Strengthen the regulatory capacity methodology through, among others, the emphasis on evidence including the use of big data analytics. Regulatory capacity needed to deal with such a complex methodology.
Airport	Establishment of a fully-fledged regulator with transparent relations with the Minister a key priority. The envisaged Transport Economic Regulator should treat all modes the same and build the necessary aviation capabilities.	Natural monopoly generally recommended provided it is subject to a stronger regulatory oversight.	Transparency is required in aspects of the CPI-X methodology. More specifically, this is in relation to the calculation of the productivity factor.

Note. Own work

The recommendations of the participants plus the insights from the data revealed systemic challenges facing the industries. The emerging picture overall is that of unmet expectations by the users of the services when those charged with governance and service delivery are stuck in unworkable institutional arrangements.

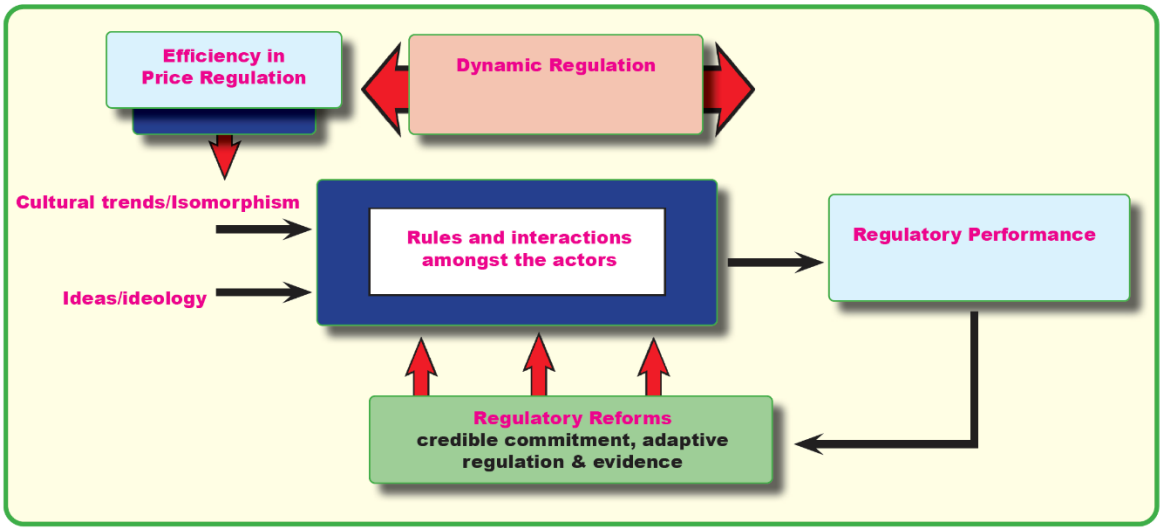
Given the foregoing, approaches to improve efficiency have to introduced beyond the divide between the regulatory state and the developmental state by embracing regulatory governance as a means to regulate for results. There is a justifiable call for a post regulatory state in South Africa, wherein approaches to regulation also recognise the significant influence of the political ideology of the developmental state. A post regulatory state entails a shift from a general emphasis on the rules of the regulatory state to concerns about how such rules achieve outcomes and benefits for the citizens. Regulatory governance has been defined broadly by scholars and public policy practitioners to mean the governance of regulation in the regulated industries (Ferris, 2001). There is no single way to explain what this means in practice. At best the scope of regulatory governance of will vary from one situation to another, depending on the issues being addressed. In the context of this study, regulatory governance is concerned with how institutions are structured and aligned to achieve defined outcomes.

For it to be effective, regulatory governance has to be anchored by a pursuit of clear results with the necessary buy in and collaboration of the stakeholders. Scholars amongst them Scott (2004) tended to place a significant emphasis on the role of multiple stakeholders with limited attention to what they should seek to achieve. There has been, as a result, limited focus on the results to be achieved as a rationale of regulatory governance. Results are usually taken as given even when there is no suitable institutional infrastructure to achieve them.

According to Oxera (2013) embracing outcomes beyond inputs and outputs is critical to ensure that regulation focuses on "the bigger picture" than a mere obsession with inter agency rivalries. Figure 15 proposes a conceptual approach to regulatory governance.

Figure 15

Recommended Regulatory Governance Framework



Note. Own work

In this diagram, efficiency is set as an outcome of regulation in an environment that has been and continues to be shaped by political ideology and institutional isomorphism. Bisbey et al. (2020) have associated efficiency with outcomes. In their articulation, "efficiency is about the relations between inputs, outputs, and outcomes (p.29). They further elaborated that efficiency was not just about lowering the costs but the entire process which includes inputs and outputs to achieve such outcomes which justifies focus on the value chain involving inputs, outputs and outcomes.

The use of outcomes and indicators to measure performance in regulation has grown over the years especially in the OECD countries. Such a specific focus and emphasis on outcomes enables the design of institutions that are fit for purpose. It shifts concerns and focus from institutions for their own stake but links them with the manner in which they

enable the attainment of defined results. Various organisations and scholars have explained the benefits of outcome-based regulation, highlighting that the benefits of embracing the approach outweighs the associated costs required to monitor and enforce compliance. For instance, the OECD (n.d) has posited:

> Performance (outcomes)- based regulation specifies required outcomes or objectives, rather than the means by which they must be achieved. Firms and individuals are able to choose the process by which they comply with the law. This allows them to identify processes that are more efficient and lower cost in relation to their circumstances, and also promotes innovation and the adoption of new technology on a broader scale. The focus of regulation is shifted to results or outputs, rather than inputs, and the degree of government intervention in markets is effectively reduced. Adoption of performance-based regulation can also simplify and clarify regulation, since they can be written in terms of underlying objectives, rather than requiring large amounts of detailed, prescriptive standards to be set out in legislative forms (p.135).

Following the same logic, the Canadian Food Inspection Agency (CFIA, n.d.) has postulated:

> Outcome – based regulatory requirements specify the desired result that a regulation intends to achieve, rather than describing a specific process or action that must be taken to achieve compliance, as in prescriptive regulations. For example, to prevent risks of standing water, rather that stipulating the number of drains required, and outcome-based requirement would simply state that there must be no standing water and let businesses decide how best to present it.

Outcome – based regulatory requirements allow the regulated party to choose measures to meet the requirement, while providing flexibility to introduce new technologies, processes and procedures. In following an outcome-based regulatory approach regulated parties can

apply cost effective, scientific, and technologies measures that best achieve a given regulatory outcome.

While outcome- based regulation is associated with the regulator – regulated entity aspect of the regulated value chain, it can also be adopted and adapted at the level of the policy maker- regulator interactions. Regulators cannot be expected to implement outcomes – based approaches to regulation with the regulated entities while themselves are still constrained in unworkable institutional arrangements with the policy makers. Starting at the policy maker – regulator interface would be ideal as part of the process of reforming the current institutional set up. In this regard, reform should be a continuous endeavour and process depending on the issues to be addressed at any given time across the regulatory ecosystem.

Coglianese (2012) differentiate between two sets of outcomes, namely intermediate and ultimate outcomes. According to Coglianese, " intermediate outcomes are those that contribute to or are causally related to the ultimate outcomes" (p.12). For instance, production efficiency can be an intermediary towards achieving allocative efficiency. This means that goods and services have to be produced efficiently, at reasonable cost, so that they are affordable at lower prices to the users.

Achieving such outcomes will require much more than the confluence of the regulatory state (institutional isomorphism) and the developmental state (political ideology). Various reforms as set out in the diagram will be required. What changes from the previous iteration of the diagram in Figure 14 is the introduction of various reforms such as enhancing credible commitment, introduction of future oriented and adaptive approaches to regulation as well as the use of evidence-based methods leading to dynamic regulation.

Dynamic regulation is generally an emerging concept and practice in the world of social science and regulation particularly and is associated with non-static and adaptive

approaches to regulation (Council of European Energy Regulators, n.d.). Following on this logic, Gensler (2022) has posited that it is conceivable to think of a static regulation in a dynamic society in need of constant change partly fuelled by advances in big data and digital technologies. Network industries have been singled out as some of the levers needed to drive economic growth and social development in South Africa. Various public policy actors have identified inefficient practices and outcomes in network industries as a constrain to efficiency in the economy as a whole (Ramaphosa, 2020; Ramaphosa, 2021). There is therefore a compelling rationale for innovation in public policy to ensure that results are achieved efficiently.

Dynamic regulation can therefore become a significant addition to innovation in regulatory science and practice necessitated by evidence of political risk in the different industries. Broadly speaking factoring risk has become a serious concern for policy makers and scholars across the world hence the need for innovation. Although the study as it commenced did not refer to risk, the data across the industries has pointed to the prevalence of political risk which can be mitigated by the introduction of institutions that are fit for purpose. The World Bank (n.d.) has opined that risk consideration achieves public policy goals including the welfare of the citizens and reduces burdens for businesses including lower risk sectors and firms. Therefore, left on its own, political risk can be detrimental to the entire national system of governance leaving social and economic expectations of the consumers unmet.

However dynamic regulation cannot be implemented in a sluggish institutional environment such as what obtains in South Africa's network industries. There is a need to strengthen collaborative governance as opposed to suggesting that it can be done away with. Political ideology itself will always be a reality as much as there are politicians, the challenge is always to mitigate its unintended consequences. Collaboration is necessary in complex

social systems including political governance such as regulation, what Kickert et al. (1997) calls a network of actors. A cohort of institutional reforms are therefore needed including how collaborative governance be reformed and exercised as set out in Figure 15.

7.4 Summary of the Chapter

This chapter discussed and analysed the data from the three findings chapters. The data from the different chapters recognised the role and influence of the ideology of the development state on the regulatory state as vice versa. While the focus of the study was on investigating the influence of the political ideology of the developmental state, the data indicate that the reverse has happened. The developmental state has also been influenced by the regulatory state. This interplay resulted in collaborative governance which has been institutionalised in the different laws with significant influence on the achievement of the goals of regulation including efficiency. The study, informed by the recommendations of the participants in the different industries, recommends a new governance framework wherein the rules or institutions are designed to achieve specific outcomes. Key in the governance framework are interventions to mitigate inefficiency in price regulation. The recommended reforms include the introduction of a regulatory policy to enhance transparency and predictability and a shift towards future oriented adaptive regulation as well as the use of evidence-based approaches.

Chapter 8: Conclusions and Recommendations

This chapter constitutes the conclusion and recommendations of the study. As its objective, the study sought to investigate and document the influence of the political ideology of the developmental state on the performance of the regulatory state. The two concepts, namely developmental state and regulatory state, were compared informed by the review of selected literature considering the enabling laws in each industry. While the purpose of the study was to investigate the influence the political ideology of the developmental state on the performance of the regulatory state, the data indicates that the opposite has also been happening, that is, the influence of the regulatory state on the developmental state. Evidence indicates that the two paradigms co-exist within the South African state across the different industries, leading to the prevailing institutional arrangements.

