



A critical analysis of the contribution of private investment to economic growth and development in South Africa

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DECLARATION

I, Oladele Musili Folasade, declare that the thesis titled “A critical analysis of *the contribution of private investment to economic growth and development in South Africa*” that I am presenting to North-West University for the degree of Doctor of Philosophy in Economics has not been submitted to any other university in any form. I also confirm that it is my own work in design and implementation, and that all relevant references have been properly recognized.

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DEDICATION

Mrs Hephzibah Tililade Adepate Akinyemi, my cherished and lovely mother, is honoured in this work with her care and devotion.

ABSTRACT

Despite several studies on the significance of investment in Africa, there is still a dearth of studies on the impact of private investment on economic growth in South Africa as a country. This is the vacuum that this research fills in order to provide policy-makers with advice on how to improve private investment's contribution to growth in South Africa. As a result, the first part of the research focuses on the role of private investment in South Africa's economic growth. It also attempts to assess the factors that influenced private investment in South Africa's economic growth from 1975 to 2019, which include public investment, private consumption, trade openness, inflation rate, exchange rate, and domestic credit to the private sector.

The Cob-Douglas model framework was used in the research. To estimate the model, Vector Error Correction Model (VECM), Johansen co-integration, and OLS regression techniques were used to estimate the model. The study also demonstrated the importance of private investment in South Africa's economic growth. The South African Reserve Bank (SARB) and World Development Indicators (WDI) provided data for this study. The investigations' findings revealed a long-run equilibrium relationship between all macroeconomic variables. The study established that private consumption, exchange rate, inflation rate, and trade openness were the only positive statistically significant variables in the long run. However, all the variables, inclusive of private investment and public investment, exhibited long-run joint positive statistical significance with respect to GDP. The impulse response results revealed that all the variables responded positively to shock.

However, the analysis found that a period lag of GDP stimulated GDP in the current period. In addition, domestic credit to the private sector generated a negative impact on GDP in the long run, which contradicts expectations because the availability of credit is supposed to increase investment

levels as well as improve investors' behaviour. Therefore, policy-makers should ensure the improvement of credit availability to investors in the South African economy as well as enhance investors' confidence. Moreover, it is necessary to emphasize the possible future policy framework and the need to improve the investment climate. There is a need for structural reform programmes to be designed by policy-makers to encourage exports and reduce imports. Moreover, policy-makers must stimulate economic partnership for proper productivity. In addition, private investment can be improved through the maintenance of macroeconomic and fiscal stability measures, which constitute a significant precondition for the success of any policy related to domestic private investment. In addition, public investment should be seen as an avenue for complementing private investment because private investment would contribute more to GDP than foreign investment.

Key words: GDP per capita, private investment, public investment, inflation, private consumption.

LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Definition
ADB	African Development Bank
ADF	Augmented Dickey Fuller
AEO	Authorised Economic Operator
AFCFTA	Africa Continental Free Trade Area
AIC	Akaike Information Criterion
ANC	African National Congress
ANOVA	Analysis of Variance
ARDL	Autoregressive Distributed Lag
ARIMA	Autoregressive Integrated Moving Average
ARMA	Autoregressive Moving Average
ASEAN	Association of South-East Asian Nations
ASGISA	Accelerated and Shared Growth Initiative South Africa
BCI	Business Confidence Index
BEER	Bureau for Economic Research
CDP	Construction and Development Programme
CIA	Central Intelligence Agency
CPI	Consumer Price Index
CUSUM	Cumulative Sum of Residuals
DBSA	Development Bank of Southern Africa
DCPS	Domestic Credit to Private Sector
DF	Dickey- Fuller
DFIs	Development Finance Institutions
DTIC	Defence Technical Information Center
EU	European Union
ERRP	Economic Reconstruction and Recovery Plan
FDI	Foreign Direct Investment
FPE	Final Prediction Error

GCI	Global Competitiveness Index
GDE	Gross Domestic Expenditure
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution
HQ	Hannan-Quinn Criterion
HSRC	Human Science Research Council
IADGs	Internationally Agreed Development Goals
ICA	Investment Climate Assessment
ICSA	Investment Climate South Africa
ICT	Information and Communication Technology
IDA	International Development Association
IDA	Industrial Development Association
IDC	Industrial Development Corporation
IFC	International Finance Corporation
IISD	International Institute for Sustainable Development.
IMC	Inter-Ministerial Committee
IMF	International Monetary Fund
IP	Investment Promotion
IPAP	Industrial Policy Action Plan
IPAs	Investment promotion Agencies
IRF	Impulse Response Function
LAB	Labour
LGS	Loan Guarantee Scheme
MDGs	Millennium Development Goals
MPR	Monetary Policy Review
MTBPS	Medium-Term Budget Policy Statement
NDP	National Development Plan
NEDLAC	National Economic Development and Labour Council
NGP	New Growth Path
NPC	National Planning Commission

NSTF	National Science and Technology Forum
NT	National Treasury
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PDC	Public Debt Commissioners
PDI	Private Domestic Investment
PIC	Public Investment Corporation
RDP	Reconstruction and Development Programme
RMB	Rand Merchant Bank
RSA	Republic of South Africa
SADC	Southern African Development Community
SAIC	State Administration for Industry and Commerce
SAIIA	South African Institute of International Affairs
SAMI	South African Market Insights
SARB	South Africa Reserve Bank
SC	Schwarz
SDGs	Sustainable Development Goals
SDIP	Sustainable Development Investment Partnership
SMEs	Small and Medium Size Enterprises
SOEs	State Owned Enterprises
SONA	State of the Nation Address
SSA	Statistics South Africa
TERS	Temporary Employer-Employees Relief Scheme
TISA	Trade and Investment South Africa
TR	Trade
UIF	Unemployment Insurance Fund
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organisation
US	United States
VAR	Vector Auto Regression

VECM	Vector Error Correction Model
WEF	World Economic Forum
WEFGC	World Economic Forum's Global Competitiveness
WI	World Investment
WIR	World Investment Report

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Chapter One

Introduction and Background

1.1 Introduction.

South Africa is a middle-income country with enormous natural resources, a robust financial system, and a legal environment with strong courts and respect for the rule of law, coupled with a solid transportation infrastructure. It is Africa's second largest economy in terms of GDP, while Nigeria is Africa's first largest economy and hosts the continent's largest stock exchange market (SARB, 2016). As a country, South Africa faces the triple challenges of poverty, unemployment, and inequality that are among the highest in the world (AEO, 2018). Its unemployment rate has been consistently around 27% for the last two decades, and its attempts at reversing some of the socio-economic challenges of the apartheid era have been marred in recent years by allegations of rampant corruption and state capture. This has seriously hampered investor confidence and dampened the outlook for the future of the economy (AEO, 2018). The South African economy has remained stagnant for the past decade, and this can be attributed to the dearth of private investment in the nation. According to Suzman (2018), private investment is down by about 20 percent, compared to the level it was at before the global financial crisis of 2008. The country therefore has a need to increase its current levels of private investment, as a greater level of private investment is expected to lead to an improved GDP and development. The growth and development strategy of developing countries like South Africa ought to pay keen attention to

investment because domestic private investment remains the only principal source of capital formation in an economy (UNCTAD, 2011). Private investment in South Africa seems to be correlated with business confidence and changes in gross business profits, as shown in figure 1.1 below.