More specifically, the confluence of the two has resulted in collaborative governance between the policy makers and the regulators, particularly in the electricity and the telecommunications industries. While the regulatory state originated during a geo-political environment dominated by President Ronald Reagan in the United States of America and Premier Margaret Thatcher in the United Kingdom[27] its character, at least in the South African environment, has resembled a significant deviation from neo-liberalism. Evidence from the data indicates that "something new" which is neither of the two has emerged in need of further recharacterization. While scholars such as Levi-Faur (2013) have treated the outcome of the confluence of the two as persisting separate paradigms, the data in this study indicate that something new and complex has emerged. The discourse should therefore move

[27] Ronald Reagan was President of the United States of America from 1981 to 1989 while Margaret Thatcher was Prime Minister of the United Kingdom from 1979 to 1990. Together they are reputed to have championed the rise of neo-liberalism with significant emphasis on the reduction of the state, and scholars have attributed the rise of the regulatory state within this context (Monbiot, 2016).

beyond treating the two as separate to engaging the form of governance that has emerged from their integration.

For ease of reference, Table 18 comparing the two paradigms is reproduced below.

Regulatory State	Developmental State
Significant external influences (isomorphism) are highly possible.	Largely based on the local political environment.
Largely associated with the separation of the policy, regulatory and operations.	Mainly concerned with the role of the state, including the role of the state in policy, regulation and operations.
Underpinned by credible commitment in which the government establishes independent regulators and enacts a set of rules that enable the separation of institutions and protection of property rights.	Entrenches the role of the government leading to collaborative governance.
Focuses on enhancing efficiencies, especially production efficiency.	Generally concerned with redistribution and the allocative efficiency.
Places emphasis on the role of the regulators.	Emphasis is on the role of the government departments.
Supports market liberalization and competition	Entrenches the role of State-Owned Companies

Note. Own work

Informed by the foregoing, section 8.1 discusses the interplay between the developmental state and the regulatory state and resulting institutional context. Section 8.2 provides an overview of the interplay of the regulatory state and the developmental state and its influence on efficiency, followed in section 8.3, by an analysis of the influence of the regulatory state on the developmental state. Section 8.4 deals with the influence of collaborative governance on efficiency. This is followed in section 8.5 by the contribution of the study to theory and literature generally. The limitations of the study are contained in section 8.6. The chapter concludes in section 8.7 with issues identified for future research.

8.1 Interplay between the regulatory state and the developmental state and its influence on performance (efficiency)

The data from the study indicates that the interplay between the regulatory state and the developmental state resulted in collaborative governance between the policy makers and the regulators. While the focus of the study was on the influence of the ideology of the developmental state in shaping the institutions of the regulatory state, the opposite can be recognised. The regulatory state especially the rules in the Constitution and specific industry legislation has defined the parameters within which the developmental state is being pursued. The rulings by the courts in the different industries are evidence of this reality.

The confluence between the two paradigms, as stated, resulted in a distinct governance framework in the form of collaborative governance especially in the electricity and the telecommunications industries. there is no collaborative governance in the airport industry due to the mandate of the Regulating Committee which is limited to tariff determinations and do not extend to licensing and other regulatory activities. There are however indications that that the Economic Regulation of Transport Bill 2020 which was before the National Assembly already provide similar approach to collaborative governance wherein the Minister of Transport would consult the yet to be established regulator before issuing ministerial determinations.

According to the data, collaborative governance had not succeeded to mitigate inefficiencies arising out of political decisions. In fact. both the policy makers and the regulators have been involved in the decisions that were explored in this study. In the electricity industry, the Minister and NERSA were involved in the licensing of Medupi and Kusile. ICASA and the Minister of Communications were collectively responsible for the delay in the licensing of the radio frequency spectrum. The construction of the King Shaka International Airport revealed another complex governance system of decision making in the

airport industry wherein the Minister is empowered by the PFMA to approve ACSA's corporate plans without involving the regulator, leading to conflicts between the regulator and the regulated entity.

While the regulators have instituted their own mechanisms in the form of the regulatory accounting methodologies such as the Long Run Incremental Cost in telecommunications, Rate of Return in the electricity industry and CPI-X in the airport industry they have not succeeded to mitigate the costs emanating from the foregoing. The regulators generally engage with these costs after they have been incurred by the regulated firms. The absence of a mechanisms to mitigate the costs arising from political decisions has created a possibility of regulatory forbearance in the electricity industry wherein NERSA grants ESKOM tariff increases for the sake of keeping the lights on. A possibility of regulatory arbitrage can be observed in the airport industry given the risk of the Minister intervening to settle disputes between the Regulating Committee and ACSA outside the law. There is generally not mechanism to mitigate the risk of decisions that are taken outside the tariff determination processes.

8.2 Recommendations on Aligning the Regulatory State and the Developmental State to Improve Efficiency

Public consultations by the regulators on licensing matters as ordered by the courts in the electricity and telecommunications industries will not mitigate all the challenges associated with institutional gridlocks as mentioned above. For instance, the status quo can persist without new reforms to improve the performance of the industries. Delays in decision making can still happen even if it means disagreements between the two actors are settled by the courts. Policy–regulator disagreements can also play out in public during the consultation processes. As an example, the delays in the licensing of the radio frequency spectrum in the

telecommunications industry points to a risk of "paralysis" arising from institutional gridlocks.

Building on the rulings by the court in the electricity and telecommunications industries, there is a need for additional measures or interventions to improve efficiency in network industries. This entails a shift to embrace regulatory governance anchored around recognising and managing political risk. Although risk-based approach to regulation was not mentioned in the initial scope of this study, the data indicates political decisions constitute a risk against the attainment of efficiency. A shift towards regulatory governance expands the focus of reforms beyond the regulators but also considers measures aimed at mitigating the unintended consequences of politics, especially the pursuit of the political ideology of the developmental state.

Below are interventions that are recommended to reform the overall approach to regulation across the industries. Emphasis is placed on the need for systemic change in the way that regulation is governed across the industries to achieve specific results or outcomes. Specific industry recommendations emanating from this study (semi structured interviews) should be considered and implemented where necessary while at the same time implementing a system of cross industry learnings through benchmarking in areas such governance, managing political – regulator interface and in the use of cost accounting methodologies to assess costs and determine tariffs.

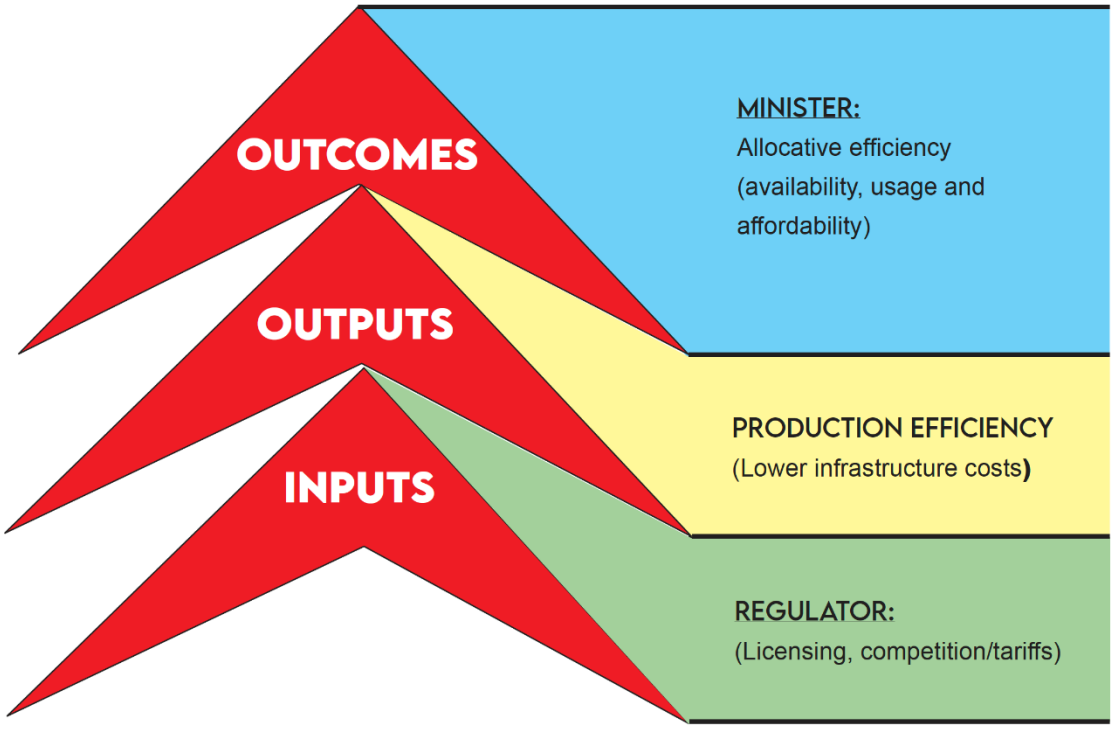
8.2.1 Review Collaborative Governance

There is evidence that collaborative governance in the different industries has not succeeded to achieve the expected public policy goals. As a starting point, there is a need for a governance paradigm that favours and enables the achievement of outcomes. The welfare of the economy and citizens depends on the achievement of specific and predetermined results. A shift towards outcome-based approach to regulation therefore necessitates a review of the

current institutional arrangement wherein the roles and responsibilities of the actors are further clarified. Future oriented and adaptive regulation are suitable for environments that are free from institutional inertia, where the roles of the key actors are clearly delineated but still complement each other. The roles of the two actors (policy makers and the regulators) should thus be disaggregated wherein the policy makers would be responsible for setting outcomes while the regulators are required to prioritise inputs and outputs towards the realisation of the outcomes as set out in Figure 16.

Figure 16

An Approach to Outcomes - Based Regulation



Note: Own work

As set out in the diagram, ministerial policy determinations and policy directions in the various industries should involve the setting outcomes to be met by the regulators and those that they regulate. In this regard, the responsibilities of the Ministers should include setting

universal access targets, quality of service standards and affordability goals while leaving the regulators to licence and regulate competition and tariffs.

ICASA, for instance, should be allowed to licence the radio frequency spectrum to fulfil the outcomes or results set out by the Minister. NERSA, also, should be allowed to licence additional electricity providers to meet government's goals expressed in the outcomes set out by the Minister of Energy. Similar approaches should be considered for the yet to be established transport regulator.

8.2.2 Regulatory Policy and Credible Commitment

Credible commitment in the form of rules such as sections 25 and 33 of the Constitution of South Africa have previously mitigated the unintended influence of politics in the electricity and telecommunications industries. Building on the experience in the OECD wherein governments have introduced regulatory policies to enable government-wide approaches to improve the quality of regulation, it is recommended that South Africa follow suit by introducing its own Regulatory Policy. South Africa's Regulatory Policy should commit government to regulate for better results by reviewing the mandates of the various actors as mentioned above, enhancing transparency in the consultations amongst the actors, ensuring that the regulators are adequately resourced, increasing uptake and usage of evidence- based approaches such as RIA and digital technologies at the political and regulatory levels. Such a statement should be incorporated in the review of the National Development Plan[28].

[28] The National Development Plan has been introduced by the government as South Africa's long-term vision for the future. Through the NDP governments seeks to bring together various stakeholders to contribute towards its development and implementation. According to the National Planning Commission (2012), the NDP "is a plan for South Africa. It provides a broad strategic framework to guide key choices and actions. Its success will depend on all South Africans taking responsibility for the plan, led by the President and Cabinet" (p.16). The NDP is suitable as an instrument to commit government and others to a regulatory paradigm that is fair and focused to achieving results.

8.2.3 Dynamic Regulation

The data indicates that institutions in political governance take a long time to change even when they are failing largely due to political considerations. Institutional inertia has shown to permeate into the entire governance system creating more gridlocks and failure. There is therefore a need for proactive approaches to mitigate the unintended consequences of institutional inertia starting with the review of the institutions especially the redefinition of the mandates as discussed in section 8.4.1 above. A dynamic regulatory environment can be enabled by an environment where the roles and responsibilities of the Ministers and the regulators are clarified. At the policy level, the laws should be less prescriptive thereby enabling the regulators to implement future oriented and adaptive approaches to regulation to achieve specific outcomes and results. Policies and regulations have to be justified by the extent to which they achieve well defined outcomes.

8.2.4 Evidence Based Approach to Regulation

Dynamic regulation should also be anchored around the use of evidence in the industries. Literature and the data indicated that political governance tends to be inflexible with institutional self-reinforcements or increasing returns even as they fail. The use of evidence across the different levels of regulation can help mitigate challenges associated with institutional inertia. RIA or other cost-based approaches should be considered and adapted to measure the costs and benefits of decisions at the political and the regulatory levels. The necessary conditions should also be created for the implementation of evidence-based approaches such as RIA in an environment that is prone to knee-jerk reactions and uninformed but popular decisions.

8.3 Contributions to Literature and Theory: Towards an Interdisciplinary Theory of Price Regulation

The study followed what Bryman (2012, p. 24) describes as a combination of deductive and inductive reasoning, wherein the analysis of a social system (in this case, price regulation) starts with understanding the application of existing theories to the research problem (applying deductive reasoning). This is followed by building a new theory (applying inductive reasoning) to address the identified gap in knowledge.

As one of its purposes, the study sought to contribute towards the development of theory. Although focused on efficiency in in at a high level, the study also reflected on the implications of the institutional misalignment on tariff determinations which is the stage where the regulators assess the costs of providing services before determining prices. Price regulation is therefore an important stage which translates costs to price. Given the significance of this stage in the manifestation of the rationale for regulation, it recommended that a broader theory be considered. The study proposes an Interdisciplinary Theory of Price Regulation as the basis of rethinking the approach to production efficiency as a significant intermediary outcome towards allocative efficiency.

In this study, various institutional theories were used to design the analytical framework and to analyse the data obtained from the semi-structured interviews and document reviews, applying deductive reasoning. Then, inductive reasoning was applied to analyse the findings in depth because the existing theory did not sufficiently explain the data. From the data it can be observed that the various institutional theories have been at play in the interplay between the regulatory state and the developmental state. Table 25 indicates how the different institutional theories have been applied or manifested in the study.

Table 25

Contributions and Manifestations of Institutional Theories

No	Theory	Manifestation
1	Discursive institutionalism (political ideology)	There is evidence of political ideology of the developmental state in the different industries, as mentioned above, the creation of the independent regulators and attempts to liberalise the markets.
2	Sociological institutionalism (regulatory state/institutional isomorphism)	The regulatory state in South Africa has also been triggered by what has been happening in other parts of the world, that is, the rise of the regulatory state in the developed and developing countries. There is evidence of the influence of the external environment on the regulatory state in South Africa.
3	Historical institutionalism (path dependence)	There is evidence of institutional inertia at various levels of regulation, including collaborative governance and in the market structures in the three industries. Institutional gridlocks have contributed to failure in price regulation.
4	Rational choice institutionalism (self-interest and corruption)	Although the study focused on the topic beyond capture, the data indicates a possible interplay between the pursuit of the ideology of the developmental state and the capture and corruption at the different levels of regulation. Evidence of capture can be observed in the electricity industry amidst reports of corruption at Eskom. More studies are recommended to investigate and document this.

Note. Own work

Against the foregoing, the study proposes a contribution towards an Interdisciplinary Theory of Price Regulation, arising from this research study, as follows:

> Price regulation has generally been associated with the discipline of economics to the exclusion of other disciplines such as politics, sociology and history. Evidence of the interdisciplinary nature of price regulation indicates that approaches to improve efficiency should integrate knowledge from the other disciplines. This approach can encourage innovation in price regulation in low regulatory innovation contexts.

The proposed formulation of the theory makes a shift from regulation being treated as an exclusive domain of the regulatory agencies but provides for the appraisal of the entire value chain of regulatory governance. There is evidence that the goals of price regulation to achieve efficiency have not been and cannot be realised without the actors paying equal attention to

the interdependencies involving them. Although the relationship between politics and price regulation is generally mentioned in a subset of academic and public policy literature, there has been a shortage of empirical evidence on how politics has influenced efficiency in price regulation, a motivation for this study. This is particularly caused by the fact that the influence of politics has been treated as exogenous and intrusive rather than as endogenous and integral to price regulation and regulation generally.

This is despite the fact that development of the rules in low regulatory innovation contexts such as South Africa are partly a political process that has persisted largely in the form of collaborative governance as the politicians and regulators interact with each other owing to the co-dependence of their functions. As evidenced in the study, such co-dependencies have contributed to regulatory failure. There is evidence suggesting that co-dependence will continue in the different industries, and failure can be mitigated by the redesign of a system that takes into consideration the influence of political ideology.

8.4 Limitations of the Study

While achieved its purpose in answering the main question and the supplementary questions, it had its limitations, which are discussed in this section. In its exploratory nature, this study covered a broad spectrum of issues that made it impossible to study each aspect in detail. This was, however, necessary to identify a range of issues that require further research, thus mitigating failures of studies of this nature.

The study was also based on a limited sample, which potentially limited insights into some of the areas being studied across the different industries. A study of this nature can include focus groups drawn from policy experts, regulatory experts and industry experts to validate some of the conclusions and recommendations. In addition to this, a study like this can also include other interest groups, especially those who benefit from the services that are

provided by the actors in the different industries. Others, such as trade unions and parliament can add new dimensions to the study.

The study made inferences about cause and effect or what is referred to as causality, without delving into the requisite methodological issues. This is amidst ongoing contestations between qualitative and quantitative researchers on the best method to deal with causality. Literature continues to highlight the complexity of this debate, especially whether qualitative studies can measure causality. Due to limited time and scope, the study did not deal with such a critical aspect of social research, which can best be enabled by in-depth analysis of the contribution of both the quantitative and qualitative methods.

The researcher was aware of possible bias given his former position as Director-General of the Department of Telecommunications and Postal services, which is responsible for policy making in that industry. However, this was mitigated by using semi-structured interviews thus allowing the participants to direct the flow of the interviews. Adherence to the ethics of the university was also significant in limiting the possibilities of bias.

8.5 Areas for Future Research

As an exploratory study, the research also identified possible areas for future studies. These are issues that could not be covered by this research given its limited scope and the time available. There are also issues that were not planned or anticipated but emerged in the course of the research. The following issues are recommended for further studies:

There is a recognised need for research on causality in regulation, especially how cause and effect methodologies can be understood and applied in qualitative studies. Studies are recommended to investigate the concepts and phenomena of self-reinforcements and lock in in the political governance specifically in relation to efficiency in regulation.

Owing to its focus and time the study did not study the influence of the ideology of the developmental state on allocative efficiency, another dimension of economic efficiency in addition to production efficiency.

Further studies are also needed and recommended on the relationship between allocative and productive efficiency in price regulation, in part to explain how the influence of the political ideology of the developmental state on production efficiency has influenced the attainment of the objective of allocative efficiency.

Although the study focused on the role of politics beyond capture, the data pointed to a possible relationship between the pursuit of the ideology of the developmental state and capture. Studies are therefore recommended to investigate and document the relationship between the political ideology of the developmental state on the one hand and capture, rent seeking and corruption on the other hand.

As part of the shift towards evidence-based approaches to regulation, studies are recommended on the uptake and usage of Regulatory Impact Analysis and the other cost-benefit analysis methods. This in particular is necessary given that undertaking cost-benefit analysis can be time consuming and requires extensive skills.

References

Abrutyn, S., & Turner, J. (2011). The Old Institutionalism meets the New Institutionalism. *Sociological Perspectives*, *54*(3), 283-306. https://www.researchgate.net/publication/259733012

African National Congress. (1994). *Reconstruction and Development Programme.* https://omalley.nelsonmandela.org/omalley/index.php/site/q/03lv02039/04lv02103/05lv02120/06lv02126.htm

African National Congress. (2007). *52nd National Conference Resolutions: Communications.* http://www.anc.org.za/content/52nd-national-conference-resolutions

African National Congress. (2017). *ANC Strategy & Tactics 2017.* https://www.politicsweb.co.za/documents/the-ancs-strategy--tactics-2017

Agrawal, V., & Rao, R. (2016). *Corporate Policies in the World with Information Asymmetry.* World Scientific Publishing Company.

Airport Company South Africa. (n.d.). *Airport tariffs.* www.acsa.co.za/home.asp?pid=8532

Alemu, R. (2011.). *Regulation of competition in the liberalized telecommunications sector in Sub Saharan Africa*: *Uganda's Experience*. http://www.compcom.co.za/wp-content/uploads/2014/09/south-africa-conference-on-competition-law.pdf

Altech Autopage Cellular (Pty) Ltd v Chairperson of the Council of the Independent Communications Authority of South Africa and Others (20002/08) [2008] ZAGPHC 268 (29 August 2008). ttp://www.saflii.org/za/cases/ZAGPHC/2008/268.html

Anderson, J. (2003). *Public policy making: An introduction*. Houghton Mifflin Company.

Anderson, J. (2011). *Public policy making.* (7th ed). Wadsworth.

Anney, V. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS),*5(2), 272-281 http://jeteraps.scholarlinkresearch.com/articles/Ensuring%20the%20Quality%20of%20the%20Findings%20of%20Qualitative%20Research%20NEW.pdf

Ansell, C., & Gash, A. (2007). *Collaborative Governance in Theory and Practice.* https://academic.oup.com/jpart/article/18/4/543/1090370

Arthur, W., & Arrow, K. (2011). *Increasing Returns and Path Dependence in the Economy*. University of Michigan.

Badran, A. (2013). Understanding the Egyptian Regulatory State: Independent Regulators in Theory and Practice. In N. Dubash & B. Morgan (Eds.), *The Rise of the Regulatory State of the South*, pp. 53–74. Oxford University Press.

Baker, L., & Phillips, J. (2018). Tension in the transition: The politics of electricity distribution in South Africa. *Environment and Planning: Politics and Space*, *37*(1), 177-196. https://journals.sagepub.com/doi/full/10.1177/2399654418778590

Baldwin, R. (2010). Better regulation: The search and the struggle, in R. Baldwin, M. Cave, & M. Lodge. (Eds.), *The Oxford Handbook of Regulation*, pp. 259–295. Oxford University Press.

Baldwin, R., Cave, M., & Lodge, M. (2012). *Understanding Regulation.* (2nd ed.). Oxford University Press.