Figure 1.1 Private Investment Business Confidence



Source: BER, SARB (Shaded areas represent economic downswings)

As graphically displayed above, the level of private investment has been uneven since around 1998, reflecting the global financial crisis, and took a particular deep dive in 2009 and 2010, which were the early years of the Jacob Zuma Presidency. There is thus evidence from the above graph that seems to suggest that perceptions of high political risks adversely affect business confidence, which leads to lower levels of investment in the economy. Political uncertainty is often a problem that reduces the contribution of private investment. The problem with political uncertainty is that it leads to the postponement of investment decisions due to uncertainty about future economic policy (Bleaney, 1994). Despite the country's being a beneficiary of private investment, little

research has been conducted showing the relationship between private investment and economic growth in South Africa (Hussain, 2017).

As far back as 2012, South Africa witnessed a deterioration in global prices for four vital export commodities, including platinum, iron ore, and gold. This decrease partly contributed to a slowdown in economic growth and was further complicated by domestic structural weaknesses and further accentuated by the country's dependence on commodities. Following this trend, growth fell to 0.3% in 2016 after reaching 3.3% in 2011. In 2016, growth in output from the country's sectors, which include manufacturing, dropped to 0.7% from 3% in 2011. The public debt increased to an estimated 54.2% of GDP, from 50.7% in 2016, while industries accounted for 19% of GDP, of which manufacturing contributed 12% compared with 73% for services (SARB, 2016).

In his State of the Nation Address of February 2018, President Cyril Ramaphosa made the attraction of more investment to South Africa an important part of his administration's economic policy. He promised to make a major push from 2018 to encourage significant new investment into the economy through the organization of a series of investment conferences that would target both domestic and international investors to market the compelling investment opportunities that are available in South Africa. This new impetus given to the question of investment was not only intended to address the country's triple challenge of poverty, unemployment, and inequality, but was also intended to address certain structural constraints evident within the South African economy (SAG, 2018).

The president made the case for the need to address the decline over many years in the country's manufacturing capacity, which has deeply affected employment and exports, and the need to seek to re-industrialise on a scale and at a pace that draws millions of job seekers into the economy. To this end, he promised to promote greater investment in key manufacturing sectors through the strategic use of incentives and other measures as part of a shared belief in the fact that investment is a key component of the country's efforts to grow the economy, create jobs, empower small businesses, and provide services to the people (SAG, 2018).

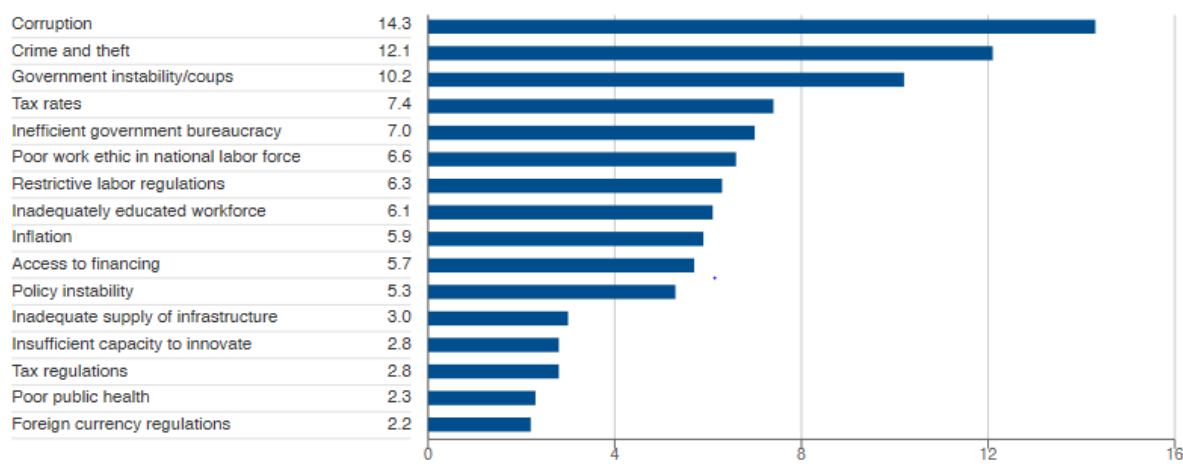
Two years following this initial emphasis on investments, and in his opening address at the third South Africa Investment Conference, held at the Sandton Convention Centre in Johannesburg, the president reported back to the nation on some of the achievements that had been realized since April 2018, when he announced the ambitious target of attracting R1.2 trillion of investment over five years. In this regard, he reported that local and international investors had made commitments to invest approximately R664 billion, and it was his hope that the R664 billion would translate into new factories, production lines, mining operations, retail outlets, and infrastructure, as well as new jobs, new skills, and new opportunities (AIC, 2020).

These benefits of investments outlined by the president are some of the typical advantages that accrue to countries that succeed in attracting the right investment to their shores, mobilized from either the domestic investment market or the international markets. As can be expected, each country's success at attracting investment is dependent upon the characteristics of its investment climate and business environment, including the competitiveness of its economy when compared against other competitive investment environments (AIC, 2020).

South Africa has certain advantages that make it an attractive investment destination on the African continent, including the fact that it has a relatively large market size and a highly competitive financial market with a well-regulated banking industry. It, however, also faces certain challenges that are significant hindrances to the economy's competitiveness. According to the 2019

According to the Global Competitiveness Report, the ability of the government to maintain security, increase the skills of the workforce, and reduce bureaucracy and administrative burdens within the market are factors that affect the competitiveness of the South African economy (WEF, 2019). Besides these factors, there are other elements such as corruption, general crime levels, and political instability that all contribute to making the investment climate and business environment in South Africa difficult. (See figure 1.2 below). These challenges need to be addressed over the long term as part of South Africa's comprehensive efforts to attract and retain investment in its economy, both internationally in the form of foreign direct investment (FDI) and through the mobilization of domestic investment (WEF, 2019).

Figure 1.2: Most problematic factors when doing business within the South African market.



Source: WEF (2017).

According to Figure 1.2, there are many important factors to be taken into account in developing a suitable investment-friendly environment in South Africa. Some of the most salient elements include the tax rates and government bureaucracy that speak to capacity within government, as well as certain labour market challenges such as restrictive labour regulations, an inadequately educated labour force, and a poor work ethic in the national labour force. These structural and systemic issues suggest that a drive to attract investment through investment promotion alone without working on these factors that make the investment climate in South Africa uncompetitive may not produce the desired results. As much as South Africa, like every other economy, needs investments to boost economic growth, create jobs and address the challenges of unemployment, poverty and inequality, its success at attaining these developmental objectives would have to come from pursuing aggressive investment attraction and promotion. This is what the current administration has undertaken to do in the last couple of years, while at the same time addressing the systemic weaknesses that make the country uncompetitive as an investment destination.

Although this may be a difficult balance to achieve, the country has to keep active in its drive to secure more investment because it is an important component of resource mobilization for development. Investment is said to be one of the essential elements of total demand as well as a prominent basis of economic growth. An increase in investment enhances both total demand and the industrious ability of an economy. The expansion of production depends on the investment of a country (Maryam and Nazima, 2012). As Levine and Benelt (1992) affirmed, the best functioning way of determining economic growth is by investing in capital. Increasing physical capital, either

directly or indirectly, boosts economic growth through gross domestic investment in a country (Maryam and Nazima, 2012).

Investment can thus be grouped as one of the dynamic fundamental factors in the economic performance of a country. Saheem and Zaheer (2018) compared investment as an opportunity to use capital to advance economic development in South Africa. Investment stands as a source of production in producing other goods and services. Private investment is a tool for increasing economic activity in order to create more sources of production for goods and services that can stimulate economic growth in South Africa (Ozoh et al., 2016). It is also common knowledge that the faster-growing economies of the world, both the newly industrialized Asian economies (NIEs) and the developed economies of North America and Western Europe, often demonstrate a good track record of attracting and mobilizing both domestic and foreign investments. For most countries that grow swiftly, it is often found that they derive a significant part of their GDP from investments, while other countries that experience slow growth are often also associated with low levels of investments. This suggests that investment stands as a vibrant constituent of economic growth (Sial, Hashmi, and Anwar, 2010).

In this regard, public investment is also generally an instrument of expansion and the attainment of other development objectives like job creation through, for example, expanded public works projects. In this regard, both physical and capital investments undertaken by the government can complement the actions of private investors to increase the overall contribution of investments to growth and development in an economy. This growth through public and private investment is what would lead to improvements in people's standard of living and the benefits associated with an overall increase in aggregate economic activity for a country over a predefined period. By

increasing investments as well as encouraging the effective and efficient utilization of the country's available resources, the total welfare and well-being of the country's citizens can be enhanced through the utilization of more resources, especially labor and capital, which should lead to an increase in total output (Bakare, 2011).

Abiola and Egbuwalo (2010) argue in this regard that economic growth is the power of a country to enlarge its creation opportunity curve greater than its starting operative level. This is the kind of economic growth that also enhances a nation's aptitude to make economic goods available to its citizens continuously and to ensure that their consumption needs are met. This, of course, is quite often mitigated by the rate of investments made within the economy and the growth rate of the population when compared with the availability and utilization of current resources. This, in turn, is also affected by the nature of the investment climate and business environment in which the country is operating. Therefore, for investments to effectively contribute to growth and development in South Africa, it will require a combination of good private, public, and foreign investments feeding into the production and resource utilization processes in the country to produce an effective and ever-increasing flow of goods and services in the standard Keynesian economic sense (Abiola and Egbuwalo, 2010). As can be expected, the success of this process would not only depend on investment attraction but also on a suitable enabling environment through eliminating the constraints of the investment climate and business environment while addressing the structural constraints that relate to the productive capacity within the economy (especially skills shortages and labour market rigidity issues). This together provides the comprehensive picture within which this study proceeds to conduct a critical analysis of the contribution of private investment to economic growth and development in South Africa. It sets out to ascertain what has been the extent of private investment in public and foreign investment

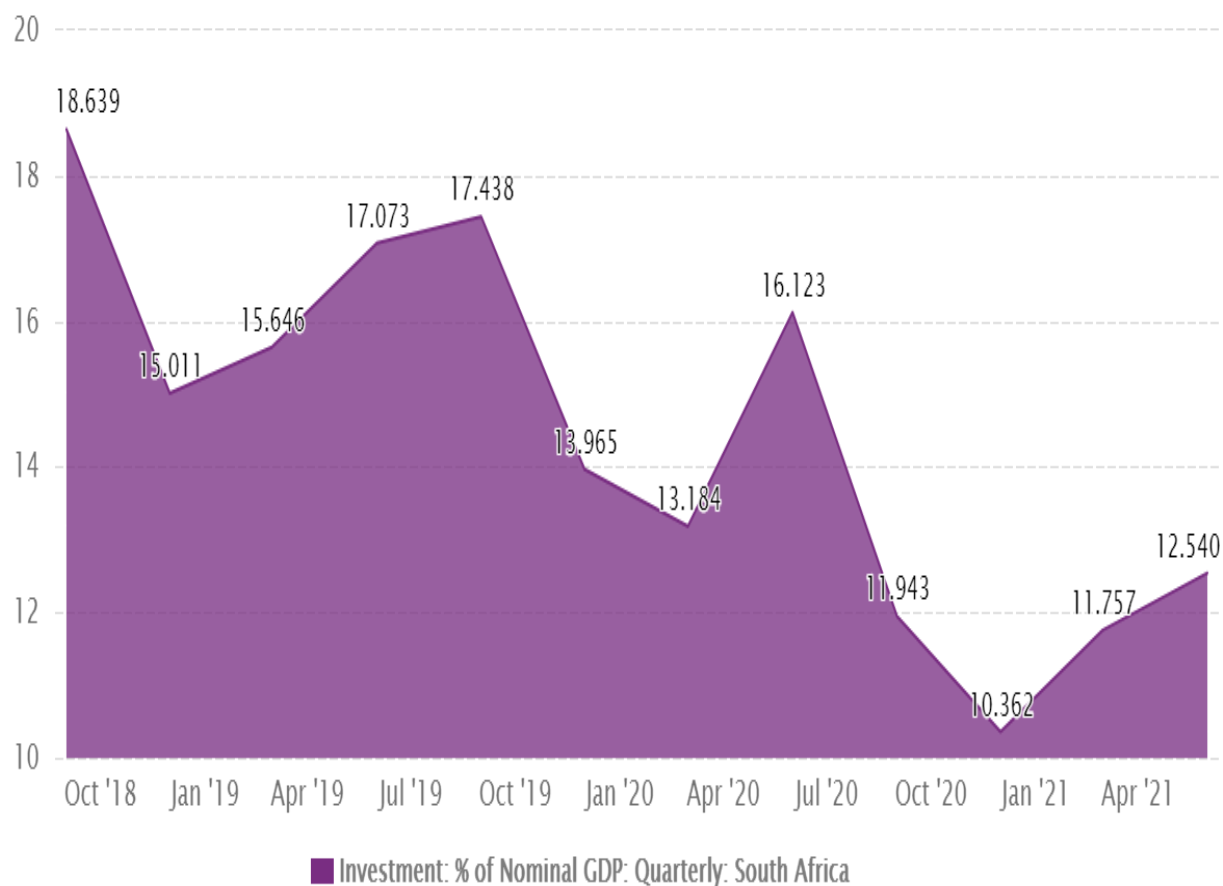
and goes further to ascertain the effectiveness of the investment promotion activities of the post-apartheid South African government and why they have registered only limited success. The study concludes by exploring some pertinent policy considerations for the attraction of suitable investment to South Africa and ensuring that this attracted investment effectively contributes to promoting both economic growth and development in the country.