Barbero, M., Couter, J., Jackers, R., Moueddene, K., Renders, E., Stevens, W., Toninato, Y., van der Peijl., & Versteele, D. (2016). *Big Data Analytics for policy making.* https://joinup.ec.europa.eu/sites/default/files/document/2016-07/dg_digit_study_big_data_analytics_for_policy_making.pdf

Barron, C. (2015, February 15). We have to ensure Eskom keeps lights on – NERSA. *Timeslive.* http://m.timeslive.co.za/businesstimes/?articleId=13960888

Bartle, I. (2005, September 8-11). *Politics and the regulatory state: The difficult case of Britain's railways* [Paper Presentation]. 'European Regulatory Agencies: A new model of governance? In Conference session 'Regulation in the Age of Governance', 3rd annual ECPR conference, Budapest. http://www.regulation.upf.edu/ecpr-05-papers/ibartle.pdf

Baskarada, S. (2014). *Qualitative Case Study Guidelines.* emanticscholar.org/paper/Qualitative-Case-Study-Guidelines-Baskarada/632d48bb5441b32c58c8312fc0f0d5274366729d

Bauer, J. (2013). *The Evolution of the European Regulatory Framework for Electronic Communications.* http://biblioteca.clacso.edu.ar/Espana/ibei/20161220041718/pdf_1369.pdf

Bauer, J. (2014). *Designing adaptive regulation.* https://www.caida.org/workshops/wie/1412/slides/wie2014_jbauer.pdf

Baxter, P., & Jack, S. (2008). *Qualitative case study methodology: Study design and implementation for novice researchers*. http://www.nova.edu/ssss/QR/QR13-4/baxter.pdf

Becker, M., Dorfler, T., & Gehring, T. (2018). *Credible commitment without independent regulatory agent: Evidence from the Security Council's United Nations Compensation Commission*. https://onlinelibrary.wiley.com/doi/full/10.1111/rego.12195

Bennear, L. & Weimer, J. (2019). *Adaptive regulation: Instrument choice for policy learning over time*. https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/Regulation%20-%20adaptive%20reg%20-%20Bennear%20Wiener%20on%20Adaptive%20Reg%20Instrum%20Choice%202019%2002%2012%20clean.pdf

Bert, N., & Kupfer, D. (2014). *Taking stock of current challenges. Third Annual Conference on the Regulation of Infrastructures.* http://fsr.eui.eu/Projects/FSR/Documents/WorkshopPaper/Other/2014/140613CRISummary/140613CRIISummary.pdf

Besley, T. (2007). The New Political Economy. *The Economic Journal*, *117* (524), 570–587. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-0297.2007.02097.x

Beyer, J. (2010). *The Same or Not the Same – On the Variety of Mechanisms of Path Dependence*. https://www.researchgate.net/publication/242586728_The_Same_or_Not_the_Same_-_On_the_Variety_of_Mechanisms_of_Path_Dependence

Bianchi, C., Nasi, G., & Rivenbark W. (2001). *Implementing Collaborative Governance: Models, Experiences and Challenges.* https://www.tandfonline.com/doi/full/10.1080/14719037.2021.1878777

Bisbey, J., Nourzad, S., Chu, C., Ouhadi, M. (2020). Enhancing the efficiency of infrastructure projects to improve access to finance. *Journal of Infrastructure, Policy and Development,* 4 (1), 27-49.

https://www.researchgate.net/publication/340283210_Enhancing_the_efficiency_of_infrastructure_projects_to_improve_access_to_finance

Black, P., Calitz, E., & Steenekamp, T. (2012). *Public Economics*. Oxford University Press.

Bliss, C. & Intriligator, M. (Eds.). (1994). *Pricing and Price Regulation: An Economic Theory for Public Enterprises and Public Utilities*. Elsevier.

Bodine, F. (2021). *Coding Qualitative Data*. Retrieved on January 20, 2021, from https://www.geopoll.com/blog/coding-qualitative-data/#Steps_for_Manually_Coding_Qualitative_Data

Bowen, G. (2009). *Document Analysis as a Qualitative Research Method.* https://www.researchgate.net/publication/240807798_Document_Analysis_as_a_Qualitative_Research_Method

Bostoen, F. (2019). *Regulating Online Platforms: Lessons from 100 years of Telecommunications Regulation.* http://www.concorrencia.pt/vPT/Estudos_e_Publicacoes/Premio_AdC/edicao2019/Documents/Regulating%20online%20platforms%20-%20Friso%20Bostoen.pdf

Brink, H. (1993). *Validity and Reliability in Qualitative Research.* https://www.researchgate.net/publication/14824314_Validity_and_reliability_in_qualitative_research

Bryman, A. (2012). *Social Research Methods (4th ed.).* Oxford University Press.

Caballero, G., & Soto-Onato, D. (2016). *Why transaction costs are so relevant in political governance? A new institutional survey*. https://www.researchgate.net/publication/303525422_Why_transaction_costs_are_so_relevant_in_political_governance_A_new_institutional_survey

Canadian Food Inspection Agency (n.d.). *Outcomes- based regulation policy.* https://inspection.canada.ca/about-cfia/acts-and-regulations/safe-and-responsive-regulatory-framework/outcome-based-regulations/eng/1545927831816/1545927832066

Carpenter, D. & Moss, D. (2014). *Preventing Regulatory Capture: Special Interest Influence and How to Limit It.*

https://www.tobinproject.org/sites/tobinproject.org/files/assets/Introduction%20from%20Preventingclar%20Regulatory%20Capture.pdf

CDC. (2018). *Data Collection Methods for Evaluation: Document Review*. https://www.cdc.gov/healthyyouth/evaluation/pdf/brief18.pdf

Centre for Regulation and Competition. (2004). *Why Regulatory Governance Matters?* https://assets.publishing.service.gov.uk/media/57a08cc9ed915d622c001593/CRCpb2.pdf

Chang, H. & Grabel, H. (2007). *Reclaiming Development: An Alternative Policy Manual*. Zed Books.

Chang, H. (2007). *State Owned Enterprise Reform Policy. Notes for the United Nations Department for Economic and Social Affairs (UNDESA).* https://esa.un.org/techcoop/documents/PN_SOEReformNote.pdf

Christensen, J. (2010, June 17-19). *Public Interest Regulation Reconsidered* [Paper Presentation]. "Regulation at the Age of Crisis", ECPR Regulatory Governance Standing Group, 3rd Biennial Conference, University College, Dublin. http://regulation.upf.edu/dublin-10-papers/1J1.pdf

Christensen, L.B., Johnson, R.B. & Turner, A.T. (2014). *Research Methods, Design, and Analysis.* Pearson.

Christensen, T., & Laegrid, P. (2007). Regulatory agencies – the challenges of balancing autonomy and political control. *Governance, 20* (3), 499-520. https://www.researchgate.net/publication/227521677_Regulatory_Agencies_The_Challenge_of_Balancing_Agency_Autonomy_and_Political_Control

Choi, J. (2002). *Regulatory Forbearance and Financial Crisis in South Korea.* https://www.jstor.org/stable/10.1525/as.2002.42.2.251

Clark, B. (2016). *Political Economy: A Comparative Approach* (3rd ed.). Praeger.

Cloete, F., & de Coning, C. (Eds.). (2011). *Improving Public Policy* (3rd ed). Van Schaik.

Coase, R. (1960). The Problem of Social Cost. *Journal of Law and Economics, 3* (18), 837–877. https://www.law.uchicago.edu/files/file/coase-problem.pdf

Coglianese, C. (2012). *Measuring Regulatory Performance: Evaluating the Impact of Regulation and Regulatory Policy*. http://www.oecd.org/gov/regulatory-policy/1_coglianese%20web.pdf

Coglianese, C. (Ed.). (2017). *Achieving Regulatory Excellence*. Brookings Institution Press.

Cole, N. (2019). *Theories of ideology and its relationship to Marxist Theory*. https://www.thoughtco.com/ideology-definition-3026356

Competition Act No 89 of 1998, *Government Gazette No 19412* (1998). Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/201409/a89-98.pdf

Competition Commission South Africa. (2019). *Data Market Inquiry: Summary of provisional findings and recommendations.* http://www.compcom.co.za/wp-content/uploads/2019/12/Data-Services-Inquiry-Summary.pdf

Competition Commission South Africa. (2020). *Data Market Inquiry.* http://www.compcom.co.za/newsletter/data-market-inquiry/

Constitution of the Republic of South Africa Act No 108 of 1996. https://www.gov.za/documents/constitution-republic-south-africa-1996

Council for European Energy Regulators. (n.d). *CEER fit for Innovation Through Dynamic Regulation.* https://www.ceer.eu/dynamic-regulation#

Corporasso, J, & Levinine, D. (1992). *Theories of Political Economy*. https://www.amazon.com/Theories-Political-Economy-James-Caporaso-ebook/dp/B00E3UR2Z4?asin=B00E3UR2Z4&revisionId=5c5f4314&format=1&depth=1

Corruption Watch. (2012). *What Constitutes Public Interest*?. https://www.corruptionwatch.org.za/what-constitutes-public-interest-2/#:~:text=For%20instance%2C%20the%20Public%20Service,some%20kind%20of%20corrupt%20activity.

Creamer, T. (2019, February 1). Technical defects at Medupi and Kusile resulting in serious underperformance. *Engineering News.* https://www.engineeringnews.co.za/article/technical-defects-at-medupi-and-kusile-resulting-serious-underperformance-2019-02-01-1

Creamer, T. (2020, May 21). Controversial plan to renegotiate IPP tariffs is proceeding, De Ruyter confirms. *Engineering News.* https://www.engineeringnews.co.za/article/controversial-plan-to-renegotiate-of-ipp-tariffs-is-proceeding-de-ruyter-cocranfirms-2020-05-21

Creswell, J. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.

Crowe, S., Creswell, K., Robertson, A., Huby, G., Avery, & Sheikh. (2011). *The Case Study Approach.* https://link.springer.com/article/10.1186/1471-2288-11-100

Cseres, K.J. (2008). What has competition done for consumers in liberalized markets? *Competition Law Review, 4*(2), 77–121. http://www.clasf.org/CompLRev/Issues/Vol4Iss2Art1Cseres.pdf

Cypress, B. (2017). *Rigor of Reliability and Validity in Qualitative Research: Perspectives, Strategies, Reconceptualization and Recommendations.* https://www.nursingcenter.com/wkhlrp/Handlers/articleContent.pdf?key=pdf_00003465-201707000-00007

De Jager, T. (2015). *Considering the impact of anonymity on the quality of data obtained in an insight community*. https://www.samra.co.za/wp-content/uploads/2015/05/de-Jager-Considering-the-impact-of-anonymity-on-the-quality-of-data-obtained-in-an-insight-community.pdf

Decker, C. (2015), *Modern Economic Regulation: An introduction to theory and practice*. Cambridge University Press.