1.2 Problem Statement

South Africa has experienced a prolonged period of economic weakness because of some of its domestic constraints, such as high unemployment, poverty, and inequality. Its lower levels of private investment when compared to comparative middle-income economies have contributed to slower economic growth than desired (Economic Overview, 2018). Given its developed banking and financial systems and the Johannesburg Stock Exchange, South Africa has all it takes to be a top investment destination but is currently attracting or generating less than its comparative share of domestic private investments. The country is supposed to be a prime location to attract private investment and a prominent domicile for investment. However, many problems are hindering private investment from flowing into South Africa and contributing to economic growth in the country (World Bank, 2011). To compound the above-mentioned challenges with the level of private investment, South Africa as a country generally has low saving rates when compared with comparative middle-income countries. The incidence of high domestic debt and low savings rates, when coupled with low levels of private investment, is a recipe for disaster for an economy that needs to urgently increase the levels of its growth to improve the living standards of the majority of its population (World Bank, 2011). If left unattended, the low levels of investment will continue to hamper the growth of the economy, further postponing the attainment of its developmental

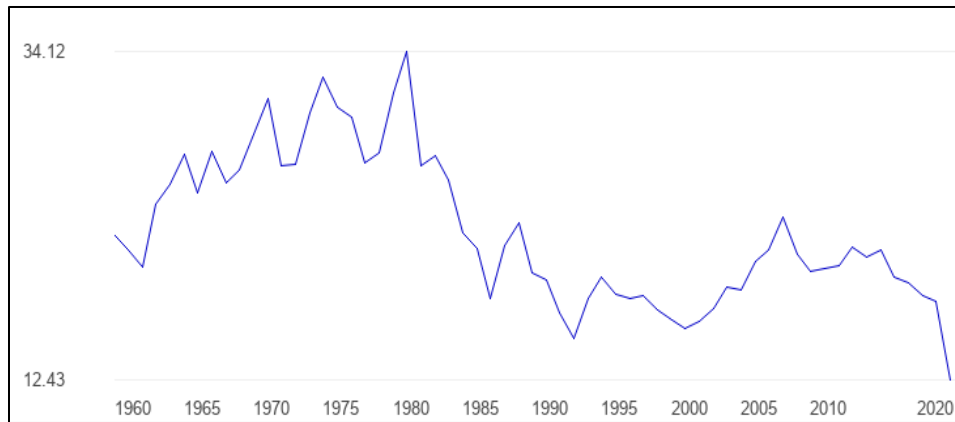
objectives. South Africa must, therefore, identify and address the causes of lower-than-expected economic investment to boost private investment's contribution to the country's economic growth and development.

Figure 1.3 Investment: % of Nominal GDP: Quarterly South Africa.



SOURCE: WWW.CEICDATA.COM | CEIC Data

Figure 1.4 South Africa's Capital Investment, as a percent of GDP - data



Source: The GlobalEconomy.com

In June 2021, South Africa's investment accounted for 12.5 percent of its nominal GDP, up from 11.8 percent the previous quarter. In South Africa and other nations, capital investment is defined as enterprises' acquisitions of new plant and equipment expressed as a percentage of GDP. A high number is beneficial to long-term economic growth since present investment leads to increased future output.

1.3 Research Questions

The following are the research questions that this study seeks to answer:

1. What has been the influence of private investment on South Africa's economic growth from 1975 to 2019?
2. What are the determinant factors for private investment to successfully contribute to the economic growth and development of South Africa?
3. What are the relationship between private investment and economic growth?

1.4 Objectives of the Study.

The objective of this study is to conduct a critical analysis of the contribution of private investment to economic growth in South Africa. To accomplish this objective, the study looks at the role of private investment in South Africa's economic performance over the past 45 years (1975–2019) and makes policy recommendations on how to boost the contribution of private investment to the country's growth and economic development. The study's secondary objective is to look into the elements that drove private investment's growth in South Africa during this time period in order to see if policies aimed at boosting private investment have been successful in sustaining the long-run growth rate.

The explicit objectives of the study comprise:

1.4.1 Primary Objectives

The Primary Objectives of this Study are to:

1. To determine the contribution of private investment to the growth of GDP per capita in South Africa for the period 1975- 2019
2. To analyse and discuss the main determinants of private investment in South Africa. .
3. To analyse the relationship between private investment and economic growth in South African.

1.5 Methodology

The primary objective of this study is to ascertain the contribution of private investment to economic growth in South Africa for the period 1975–2019. Secondary data will be used in the study to run time series regression analysis. The data used for the study comes from the Reserve Bank of South Africa and the World Development Indicators. The study makes use of the EViews 11 econometrics software to conduct statistical analysis on time series data using variables that proxy growth and investment, as guided by the relevant literature.

1.6 The Contribution of the Study

South Africa is an underdeveloped country where the country is facing a budget deficit and there is a slow economic growth prospect, but it is considered to be a place to concentrate a high level of private investment. However, to eradicate these problems, South Africa as a nation needs to focus its attention on investment, such as private investment, to increase inclusive growth. Private investment will enhance job creation and improve the standard of living for the citizens of the country.

Therefore, the fundamental objective of this study is to analyse the role that private investment plays in the development of South African economies. Additional objectives for this study are to extract the determinants of private investment for the improvement of South Africa's economic development so as to determine the efficient participation of private investment in South Africa. This study will apply some innovative techniques and data to examine the investment growth relationship in the context of South Africa. Its contribution is to examine previous efforts to attract

investment in South Africa in order to determine what has worked and what has not worked in the past in South Africa's unique environment, and why.