Deloitte. (2020). *Using Regtech to transform compliance and risk from support functions into business differentiators.* https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/risk/lu-using-regtech-to-transform-compliance-and-risk-from-support-functions-into-business-differentiators.pdf

Delvetool .(n.d.). *Qualitative Analysis made Easy.* Retrieved October 20, 2021, from https://delvetool.com/

Department for International Development. (2009). *Political Economy Analysis*. https://www.gsdrc.org/docs/open/po58.pdf

Department of Finance. (1996). *Growth, Employment and Redistribution Strategy* http://www.treasury.gov.za/publications/other/gear/chapters.pdf

Department of Minerals and Energy. (1998). *White Paper on the Energy Policy of the Republic of South Africa, 1998.* http://www.energy.gov.za/files/policies/whitepaper_energypolicy_1998.pdf

Department of Mineral Resources and Energy. (2020). *Integrated National Electrification Programme*. http://www.energy.gov.za/

Department of Mineral Resources and Energy (2020). *Integrated National Electrification Programme*. https://www.gov.za/about-government/government-programmes/inep

Department of Public Enterprises. (2019). *Briefing by the Department of Public Enterprises to the Portfolio Committee on Public Enterprises. Presentation. 13 February 2019* [Powerpoint].https://dpe.gov.za/wp-content/uploads/2019/07/Presentation-by-the-Department-of-Public-Enterprises-to-the-Portfolio-Committee-of-Public-Enterprises1.pdf

Department of Public Enterprises (2020, December 14). *Public Enterprises welcomes R1.56. billion recovery from ABB South Africa* [Media Release]. https://www.gov.za/speeches/dpe-welcomes-eskom-siu-recovery-r156-bln-abb-sa-14-dec-2020-0000

Department of Telecommunications and Postal Services. (2016). *National Integrated ICT Policy White Paper, 2016.* https://www.dtps.gov.za/images/phocagallery/Popular_Topic_Pictures/National_Integrated_ICT_Policy_White.pdf

Descombe, M. (2013). *Research Proposals*. Open University Press.

Dodero, L. (n.d.). *An analysis of the rational comprehensive model in selected cities in developing countries*. http://repec.ver.ucc.mx/documents/num_3_ago_2010_004.pdf

Dubash, N., & Morgan, B. (2013). In N. Dubash & B. Morgan (Eds.), *The Rise of the Regulatory State of the South* (pp.1-23). Oxford University Press.

Vergne, J., & Durand, R. (2011). *The Path of Most Persistence: An Evolutionary Perspective on Path Dependence and Dynamic Capabilities*. https://www.researchgate.net/publication/50952990_The_Path_of_Most_Persistence_An_Evolutionary_Perspective_on_Path_Dependence_and_Dynamic_Capabilities/link/004635319c3ffdb397000000/download

Earthlife Africa Johannesburg and Another v Minister of Energy and Others (19529/2015) [2017] ZAWCHC 50; [2017] 3 All SA 187 (WCC); 2017 (5) SA 227 (WCC) (26 April 2017). http://www.saflii.org/cgi-bin/disp.pl?file=za/cases/ZAWCHC/2017/50.html&query=Earthlife

Eberhard, A. (2012). *Rethinking Economic Regulation of Infrastructure Industries. South African Economic Regulators Conference 21 & 22 August 2012 Johannesburg* [PowerPoint]. http://www.gsb.uct.ac.za/files/SAEconomicRegulatorsConference.pdf

Economic Development Department. (2012). *The National Growth Path*. http://www.economic.gov.za/communications/51-publications/151-the-new-growth-path-framework

Economic Regulation of Transport Bill [B1-2020]. Republic of South Africa. https://www.parliament.gov.za/storage/app/media/CommitteeNotices/2021/december/15-12-2021/Economic_Regulation_of_Transport_Bill/B1-2020_Economic_Regulation_of_Transport.pdf

Economics Times of India. (n.d). *Definition of Principal-Agent Problem*, from https://economictimes.indiatimes.com/definition/principle-agent-problem

Education Training Uni.t (n.d.). *The developmental state*. https://www.etu.org.za/toolbox/docs/govern/state.html

Eggers, W., & Turley, M. (2018). *The future of regulation: Principles for regulating emerging technologies.* https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-regulation/regulating-emerging-technology.html

Electoral Institute of South Africa. (n.d.). *South Africa: 1994 National Assembly Results.* https://www.eisa.org/wep/sou1994results1.htm

Electricity Regulation Act No 4 of 2006, *Government Gazette No 28992* (2006). Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/201409/a4-060.pdf

Emerson, K., Nabatchi, T., & Balogh, S. (2011). *An Integrative Approach to Collaborative Governance*. https://academic.oup.com/jpart/article/22/1/1/944908

Ernst and Young. (2020). *Regulatory Technology (Regtech).* https://www.ey.com/en_us/financial-services/how-technology-can-be-used-to-manage-evolving-regulatory-environment

Eskom & SIU. (2020, December 11). *Eskom and the Special Investigating Unit will recover R1.56 billion in overpayments made to ABB South Africa* [Media Release].

https://www.cbn.co.za/featured/eskom-and-the-special-investigating-unit-recover-r1-56-billion-in-overpayments-made-to-abb-south-africa/

Eskom Holdings SOC Limited v McKinsey and Company Africa (Pty) Ltd and Others (22877/2018) [2019] ZAGPPHC 185 (18 June 2019). http://www.saflii.org/za/cases/ZAGPPHC/2019/185.pdf

Eskom Holdings SOC Limited v National Energy Regulator of South Africa and Others (74870/2019) [2020] ZAGPJHC 168 (28 July 2020). http://www.saflii.org/cgi-bin/disp.pl?file=za/cases/ZAGPJHC/2020/168.html&query=ESKOM

Estache, A., & Wren-Lewis, L. (2010). On the theory and evidence on regulation of network industries in developing countries, in Baldwin, R., Cave, M., & Lodge, M. (Eds.). *Oxford Handbook of Regulation (*pp. 371– 406). Oxford University Press.

Estrin, S., & Laidler, D. (1995). *Introduction to Microeconomics* (4th ed). Prentice Hall.

Ferris, T. (2001). *Regulatory Governance: Improving the institutional basis for sectoral regulatory of infrastructure public services – Ireland's experience.* https://www.oecd.org/gov/budgeting/2730657.pdf

Fichera, M .(2016). *Big Data Analytics for Policy Making Report.* https://joinup.ec.europa.eu/collection/big-data-and-open-knowledge-public-administrations/document/big-data-analytics-policy-making-report

Financial Stability Board. (2020). *FSB report highlights increased use of Regtech and Suptech.* https://www.fsb.org/2020/10/fsb-report-highlights-increased-use-of-regtech-and-suptech/#:~:text=The%20Financial%20Stability%20Board%20(FSB,FSB%20members%20and%20regulated%20institutions.&text=SupTech%20and%20RegTech%20tools%20could%20have%20important%20benefits%20for%20financial%20stability

Fischer, F. (2003). *Reframing Public Policy*. Oxford University Press.

FNA. (2020). *Suptech for Central Banks and Supervisors.* Retrieved September 10, 2021, from https://fna.fi/suptech/

Freeman, J., & Jackson, J. (2012). *Symposium on Models of Path Dependence.* https://www.jstor.org/stable/23260170?seq=1

Friel, D. (2017). *Understanding institutions: Different paradigms, different conclusions.* https://www.researchgate.net/publication/311917070_Understanding_institutions_different_paradigms_different_conclusionshague

Fumkin, P., & Galaskiewicz, J. (2004). Institutional isomorphism and public sector organization. *Journal of Public Administration Research and Theory*, *14*(3), 283–307. https://arizona.pure.elsevier.com/en/publications/institutional-isomorphism-and-public-sector-organizations

Garud, R., Kumaraswamy, A., & Karnoe, P. (2010). Path dependence or path creation? *Journal of Management Studies*, *47* (4), p. 760—774. https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1467-6486.2009.00914.x

Genesis Analytics. (n.d.). *Critical analysis of ESKOM's Multi-Year Price Increases.* https://www.genesis-analytics.com/projects/critical-review-and-analysis-of-eskoms-multi-year-price-determinations-mypd-1-2-and-3

Golafshani, N. (2003). *Understanding Reliability and Validity in Research.* https://core.ac.uk/download/pdf/51087041.pdf

Gomez-Ibanez, J. (2003). *Monopoly as a Contracting Problem, in Regulating Infrastructure: Monopoly, Contracts, and Discretion*. Harvard University Press.

Goodman, M. (n.d.). *Systems Thinking: What, Why, When, Where and How*? https://fnhpa.ca/_Library/KC_BP_5_Skills/SYSTEMS_THINKING.pdf

Goodwin, N., Ackerman, F., & Weisskopf, T. (2009). *Microeconomics in context.* (2nd ed.). ME Sharpe.

Gordhan, P. (2019). Foreword by the Minister. *Department of Public Enterprises Annual Report 2018/19.* https://dpe.gov.za/dpe-annual-report-2018-2019/

Gottinger, H. (2003). *Economies of Network Industries.* https://www.researchgate.net/publication/259870946_Economies_of_Network_Industries

Gupta, A., & Briscoe, F. (2020). *Organisational political ideology and corporate openness to social activism.* https://journals.sagepub.com/doi/abs/10.1177/0001839219852954

Hahnel, R. (2014). *The ABC of Political Economy: A Modern Approach*. Pluto Press.

Halai, A. (2006). *Ethics in Qualitative Research: Issues and Challenges.* https://assets.publishing.service.gov.uk/media/57a08c2aed915d622c001185/iccpaper1.pdf

Hall, P., & Taylor, R. (1996). *Political Science and the Three New Institutionalisms*. http://edoc.vifapol.de/opus/volltexte/2011/2782/pdf/dp96_6.pdf

Harrington, W., Heinzerling, L., & Mogenstern, R. (Eds.). (2009). *Reforming Regulatory Impact Analysis.* Resources for the Future.

Harrison, H., Birks, M., Franklin, & Mills, J. (2017). *Case Study Research: Foundations for Methodological Orientations.* https://www.qualitative-research.net/index.php/fqs/article/view/2655/4080

Harrison, K., & Boyd, J. **(**2018). *The role of ideology in politics and society.* https://www.researchgate.net/publication/327126687_The_role_of_ideology_in_politics_and_society/citation/download

Hauge, J. & Sappington, D. (2010). Pricing in network industries, in *The Oxford Handbook of Regulation*, R. Baldwin, M. Cave, and & M. Lodge (Eds.), Oxford University Press.

Hawthorne, R., Mondliwa, P., Paremoer, T., & Robb, G. (2016). *Competition, barriers to entry and inclusive growth: Telecommunications Sector Study.* https://static1.squarespace.com/static/52246331e4b0a46e5f1b8ce5/t/576916b3e58c62969208f300/1466504893026/CCRED+Working+Paper+2_2016_BTE_Telecommunication+Sector.pdf

Helm, D. (2009). Infrastructure, investment, cost of capital, and regulation: An assessment. *Oxford Review of Economic Policy*, *25* (3), 307–326. http://www.dieterhelm.co.uk/assets/secure/documents/Oxrep-Infrastructure-Dec09.pdf

IBM. (2020). *What is big data analytics?* Retrieved June 20, 2020, from https://www.ibm.com/za-en/analytics/hadoop/big-data-analytics

Independent Communications Authority of South Africa No 13 of 2000, *Government Gazette* No 37537. Republic of South Africa.

Independent communications Authority of South Africa (2014, August 19). *Briefing Note on Cost Standard to be Used to Determine Cost for Mobile and Fixed Wholesale Voice Call*

Termination [Media Release]. https://www.ellipsis.co.za/wp-content/uploads/2014/06/Briefing-Note-on-Cost-Standards-For-Call-Termination-2.pdf

Independent Communications Authority of South Africa. (2018). *Annual Report 2017/18*. https://www.icasa.org.za/legislation-and-regulations/icasa-annual-report-2017-1

Independent Communications Authority of South Africa .(2018, September 26). ICASA publishes final call termination regulations. https://www.icasa.org.za/news/2018/icasa-to-publish-final-call-termination-regulations

Independent Communications Authority of South Africa. (2019a). *Discussion Document on Mobile Broadband Services Inquiry for Public Comments*. https://www.icasa.org.za/news/2019/discussion-document-on-mobile-broadband-services-inquiry-for-public-comments

Independent Communications Authority of South Africa. (2019b). *Third Report on the state of the ICT sector in South Africa*. file:///Users/STMCedit/Downloads/State-of-ICT-Sector-Report-March-2018.pdf

Independent Communications Authority of South Africa. (2020). *ITA for the Radio Frequency Spectrum Licences for IMT Spectrum* Band. https://www.icasa.org.za/legislation-and-regulations/ita-for-the-radio-frequency-spectrum-licences-for-imt-spectrum-bands

International Risk Governance Council. (2016). *A short introduction to planned adaptive regulation*. https://irgc.org/wp-content/uploads/2018/09/A_short_introdution_to_Planned_Adaptive_Risk_Regulation-19Nov15.pdf

Insights. (n.d). *Learn to Code Qualitative Data*. Retrieved January 10, 2020, from https://getthematic.com/insights/coding-qualitative-data/

Intven, H. (2000). *Telecommunications Regulation Handbook, Module 4*. World Bank.

Breuning, M., & Ishiyama, T. (2011). *Neo-Institutionalism*. https://www.studocu.com/row/document/xiamen-university/chinese-economy/neoinstitutionalism-social-science-britannica/7143359

Jackson, J., & Kollman, K. (2012). Modelling, measuring, and distinguishing path dependence, outcome dependence, and outcome independence. *Political Analysis*, *20* (2), 157–174. https://ideas.repec.org/a/cup/polals/v20y2012i02p157-174_01.html

Jackson, M. (2020). *How we understand "complexity" makes a difference: Lessons from critical systems thinking and the Covid-19* P*andemic in the UK*. https://www.researchgate.net/publication/342412458_Critical_Systems_Practice_and_Covid-19_in_the_UK_Diagnosing_a_lack_of_resilience_in_the_health_system/link/5ef3415ca6fdcceb7b1f46b6/download

Jamison, M. (2011). *Rate of Return: Regulation. Public Utility Research Center*. http://warrington.ufl.edu/centers/purc/purcdocs/papers/0528_jamison_rate_of_return.pdf

Jarvis, D. (2012). *The Regulatory State in Developing Countries: Can it Exist and do we Want it? The Case of the Indonesian Power Sector.* http://www.darryljarvis.com/uploads/2/2/6/9/22690064/jarvis-jca-the_regulatory_state_in_developing_countries.pdf

Johnston, E. (2015). *Governance in the Information Era*. Routledge.

Josselson, R. (2013). *Interviewing for Qualitative Inquiry: A relational approach*. The Guilford Press.

Judicial Commission into State Capture .(2022). *South African Airways and its Associated Companies.* https://www.statecapture.org.za/site/files/announcements/638/Judicial_Commission_of_Inquiry_into_State_Capture_Report:_Part_1_Vol._1:_SAA_(18_MB).pdf

Kahn, A. (1988). *The Economics of Regulation: Principles and Institutions.* The MIT Press.

Kemp, A., Nunn,O., Chow, M., & Gainger, S. (2014) . *Economic Concepts for Pricing Electricity Network Services: A Report for the Australian Energy Market Commission*. https://www.aemc.gov.au/sites/default/files/content/f2475394-d9f6-497d-b5f0-8d59dabf5e1c/NERA-Economic-Consulting-%E2%80%93-Network-pricing-report.PDF

Kessides, I. (2004). *Reforming Infrastructure: Privatisation, Regulation and Competition.* https://openknowledge.worldbank.org/bitstream/handle/10986/13525/289850PAPER0reforming0infrastructure.pdf?sequence=1&isAllowed=y

Kickert, W., Klijn, E., & Koppenjan, J. (1997). *Managing Complex Networks*. Sage.

King, N., Horrocks, C., & Brooks, J., (2011). *Interviews in Qualitative Research*. (2nd edn.). Sage.

Kirkpatrick, C., & Parker, D. (2004). Regulatory Impact Assessment – An overview. *Public Money and Management, 24* (5), 267–70. https://www.tandfonline.com/doi/abs/10.1111/j.1467-9302.2004.00432.x

Klein, P. (2005). *Epistemology. Routledge Encyclopaedia of Philosophy*. https://www.rep.routledge.com/articles/epistemology/v-2

Kliktou, A., Bolwig, S., Hansen, T., & Wessberg, N. (2015). *The role of lock – in mechanisms in transition processes: The case of energy for road transpor*. https://cris.vtt.fi/en/publications/the-role-of-lock-in-mechanisms-in-transition-processes-the-case-o

Leftwich, A. (1994). Bringing Politics Back: Towards a Model of the Developmental State. *The Journal for Development Studies*, 31 (3), 400-427.

Levi-Faur, D. (2013). The Regulatory State and the Developmental State. In N.K. Dubash & B. Morgan (Eds.), *The Rise of the Regulatory State of the South, (*pp. 235-245). Oxfrod University Press.

Liebowitz, S., & Margolis, S. (1995). *Are network externalities a new source of market failure?* https://www.researchgate.net/profile/Stan-Liebowitz/publication/243772780_Are_Network_Externalities_a_New_Source_of_Market_Failure/links/54ae09a10cf2213c5fe41e6d/Are-Network-Externalities-a-New-Source-of-Market-Failure.pdf

Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry*. Sage.

Littlechild, S. (2014). RPI-X, Competition as a rivalrous discovery process, and customer engagement. *Utilities Policy, 31*, 152–61. *https://www.sciencedirect.com/science/article/abs/pii/S0957178714000691*

Lodge, M., & Stirton, L. (2006). Withering in the Heat? In search of the regulatory state in the Commonwealth Caribbean. *Governance, 19* (3), 465–495.

Lodge, M., & Wegrich, K. (2009). High-quality regulation: Its popularity, its tools and its future. *Public Money & Management, 29* (3),145—52. http://eprints.lse.ac.uk/26646/

Lodge, M., & Wegrich, K. (2012). *Managing regulation: Regulatory analysis, politics and policy*. Palgrave Macmillan.

Longo, J., & McNutt, K. (2018). From policy analysis to policy analytics. In *Policy Analysis in Canada*. L. Dobuzinskis, & M. Howlett, (Eds.). Policy Press.

Lubschagne, H. (2020, August 17). *Eskom electricity prices 1994-2020.* https://mybroadband.co.za/news/energy/362660-eskom-electricity-prices-1994-to-2020.html

Mahlalela, G.(2011, July 07). *Statement by Transport Director-General Mr George Mahlalela on the future of economic regulation framework for the aviation sector held at the DOT* [Media Release]. http://www.gov.za/statement-transport-director-general-mr-george-mahlalela-media-briefing-future-economic-regulation

Mahoney, J.(2000). *Path Dependence in Historical Sociology*. https://webarchiv.ethz.ch/soms/teaching/OppFall09/MahoneyPathDependence.pdf

Majone, G. (1994). The Rise of the Regulatory State in Europe. *West European Politics*, 17(2), 77 – 101. https://betteregulation.lumsa.it/sites/default/files/betteregulation/Majone%201994.pdf

Majone, G. (1997). From the Positive State to the Regulatory State: Causes and Consequences of Changes in the Mode of Governance. *Journal of Public Policy*, (17(2), 139 -67. https://www.jstor.org/stable/4007608

Majone, G. (1999). *The Regulatory State and its Legitimacy Problems*. https://www.tandfonline.com/doi/abs/10.1080/01402389908425284

Majone, G. (2007). *The regulatory state and its legitimacy problems.* https://www.tandfonline.com/action/showCitFormats?doi=10.1080%2F01402389908425284

Manuel-Navarrete, D. (n.d.). *Approaches and implications of using Complexity Theory for dealing with Social Systems.* researchgate.net/profile/David_Manuel-Navarrete/publication/242403867_Approaches_and_Implications_of_using_Complexity_Theory_for_dealing_with_Social_Systems/links/5669bc7f08aea0892c49bb3c.pdf

Marais, H. (1998). *South Africa, Limits to Change: The Political Economy of Transition*. Zedbooks.

Maree, K. (Ed.). (2010). *First Steps in Research*. Van Schaik Publishers

Marinescu, C. (2012). *Transaction costs and institution's efficiency. A critical approach*. https://plagiarism.repec.org/marinescu/marinescu2.pdf

Marion, R. (1999). *The Edge of the Organization*. London: Sage

Marrelli, M., & Pignataro, G. (Eds,). (2001). *Public Decision – Making Processes and Asymmetry of Information*. Kluwer Academic Publishers.

Mason, J. (2002). *Qualitative Researching*. Sage.

Mason, P., Augustyn, M., & Seakhoa-King, A. (2009). *Exploratory study in tourism: Designing an initial, qualitative phase of sequenced, mixed methods research, from* https://www.researchgate.net/publication/229921925_Exploratory_Study_in_Tourism_Designing_an_Initial_Qualitative_Phase_of_Sequenced_Mixed_Methods_Research#:~:text=An%20exploratory%20study%20is%20a,et%20al.%2C%202010)%20

Maxwell, J. (2004). *Using qualitative methods for causal explanations*. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.114.7450&rep=rep1&type=pdf

Mazzucato, M. (2015). *The Entrepreneurial State*. Public Affairs.

McGray, L., Oye, K., & Petersen, A. (2010). *Planned Adaptation in risk regulation: An initial survey of US environmental, health, and safety regulation*. https://dspace.mit.edu/handle/1721.1/96045

Mejía, C., Maria, L., del Val, P., Coscollar, D., & del S. Àngels, M. (2020). *The institutional isomorphism in the context of organisational changes in higher education institutions*. tps://eric.ed.gov/?id=EJ1229102

Menken, S,. & Keestra, M. (2016*). An Introduction to Interdisciplinary Research*. Amsterdam University Press.

Merlo, A., (2019). *Political Economy and Political Analysis*. Routledge.

Meyer, J. (2007). *Reflections of Institutional Theories of Organizations*. https://scripts.mit.edu/~cwheat/ess/papers/Meyer_6.pdf

Mfungahema, R. (2011). *Review of the application of the concept of network externalities in the telecommunications/ICT Industry*.https://www.itu.int/ITU-D/finance/work-cost-

tariffs/events/tariff-seminars/Geneva-IIC/pdf/Final%20paper%20on%20NE%20Raynold%20Mfungahema.pdf

Minister of Telecommunications and Postal Services v. The Acting Chair, Independent Communications Authority of South Africa and Others. http://www.saflii.org/za/cases/ZAGPPHC/2016/883.html

Monbiot, G. (2016, April 15). *Neoliberalism- the ideology at the root of all our prob*lems. The Guardian. https://www.theguardian.com/books/2016/apr/15/neoliberalism-ideology-problem-george-monbiot

Morgan, B., & Yeung, K. (2007). *An introduction to law and regulation*. http://www.cambridge.org/za/academic/subjects/law/constitutional-and-administrative-law/introduction-law-and-regulation-text-and-materials?format=PB&isbn=9780521685658

Mouton, J. (1996). *Understanding Social Research*. Van Schaik Publishers.

Mueller, D. (2003). *Public Choice III*. Cambridge: Cambridge University Press.