Most of the studies that have been carried out in South Africa are usually based on the comparison between private and public investment; others focus on the importance of public investment to the development of South Africa, while some empirical studies examine the importance of foreign direct investment in South Africa. However, this study, although it touched on all these areas, most importantly, it focused on the contribution of private investment to economic growth and the factors that contributed to the increase in private investment.

Moreover, the theoretical framework adopted for this study is applied to the operationalization of the variables in this study. The theories that were employed in this study explain the importance of investment to the economic growth of South Africa and beyond. This study also identified the importance of FDI and its significance to the economy of the country.

The study was based on the importance of the appropriate policy that can be implemented to stimulate private investment in South Africa. The results of this study will enable policy-makers and other parastatals to make considerable decisions that will re-establish the importance of private investment in South Africa. While the plan for public investment through 2030 has been announced by the government, there is a need to be motivated on how much of a plan the government has for private investment. As Jongwanich (2007) declared, private investment had the smallest speed of adjustment when compared with other macroeconomic variables, and at the same time, according to Stampini et al. (2013), private investment serves as one of the greatest determinants of poverty reduction as well as job creation.

Furthermore, as a result of the current and ongoing initiatives to attract investment by the administration of President Cyril Ramaphosa, the study makes relevant policy recommendations that aim at providing guidance on what lessons to learn from South Africa's past investment contribution to economic growth in order not to make the same mistakes moving forward. This study is, therefore, an innovative empirical contribution with policy application and relevance.

1.7 Chapter Outline

This study contains six chapters which comprehensively discuss specific subject areas:

Chapter 1:

This chapter describes the study's introduction, problem description, goals and objectives, research questions, research methodology, and significance of the study.

Chapter 2

This chapter presents a literature review on private investment and economic growth in South Africa. The chapter is divided into various sections. The first section gives an introduction to the conceptual framework of private investment. Section two elaborates on investment in economic growth theories, which explain the model used for the study. The third section explains the determinants of investment. The fourth section elaborates on the review of the empirical literature. The fifth section is based on the summary of empirical studies on private investment and growth, both in developed and developing countries. Also in this chapter, emphasis is placed on the empirical studies on the determinants of FDI, which leads to the conclusion of the chapter.

Chapter 3

Chapter three focuses on the overview of the economic situation in South Africa's growth. It explains South Africa's investment climate and business environment. The chapter also elaborates on investment promotion initiatives in South Africa. In addition, the chapter expatiates on South Africa's comparative performance in public, private, and foreign investment. Lastly, there is the conclusion.

Chapter 4

It presents the research methodology and empirical framework of the study. It explains the design and samples used for the study. The chapter explains how variables are operationalized and also sources of data. It elaborates on the methods of analysis; the model specification and various methods are explained. The chapter goes further to explain the definition of each variable used in the study. The chapter analyses the model requirements and model diagnostics and lastly gives the conclusion of the chapter.

Chapter 5

The chapter presents the results with discussions. Tests for endogeneity and stationarity are presented, along with the graphical presentation of data. The presentation of empirical results and analysis such as ADF, Phillips-Perron unit root, testing for co-integration, VAR Lag Order Selection Criteria, VECM, regression analysis, stability test, normality test, heteroskedasticity test, Ramsey reset test, and impulse response function are all presented in this chapter with the conclusion.

Chapter 6

This chapter explains the conclusion of the whole thesis. It is structured into different sections. The introduction is followed by a discussion of the results, the study's contribution, a summary of the chapters, the study's limitations, policy implications and recommendations, and finally, the conclusion.

1.8 Conclusion

This chapter provided the background of South Africa's economic performance and the problem facing the country in attaining economic growth, which is because of the low contribution of private investment to economic development. The level of South Africa's saving rate and high domestic debts is another challenge facing the country. The chapter elaborated on the research questions that the study sought to answer in line with the study. In addition, the chapter enumerated the main objective of the study, which is to determine the contribution of private investment to the economic growth of South Africa. The methodology to be used for the study was mentioned, as were the techniques to be employed for the research. The contribution of the study, which serves as the main reason for the study, was elaborated in detail in this chapter. And in conclusion, the chapter organization of the study was disclosed.

Chapter 2

Review of the Literature

2.1 Introduction

The contribution of private investment both to a country's GDP and its capacity to allocate and employ resources efficiently cannot be over-emphasized. The ability of a country to spend and engage its assets resourcefully and productively determines its economic success and expansion. Obviously, economic growth cannot be attained without investment. Therefore, investment is regarded as an important component of sustainable economic growth and development. In this regard, private investment is important to an economy because it stimulates production in the Keynesian production framework sense, and, by proxy, the utilization of resources and their associated rewards, and breeds dynamism in every economic structure. This is when investment takes the form of gross capital formation or gross fixed capital formation and is consequently considered an important component of the growth in the gross domestic product of a country.

There have been frequent calls for the role of private investment, especially since the 1970s. Following the structural adjustment programs of the International Monetary Fund and the World Bank, the majority of countries have turned to private investment as an alternative to development strategies to boost economic growth. As a result, the state's role in policy formation and infrastructure investments such as roads, communication, and energy that are vital because they provide positive externalities for private investment is restricted. It is therefore of utmost importance for the participation of private investment in the growth of the economy (Mustefa, 2014).

The objective of this chapter is to review the empirical and theoretical literature on investment and economic growth. Accordingly, the chapter is divided into 5 subsections. After the introduction, section 2.1 reviews the concept of investment within the economic growth literature, while section 2.3 briefly reviews the literature on determinants of investment. Section 2.4 presents a review of some empirical studies on the investment and growth relationship, while Section 2.5 summarises and concludes the chapter.

2.2 Investment in Economic Growth Theories.

Classical and neoclassical economic theories suggest that economic growth is determined exogenously. The founders of the neoclassical theory postulate that capital is a fundamental element that drives economic growth, thus distinguishing it from an array of economic growth theories (Makaula, 2014). Moreover, the endogenous growth theory asserts that internal forces determine economic growth rather than exogenous factors. In this regard, the Solow growth model that was developed by Robert Solow and Trevor Swan (1956) is generally accepted as the basic reference for the role of savings and investment in the literature on economic growth. The Solow model explains long-term economic growth by taking into consideration inputs such as technology, labour, and capital. It argues that the accumulation of physical capital is significant for short-run economic growth, whereas technological advancement is vital for long-run economic growth. According to Solow and Swan, the rate of technological advancement, the savings rate, and the rate at which the population grows are the three factors that determine the economic growth of any economy. Solow and Swan developed a model where physical capital and labor are determinants

of long-run economic growth; it is based on the neoclassical aggregate production function and is illustrated in the equation below.

$$Y(t) = f[A(t), K(t), L(t)]$$

Where:

Y: is total output at a given time

A: is the level of productivity or technology

K: is the capital input

L: is the labour input

T: is the time period

The neoclassical aggregate production function used in the Solow model is characterized by constant returns to scale and diminishing marginal returns to capital and labor. When the production function indicates that there are constant returns to scale, the total output per capita is dependent on the capital stock of the workers. Therefore, a proportional increase in production inputs leads to a proportional increase in the aggregate level of output. However, when there are returns to scale, the relationship between labour and capital stock for production is similar to the level of labour and capital stock within the economy. An addition to one of the factors of production will result in decreasing returns on the total output. Therefore, the aggregate production function exhibits diminishing marginal returns.

The Solow model can be expressed in the form of the Cobb-Douglas production function as indicated below:

$$Y_t = k t^\alpha (A_t L_t)^{1-\alpha} \quad 0 < \alpha < 1$$

Where:

α : is the capital share.

$1 - \alpha$: is the labour share.

$A_t L_t$: is the labour productivity.

Based on the Solow model, capital accumulation plays a pivotal role in the economy's growth. The change in capital stocks results in a change in aggregate income and can be illustrated by the equation below:

$$\dot{K} = s(k) - (n + g + \delta)k$$

Where

$s(k)$: is proportion of income saved and invested.

k : Capital.

δ : is the depreciation rate.

g : is the level of technological change.

n : is the population growth rate.

From the equation above, it is evident that capital is positively correlated to the rate of investment and negatively correlated with the level of technological change, population growth rate, and depreciation. Because of diminishing marginal returns to capital and labour, the economy will reach a steady state position whereby an increase in capital does not result in economic growth.

The process by which economies grow past a steady state is exogenous and represents technological innovation. Solow asserted that positive technological change that is more than zero results in an increase in each worker's output (Mutambirwa, 2016). Karabona and Koutung (2013) supported this view and stated that technological innovation enables greater production and that production can occur with fewer resources.

Looking specifically at the role of savings in capital formation and growth, the Harrod-Domar model allocates an express role for savings in steady economic growth. According to their theory, capital accumulation contributes greatly to the achievement of economic growth in an economy. They believe that capital accumulation does not only engender income, but also increases the capacity of production in the economy. For example, in a situation where a construction plant is established, this will create income for the supplies of various materials used, such as cement, bricks, steel, and machinery, which will increase capital simultaneously with production capacity in the economy.

The reason for this is that capital accumulation generates income, which in turn generates demand for products and services. Furthermore, according to the Harrod-Domar hypothesis, freshly created revenue as a result of demand is a powerful tool for achieving economic expansion. This will be sufficient for the output produced by the new investment to be fully absorbed because, if the output fails to be fully absorbed, there will be excess or idle production capacity.

The model of Harrod and Domar (1967) believes that more investment in the economy leads to more growth. According to Harrod and Domar's theory, for a country to grow, it must protect and spend a portion of its GDP on the realization of capital formation. The model emphasizes the role of savings and investment as critical components of growth, particularly in emerging countries.

Their model quantitatively illustrates how growth is directly related to savings and indirectly linked to the capital-output ratio. According to this model, economic growth can be computed using the following basic model: if national income is Y , growth is G , the capital-output ratio is K , savings is S , investment is I , the average savings ratio is s , and the incremental capital-output ratio is k .

$$S = sY \quad (2.1)$$

Saving (s) proportion of (s) of

National income (Y)

$$I = \Delta k \quad (2.2)$$

Net investment (I) defines a change in capital stock K .

$$G = \Delta Y \quad (2.3)$$

ΔY , which is growth, is explain as a change in national income. Therefore, because total stock, K , has a direct relationship with total national income, or output Y , as shown by the capital/output ratio k , it follows:

$$K \frac{k}{y} \quad (2.4)$$

Or

$$K \frac{\Delta k}{\Delta y}$$

Or finally

$$\Delta K = K \Delta Y$$

As a result, the equation can be expressed as follows: As entire national saving must be an equivalent of overall investment, the equation can be expressed as follows:

$$S = I \quad (2.5)$$

However, from equation (2.1) above $S = sY$ and from equations (2.2) and (2.3)

$$I = \Delta K = k \Delta Y$$

The identity of savings equaling investment, as proved by equation (2.1), can be expressed as:

$$S = sY = k \Delta Y = \Delta K \quad (2.6)$$

Or simply as

$$sY = k \Delta Y \quad (2.7)$$

$$\Delta Y = G = sYK \quad (2.8)$$

As a result, the growth model Y/Y , which stands for the rate of change of national income or rate of GDP was derived by dividing both sides of equation 2.7 by Y and then by K .

The classic type of the Harrod – Domar equation in economic growth theory, (Equation 2.8) explains that the rate of GDP growth ($\Delta Y/Y$) is equally determined by the national savings ratio, s , and the national capital/output ratio, k .

As such, these classical economic theories provide the theoretical framework for the association between investment and economic growth. Thirlwall (2006) argues that classical economists encompassed all development economists who have written about the elements that influence a country's success. According to Adam Smith and David Ricardo, the procedure of economic growth was a dominant feature of classical economists, and this turned out to be a defining characteristic of the classical school of thought (Engel, 2010). With respect to the relationship between investment and economic growth, Solow (1956) and other pioneering economists made the assumption/argument that economic growth was dependent upon three probable causes: rising capital stock, changes in the population that influenced labour, and mechanical competence related to questions of productivity and technical progress. Labor resources and capital assets are therefore essential, although the source of growth is knowledge and what will be later qualified as human capital.

This study utilizes the classical economic theory model of growth that utilizes domestic investment in a Cobb–Douglas type production function to determine the contribution of investment to economic growth. Harrod–Domar and Neo-Classical growth theories both identified the investment rate as a predictor of economic growth. According to these classical theories, the foundations of growth are capital, labor, and technology. Their predictions can be illustrated by the use of the Cobb-Douglas Production framework as follows:

$$Y = AK^{\alpha} L^{1-\alpha} \quad (2.9)$$

Where α is the claimant share of capital and $(1 - \alpha)$ is the share of labour.