Mydland, O., Kumbakhar, S., Lien., Amundsveen, R., & Kvile, H. (2020). *Economies of scope and scale in the Norwegian electricity industry*. https://reader.elsevier.com/reader/sd/pii/S0264999319300495?token=38666CF577E25642C39F01BF5BDAAF968C797459E2AE15C012110B5AC57AFB2A1049E5610E2DF795FB82079E71DC8467&originRegion=eu-west-1&originCreation=20210405233014

Narsiah, S. (2002). *Neoliberalism and privatisation in South Africa.* https://link.springer.com/article/10.1023/A:1026022903276

National Energy Regulator Act No. 40 of 2004, *Government Gazette No 27458* (2004). Republic of South Africa. http://www.energy.gov.za/files/policies/National%20Energy%20Regulator%20Act%2040%20of%202004.pdf

National Energy Regulator of South Africa (2013, February 28). NERSA's decision on Eskom's Revenue Application for the Third Multi-Year Price Determination period 2013/14 to 2017/18 [Media Release]. http://www.nersa.org.za/Admin/Document/Editor/file/News%20and%20Publications/Media%

20Releases%20Statements/Media%20Statement%20-%20Announcement%20of%20NERSAs%20decision%20on%20Eskoms%20Revenue%20Application%20for%20the%20MultiYear%20Price%20Determination%20period%202013-14%20to%202018%20(Final).pdf

National Energy Regulator of South Africa. (2018). *Annual Report, 2018/19.* https://www.gov.za/sites/default/files/gcis_document/201911/doe-annual-report-2018-19.pdf

National Planning Commission. (2012). *The National Development Plan*. https://www.gov.za/issues/national-development-plan-2030

National Planning Commission. (2019). *Contributions to SOEs to Vision 2030: Case Studies from Eskom, Transnet and PRASA.* https://www.nationalplanningcommission.org.za/assets/Documents/NPC%20Position%20Paper%20on%20The%20Contribution%20of%20SOEs%20to%20Vision_2030.pdf

National Treasury. (2015). *Mid-Term Budget Policy Statement*. http://www.treasury.gov.za/documents/mtbps/2015/mtbps/speech.pdf

National Treasury. (2020). *Economic transformation, inclusive growth, and competitiveness: Towards an Economic Strategy for South Africa.* https://static.pmg.org.za/190828Economic_Strategy_for_SA.pdf

Ng, C. (2008). *The Developmental State and Economic Development*. https://www.e-ir.info/2008/06/15/the-developmental-state-and-economic-development/

Niklasson, L. (2012). *The Regulatory State vs the Developmental State: The Case of the EU.* http://regulation.upf.edu/exeter-12-papers/Paper%20032%20-%20Niklasson%202012%20-%20Regulatory%20State%20vs%20the%20Developmental%20State.pdf

Organisation for Economic Cooperation and Development. (n.d.). *OECD guiding principles for regulatory quality and performance*. http://www.oecd.org/fr/reformereg/34976533.pdf

Organisation for Economic Cooperation and Development (n.d.). *Regulatory Alternatives*. https://www.oecd.org/gov/regulatory-policy/35260489.pdf

Organisation for Economic Cooperation and Development. (n.d.). *Regulatory Policy*. https://www.oecd.org/gov/regulatory-policy/

Organisation for Economic Cooperation and Development. (1997). *The OECD Report on Regulatory Reform. Synthesis*. http://www.oecd.org/gov/regulatory-policy/2391768.pdf

Organisation for Economic Cooperation and Development. (2000). *Reducing the risk of regulatory failure: Challenges for regulatory compliance*. http://www.oecd.org/gov/regulatory-policy/1910833.pdf

Organisation for Economic Cooperation and Development. (2003). *Price Regulation.* https://stats.oecd.org/glossary/detail.asp?ID=3286

Organisation for Economic Cooperation and Development. (2008). *Regulatory Reform: Efficient markets, effective government*, from http://www.oecd.org/gov/regulatory-policy/42203181.pdf

Organisation for Economic Cooperation and Development. (2010). *Regulatory Policy and the Road to Sustainable Paris: OECD. Growth*. https://www.oecd.org/regreform/policyconference/46270065.pdf

Organisation for Economic Cooperation and Development. (2012). *Executive Summary of Policy Roundtables: Market Definition.* http://www.oecd.org/daf/competition/Marketdefinition2012.pdf

Organisation for Economic Cooperation and Development. (2016a). *Regulatory policy*. http://www.oecd.org/gov/regulatory-policy/

Organisation for Economic Cooperation and Development. (2016b). *Regulatory Policy in Peru: Assembling the framework for regulatory quality.* https://www.oecd.org/publications/regulatory-policy-in-peru-9789264260054-en.htm

Organisation for Economic Cooperation and Development. (2020). *Glossary of Statistical Terms: Oligopoly*. https://stats.oecd.org/glossary/detail.asp?ID=3270#:~:text=OECD%20Statistics,each%20firm%20some%20market%20power

Oxera. (2013). *Agenda: Advancing Economics in Business.* https://www.oxera.com/wp-content/uploads/2018/03/Outcomes-based-regulation.pdf

Parker, D. (2009). *The Official History of Privatisation: The formative Years 1970-1987 (*1st ed). Routledge. https://doi.org/10.4324/9780203881521

Peci, A., & Sobral, F. (2011). *Regulatory Impact Assessment: How Political and Organisational Influence its Diffusion in a Developing Country*. https://www.researchgate.net/publication/229914268_Regulatory_Impact_Assessment_How_Political_and_Organizational_Forces_Influence_Its_Diffusion_in_A_Developing_Country

Peltzman, S. (1989). *The economic theory of regulation after a decade of deregulation*. http://www.brookings.edu/~/media/projects/bpea/1989-micro/1989_bpeamicro_peltzman.pdf

Peters, B., Pierre, J., & King, D. (2005). The politics of path dependency: Political conflict in historical institutionalism. *The Journal of Politics*, *67*(4), 1275–1300. https://www.jstor.org/stable/10.1111/j.1468-2508.2005.00360.x

Pham, L. (2018). *A review of paradigms: Positivism, Interpretivism and Critical Inquiry*. Researchgate.net/publication/324486854_A_Review_of_key_paradigms_positivism_interpretivism_and_critical_inquiry/link/5acffa880f7e9b18965cd52f/download

Pindyck, R., & Rubeinfeld, D. (2018). *Microeconomics (9th ed.).* Pearson.

Minister of Communications and Digital Technologies (2019). *Policy on High Demand Spectrum and Policy Direction on the Licensing of a Wireless Open Access Network. Ministry of Communications and Digital Technologies.* https://www.gov.za/sites/default/files/gcis_document/201912/42597gon1013.

Posner, R. (1974). *Theories of Economic Regulation*. http://pascal.iseg.utl.pt/~carlosfr/ses/Posner.pdf

Prado, M. & Trebilock, M.(2009). *Path dependence, development, and the dynamics of institutional reforms*. https://www.researchgate.net/publication/228128249_Path_Dependence_Development_and_the_Dynamics_of_Institutional_Reform

Prado, M. (2013). Bureaucratic resistance to regulatory reforms: Contrasting experiences in electricity and telecommunications in Brazil. In N. Dubash & B. Morgan (Eds.), *The Rise of the Regulatory State of the South* (pp. 75–92). Oxford University Press.

Promotion of Administrative Justice Act No 3 of 2000, *Government Gazette No 20853* (2001). Republic of South Africa. ttps://www.gov.za/documents/promotion-administrative-justice-

act#:~:text=The%20Promotion%20of%20Administrative%20Justice,of%20South%20Africa%2C%201996%3B%20and

Prosser, T. (2006). Law and the Regulators. *Journal of Law and Society*, *33*(3), 364–387. https://www.jstor.org/stable/3838855

Radaelli, C. & Meuwese, A. (2012). *How the Regulatory State Differs: The Constitutional Dimensions of Rulemaking in the European Union and the United States.* https://pure.uvt.nl/ws/portalfiles/portal/1488359/Radaelli_Meuwese_2012_Rivista_Regulatory_State.pdf

Radaelli, C. (2016). *How contexts matter: Regulatory Quality in the European Union. Paper prepared for the special issue of the Journal of European Public Policy on Policy Convergence.* http://www.osservatorioair.it/wp-content/uploads/2009/08/radaelli_context_matters_.pdf

Radaelli, C., & de Fransesco, F. (2012). Regulatory Impact Assessment, in R. Baldwin, R., M. Cave, & M. Lodge, M (Eds), *Oxford Handbook of Regulation*. Oxford University Press.

Ramaphosa, C. (2019). *State of the Nation Address, 2019*. https://www.gov.za/speeches/2SONA2019#

Ramaphosa, C. (2020). *State of the Nation Address, 2020*. https://www.gov.za/speeches/president-cyril-ramaphosa-2020-state-nation-address-13-feb-2020-0000

Ramaphosa, C.(2021). *State of the Nation Address*. https://www.gov.za/speeches/president-cyril-ramaphosa-2021-state-nation-address-11-feb-2021-0000

Regulating Committee. (2014). *Approach to 2015/16 to 2019/20 permissions*. https://www.greengazette.co.za/notices/airports-company-act-44-1993-the-2015-16-2019-20-permission-for-air-traffic-and-navigation-services-company-regulating-committee-permission-to-levy-air-traffic-service-charges_20141230-GGN-38363-01166.pdf

Renn, O., & Klinke, A. (2010). *Risk Governance: Contemporary and Future Challenges*. https://www.researchgate.net/publication/227036448_Risk_Governance_Contemporary_and_Future_Challenges

Repko, A., Szostak, R., & Buchberger, M. (2017). *Introduction to Interdisciplinary Studies*. Sage.

Public Finance Management Act No 1 of 1999, *Government Gazette No 40637* (1999). Republic of South Africa

Research ICT Africa. (2014). *SA prepaid mobile prices plateau.* http://www.researchictafrica.net/home_archive_reader.php?aid=91

Rickles, D., Hawe, P., & Shiell, A. (2007). A simple guide to chaos and complexity. *Journal of Epidemiology & Community Health*, *61*(11), 933–937. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2465602/

Rodrigo, D. (2005). *Regulatory Impact Analysis in OECD Countries: Challenges for Developing Countries*. http://www.businessenvironment.org/dyn/be/docs/77/Session3.1RodrigoDoc.pdf

Saldanha, J. (2016). *The Coding Manual for Qualitative Researchers*. Sage.