This can be re-written as:

$$\frac{\delta y}{y} - \frac{\delta A}{A} + \alpha \delta K \frac{1}{K} (1-\alpha) \frac{\delta L}{L} \quad (2.10)$$

However, this means that the rate of growth in GDP can be determined mathematically by the amount of growth in A, K, and L. This means that the rate of change in investment is equivalent to the rate of change in capital stock. In addition, the equation can be expressed as follows:

$$\frac{\delta y}{y} = \frac{\delta A}{A} + \alpha 1 + \frac{(1-\alpha)}{y} \frac{\delta L}{L} (4) \quad (2.11)$$

That is to say that $\frac{\delta A}{A}$ the remaining component of the fundamental equation is replicated, so the equation now becomes;

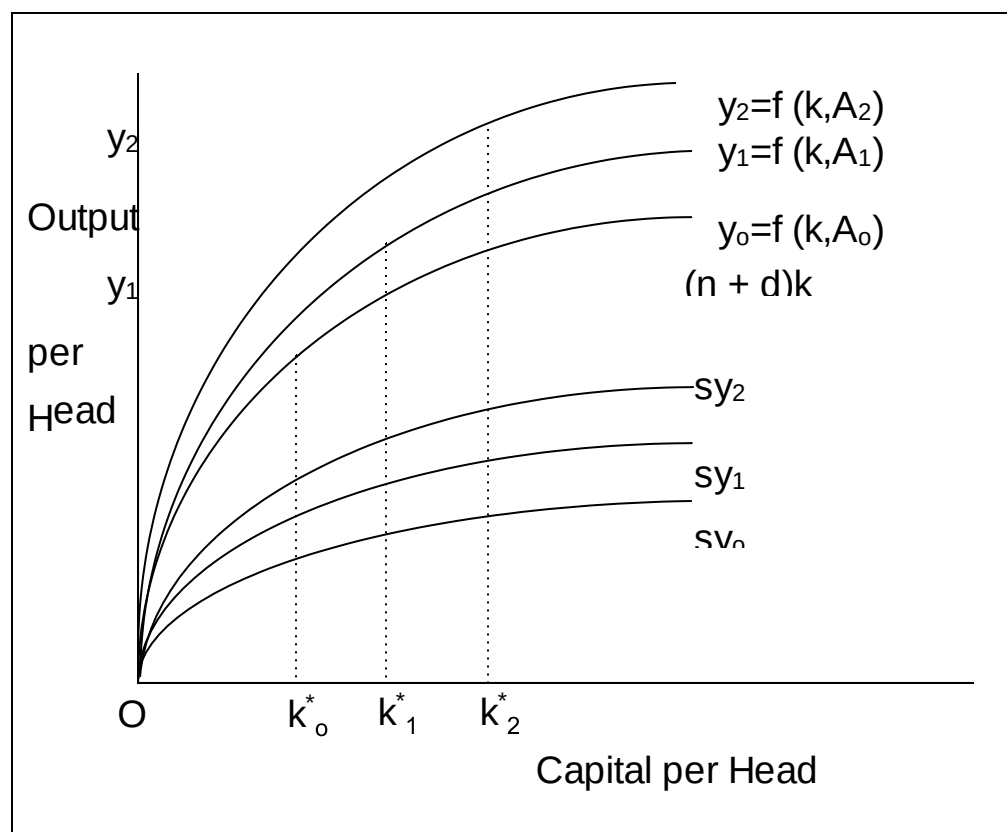
$$\text{GDP growth} = \frac{\alpha \tau 1}{y} + \alpha 2 L + e \quad (2.12)$$

Where: $\alpha 1$ is the capital value of production, $\alpha 2$ is the allocated cost of production and e is the error term.

According to the neo-classical economic theory, increasing capital or labour in these production frameworks would give rise to diminishing returns, which in turn constrains long-run growth. So, in order for an economy to sustain growth within a neo-classical framework, it needs to increase the rate of capital and labour in the short-run but improve upon its technology to secure long-run growth. There is a need for technological growth to increase the productivity of capital and labor.

According to Fourie et al. (2009), a shift in the production function (which symbolizes economic growth) can thus be caused by an exogenous increase in technology. This, however, implies that the higher the steady state of the economy, the greater the savings curve. As a result, a higher steady state can lead to better per capita output as well as a higher capital-labour ratio. As a result, advances in technology can sometimes sustain output increases over time (Sorensen et al., 2010).

Figure 2.1: Exogenous technological change



Source: Dornbusch et al, (1998)

According to Fourie et al. (2009), there will be an increase in the production function when there is an increase in technology. The savings curve climbs as the country goes to a higher steady-state. An increase in the steady level, on the other hand, generates an increase in per capita output as well as the capital-labor ratio, as shown in Figure 2.1. Consequently, technological advancements over the course of time contribute to a steady rise in output (Sorensen et al., 2010).

According to Acemoglu (2008), an economy expands when savings, investment, labor, and advancing technology increase employee performance. Moreover, the neo-classical theory agrees that technological progress increases labor productivity. However, according to the idea, if a

country's population increases, tradable amount and fabrication purpose are equal, the country's productivity will be equal. This simply means that countries suffering from poverty as a consequence of a lack of resources can save just like wealthy countries and have access to technology, which will eventually lead to breakthroughs. As a result, according to the neo-classical theory, growth is achieved through investment, population, land expansion, and productivity (Domar, 1946).

The criticism of this theory, however, is that it does not explain the reason behind countries' having different levels of investment as a percentage of GDP. Furthermore, the theory fails to explain why, due to structural issues such as corruption and a lack of infrastructure, emerging countries do not attract higher levels of investment (Nitisha, 2019). More so, the theory does not explain how countries can improve their level of technological progress. Not only that, the theory regards technology as a constant factor, which is not true. It is a fact that technology keeps advancing with time. Another limitation of the neo-classical theory is that it considers factor prices the only way to determine growth. However, this can simply be interrupted with a change in liquidity. Moreover, the neo-classical theory failed to describe and explain the expectations of entrepreneurs as well as the capital accumulated through them. This means that it neglects the investment functions. In addition, the neo-classical theory considers capital assets as homogeneous, which is actually not true (Nitisha, 2019).

There are some assumptions adopted by the economists of neo-classical theory which are:

- Perfect competition in commodity and at factor market.
- Factor payments should be equal to the marginal revenue productivity.
- There should be maintenance in variable ratio between capital and output.

- There should be a complete assumption of full employment.