Sanni, S. (n.d.). *How to Implement Spectrum Re-farming*. https://www.gsma.com/spectrum/wp-content/uploads/2017/11/10-Day-2-Session-3-How-to-Implement-Spectrum-Refarming-Shola-Sanni.pdf

SAS (2020). *Advanced Analytics*. https://www.sas.com/en_za/solutions/analytics.html?gclid=CjwKCAiAt9z-BRBCEiwA_bWv-HGqmomm1ovrlgdrXtF3sOMyyc3DXGCx09SmLKYXcLbuSrh45RFO2BoCS0YQAvD_BwE

Sauerland, D. (2015). *Ideology, institutions, and the new institutionalism*. https://www.sciencedirect.com/science/article/pii/B9780080970868631094?via%3Dihub

SBP Consortium. (2005). *Investigation of the possibility of Regulatory Impact Analysis in South Africa, first draft prepared for the Presidency and the National Treasury, 28 February*. http://www.thepresidency.gov.za/MediaLib/Downloads/Home/Publications/RegulatoryImpactAssessment/Background/Investigation%20of%20the%20Possibilities%20for%20Regulatory%20Impact%20Analysis%20in%20South%20Africa%20Phase%201%20Report%2028%20February%202005.pdf

Schmidt, V. (2009). *Reconciling ideas and institutions through discursive institutionalism*. https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199736430.001.0001/acprof-9780199736430-chapter-3

Schmidt, V. (2017). *Theorising Ideas and Discourse in Political Science: Intersubjectivity, Neo-Institutionalism and Power of Ideas*. http://blogs.bu.edu/vschmidt/files/2018/09/Schmidt-DI-reply-to-Larsson-Critical-Review.pdf

School for Oriental and African Studies. (2020). *Political Economy of Public Policy*. https://www.soas.ac.uk/cedep/ipa/file109754.pdf

Scott, C. (2004). *Regulation in the Age of Governance: The Rise of the Post- Regulatory State*. https://researchrepository.ucd.ie/bitstream/10197/6779/2/RiseOfPostRegState.pdf

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in Education and the Social Sciences* (3rd ed). Teachers College Press.

Seidman, I. (2019). *Interviewing as qualitative research: A guide for researchers in Education and the Social Sciences* (5th ed.). Teachers College Press.

Serebrisky, T. (2003). *Market Power: Airports.* https://openknowledge.worldbank.org/bitstream/handle/10986/11304/264010PAPER0VP0no10259.pdf?sequence=1

Serrat, O. (2013). *A Guide to Political Economy Analysis*. https://www.academia.edu/11285321/A_Guide_to_Political_Economy_Analysis

Seyfriend, M & Klenk (2016). *Institutional Isomorphism and Quality Management: Comparing Hospitals and Universities.* https://www.researchgate.net/publication/290439317_Institutional_Isomorphism_and_Quality_Management_Comparing_Hospitals_and_Universities

Shand, W. (2015). *Exploring institutional change: The contribution of co-production to shaping institutions.* pubs.iied.org

Shapiro, S., & Borie-Holtz, D. (2013). *The Politics of Regulatory Reform*. Routledge.

Sheard, J. (2018). *Quantitative Data Analysis*. https://www.researchgate.net/publication/323516675_Quantitative_data_analysis

Shenton, A. (2004). *Strategies for ensuring trustworthiness in qualitative research projects.* http://www.crec.co.uk/docs/Trustworthypaper.pdf

Shleifer, A. (2005). Understanding Regulation. *European Financial Management, 11*(4), 439–451. http://scholar.harvard.edu/shleifer/files/02_eufm00121.pdf

Sinkovics, N. (2018). *Pattern matching in qualitative analysis*. https://www.researchgate.net/publication/323856200_Pattern_matching_in_qualitative_analysis

South African Communist Party. (1998). *Conference Declaration.* http://www.b.org.za/12th_congress/resolutions.pdf

Steuart, I .(2005). *Liberalisation of Trade in Services in South Africa: A Multilateral Dimension*. Retrieved June 10, 2019, from https://www.gtac.gov.za/Researchdocs/Liberalisation%20Trade%20in%20Services%20in%20South%20Africa%20%20The%20Multilateral%20Dimension.pdf

Steyn, G. (2012). *The impact of economic regulation on the management and performance of South.* http://www.nersa.org.za/SAERC/Documents/SAERC/Grove%20Steyn.pdf

Steyn, G. (n.d.). *Administered prices: A report for National Treasury*. http://www.treasury.gov.za/publications/other/epir/Electricity.pdf

Stigler, G. (1971). The Theory of Economic Regulation. *The Bell Journal of Economics and Management Science*, *2*(1), 3-21. https://www.jstor.org/stable/3003160?seq=1

Storer, D., & Teljeur, E. (n.d). *Administered prices: Executive Report*. .http://www.treasury.gov.za/publications/other/epir/summary%20of%20sector%20reports.pdf

Stork, C. (2012, November 6). *Telecommunications cost concepts and cost allocation* [PowerPoint Presentation]. https://researchictafrica.net/PGCICTPR/PGCICTPR/Module_5_files/Module%205%20Costing.pdf

Stubbs, R. (2011). *The East Asian Developmental State and the Great Recession: Evolving Contesting Coalitions*. https://www.tandfonline.com/doi/abs/10.1080/13569775.2011.565983

Stubbs, R. (2017). *The Origins of East Asia's Developmental State and the Pressures for Change*. https://www.cambridge.org/core/books/abs/asia-after-the-developmental-state/origins-of-east-asias-developmental-states-and-the-pressures-for-change/72EE2513A3E9D4142748EC3EE2C4DC78

Sydow, J., Windeler, A., Muller-Seitz., & Lange, K. (2012). *Path Constitution Analysis: A Methodology for Understanding Path Dependence and Path Creation*. https://www.econstor.eu/bitstream/10419/103713/1/3504.pdf

Telecommunications Act No 3 of 1996, *Government Gazette No. 17581*. Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/201409/act103of1996s.pdf

Telecommunications Amendment Act No 64 of 2001, *Government Gazette No 22889* (2001). Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/201409/a64-010.pdf

Terblanche, S. (2018). *The co-option of the African National Congress: The original state capture*. https://www.sahistory.org.za/article/co-optation-african-national-congress-south-africas-original-state-capture-sampie

The Economist. (2012, January 21). The visible hand, Special Report: State Capitalism. https://www.economist.com/special-report/2012/01/21/the-visible-hand

The Presidency Republic of South Africa. (2006). *Accelerated and Shared Growth Initiative-South Africa (ASGISA)*. http://www.thepresidency.gov.za/electronicreport/downloads/volume_4/business_case_viability/BC1_Research_Material/asgisa.pdf

The Presidency. (2012). *Guidelines for the Implementation of the Regulatory Impact Analysis/Assessment (RIA) process in South Africa*. http://www.thepresidency.gov.za/MediaLib/Downloads/Home/Publications/RegulatoryImpactAssessment/Guidelines2/Regulatory%20Impact%20Assessment%20Guideline%20February%202012.pdf

Tlhakudi, K. (2019). Report of the Accounting Officer. *Department of Public Enterprise Annual Report 2018/19*. https://dpe.gov.za/dpe-annual-report-2018-2019/

Trade and Industrial Policy Strategies. (2014). *Economic Regulation*. www.tips.org.za/programme/economic-regulation

Trochim, W.(2006). *Qualitative Validity*. https://www.researchgate.net/publication/261773507_Qualitative_Validity#:~:text=According%20to%20Trochim%20(2006)%20%2C,(objectivity).%20...https://www.researchgate.net/publication/261773507_Qualitative_Validity

Tsoukias, A, Montibeller, G, Lucertin, G & Belton, V. (2013). Policy *Analysis and Policy Analytics.* https://strathprints.strath.ac.uk/58997/1/Tsoukias_etal_2014_Policy_analytics_an_agenda_for_research.pdf

Twala, C., & Kompi, B. (2019*). The Congress of South African Trade Unions (COSATU) and Tripartite Alliance: A Marriage of (In) convenience*. http://scholar.ufs.ac.za:8080/bitstream/handle/11660/3187/contemp_v37_n1_a10.pdf?sequence=1&isAllowed=y

Ukwandu, D. (2019). South Africa as a Developmental State: Is it a viable idea? *African Journal of Public Affairs*, 11(2), 41–52. https://journals.co.za/docserver/fulltext/ajpa_v11_n2_a4.pdf

United Kingdom National School of Government International. (2017). *The Beginner's Guide to Political Economy Analysis (PEA).* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766478/The_Beginner_s_Guide_to_PEA.pdf

United States Agency for International Development. (2011). *Regulatory Impact Assessment: Manual for Regulations with Potential Impact on Agriculture*. https://pdf.usaid.gov/pdf_docs/PA00KZK5.pdf

United States Department of Justice. (n.d.). *Hirschman-Herfindahl Index.* https://www.justice.gov/atr/herfindahl-hirschman-index

Ureana, R. (2013). Global Water Governance and the Rise of the Constitutional Regulatory State in Colombia. In N. Dubash & B. Morgan (Eds.), *The Rise of the Regulatory State of the South (*pp. 27–52). Oxford University Press.

Van Basten, C. (2007). *Economic regulation of SA's public utilities*. http://www.tips.org.za/files/Economic_Regulation_Concept_Paper.pdf

Van Wyk, B. (n.d.). *Research Design and Methods Part II*. https://docplayer.net/9525104-Research-design-and-methods-part-ii-dr-brian-van-wyk-post-graduate-enrolment-and-throughput.html

Viavi Solutions. (n.d). *Spectrum Refarming.* Retrieved February 18, 2020, from https://www.viavisolutions.com/en-us/literature/spectrum-refarming-benefits-challenges-and-solutions-white-papers-books-en.pdf

Vodacom .(2018). *Vodacom's written submission to ICASA's Draft Radio Frequency Spectrum Migration Plan.* https://www.icasa.org.za/uploads/files/Vodacom-submission-on-Draft-RF-Migration-Plan-2018.pdf

Vrasidas, C. (2000). *Constructivism versus Objectivism: Implications for interaction, course design and evaluation are distance education*. https://vrasidas.com/wp-content/uploads/2007/07/continuum.pdf

Warfield, J. (2002). *Understanding complexity: Thought and behaviour*. https://www.jnwarfield.com/00777.html

Warwick University. (n.d.). *Interdisciplinary Research*. https://warwick.ac.uk/research/priorities/

Welch, D & Waddington, R. (2005). *Introducing Regulatory Impact Analysis: The Case for Uganda.* http://www.businessenvironment.org/dyn/be/docs/80/Session3.4WaddingtonDoc.pdf

Whaites, L. (2017). *The beginners' Guide to Political Economy Analysis (PEA)*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766478/The_Beginner_s_Guide_to_PEA.pdf

Williamson, J. (2004). *The Washington Consensus as a Policy Prescription for Development*. https://piie.com/publications/papers/williamson0204.pdf

Wolak, A. (2008). Public utility pricing and finance, in S. Durlauf, S. & L.Blume (Eds.), *The New Palgrave Dictionary of Economics (*pp. 1-4). Palgrave Macmillan

World Bank. (2016). *Accountability in governance*. http://siteresources.worldbank.org/PUBLICSECTORANDGOVERNANCE/Resources/AccountabilityGovernance.pdf

World Bank. (n.d). *Risk and Opportunity: Managing Risk for Development.* https://olc.worldbank.org/content/risk-and-opportunity-managing-risk-development-0

World Trade Organisation. (1997). *South Africa: Schedule of Specific Commitments*. https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=10361,29477,20075,10347&CurrentCatalogueIdIndex=1&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=True&HasSpanishRecord=True

World Trade Organisation. (2013). *The General Agreement in Trade in Services.* https://www.wto.org/english/tratop_e/serv_e/gsintre.pdf

Yelland, C. (2010, November 23). *An electricity distribution industry: Government goes back to the drawing board* .Daily Maverick. https://www.dailymaverick.co.za/article/2010-11-23-sa-electricity-distribution-industry-government-goes-back-to-the-drawing-board/

Yeung, K. (2010). The Regulatory State. In R. Baldwin, M. Cave, & M. Lodge (Eds.), *The Oxford Handbook of Regulation* (pp. 64-83). Oxford University Press

Yin, R. (2014). *Case Study Research: Design and Methods*. Sage