The assumptions of the Harrod-Domar model and the neo-classical theory are compared in the table below:

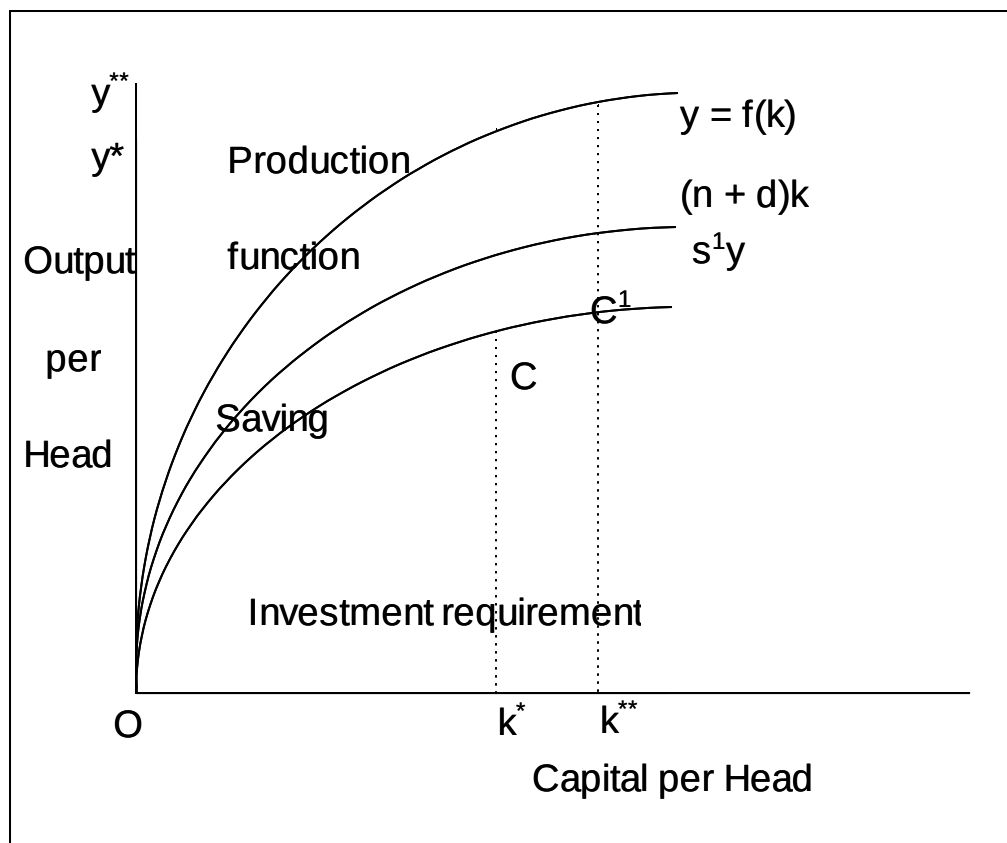
Table 2.1 The Assumption of Neo-classical and Harrod-Domar Theory

Assumptions of Neo-Classical Theory	Assumptions of Harrod-Domar Model
In Neo-Classical theory, the production function contains more than one variables such as – capital, labour, and technology.	In the Harrod-Domar model, the production function only comprises one variable, which is capital.
Both labour and capital are considered as substitutes.	The labour and capital stand as a perfect supplement of each other.
Both capital/output ratio is presumed to be variable.	The capital/output ratio is expected to be constant.

What does this theory have to offer South Africa? To begin with, according to Dornbush (1998), an increase in the savings rate enhances the extended-term size of assets and productivity per person. Furthermore, as the population expands, the stable-position level of total productivity progression drops. Finally, when technology improves, the steady-state trend toward higher per capita output occurs. For a long time, neo-classical growth theory dominated economics, but it ignored the intricacies of technological advancement. However, by altering the production function, the endogenous growth theory was devised to explain both the theoretical and empirical issues associated with the neo-classical theory. This hypothesis, on the other hand, explains how

human capital research and development contribute to long-term growth (Dornbush, 1998). As a result, "fundamental economic aspects should be incorporated into macroeconomic policies to ensure sustainable economic growth in South Africa," according to the report (Mellet, 2012).

Figure 2.2: Savings Increase



Source: Dornbusch et al (1998)

The influence of savings and how it affects growth is shown in Figure 2.2. The neo-classical model, as seen above, illustrates how an increase in savings increases the growth rate. Though it has little effect on long-term growth, it does raise the long-term level of capital and production per person.

The New Economic Growth Theories (the Endogenous Growth Model) were developed by Paul Romer and Robert Lucas, and the theory places more emphasis on the concept of human capital. The first endogenous growth models where human capital is endogenous and the growth rate may continue to increase were constructed by Romer (1986), Lucas (1988) and Rebelo (1991). This, however, is generated from the assumption that returns on investment in this broader capital element do not necessarily display diminishing marginal returns. This non-convexity therefore gave endogenous models an advantage over their neoclassical counterparts. Although the problem of neoclassical convexity was restored through endogenous theories of human capital, the theory explains how technological advancement can be achieved through workers' knowledge, education, and training. The theory, however, stresses the need for a government to encourage technological innovation.

Endogenous growth theories, on the other hand, contradict Keynesian and neoclassical theories in that they emphasize human capital investment as a required component of manufacture. According to endogenous growth theory, human resource development is critical for economic growth and development. This means that the endogenous mechanism encompasses both the improvement of human productivity ability and the help of human labor, which will help to increase economic growth. However, this endogenous work can be observed in the work of Romer (1986), Lucas (1988), and Mankiw, Romer, and Weil (1992). For example, Romer (1986) thinks that technological developments are endogenous and that private investment enhances the economy's degree of technology. The reason for this is that positive externalities arising from private investment result in a production function that exhibits an increasing return to scale. In addition, an increase in private investment enhances growth in a steady state (Ozoh et al., 2016).

Nevertheless, both neoclassical and endogenous models are deprived of foreseeing incessant long-run progress in the former and merging in the latter. The development of a new growth model to address the downfall in each model was the contribution of Mankiw, Romer, and Weil (1992) and also the ideal of Barro and Sala-i-Martin (1995). The result of these efforts, therefore, was the new growth theory, which models technological dissemination (Barro and Sala-i-Martin, 1997).

The model therefore places emphasis on enhancing both capital and labor productivity. Even though an increase in labor productivity has no diminishing returns, there may be increasing returns. Though Solow predicts that increasing capital will lead to diminishing returns, the theory argues that increasing capital will not necessarily lead to diminishing returns as this is more complicated as it depends on the type of capital invested.

According to Dornbusch et al. (2014), endogenous growth theory is different to neoclassical theory in that it believes that only two new factors could assist in achieving sustainable economic growth. Neoclassical theory believes that growth can only be achieved through technological advancement, but it fails to explain the factors that determine the achievement of technological advancement, whereas endogenous theory expands the determinants to achieve economic growth through technology. Moreover, the endogenous theory is based on a constant return to scale for factors of production to be accumulated (Dornbusch et al., 2014).

Moreover, according to Shell (1966), technological progress depends on the magnitude of resources devoted to inventive activity. He is also of the opinion that the change in technology per unit of time will be positively affected by the resources that are keen on knowledge creation, while knowledge is a focus for devaluation just as old forms of technology face obsolescence (Fedderke). Moreover, the "Shell hypothesis of resource-driven technological change" suggests that the

resources are referred to as investments in physical capital, which generate inadvertent technology spillover. However, the effect of knowledge spillover in the Romer model is to guarantee that the efficacy of labor input at the social level will improve. The consequence of this, however, is that the production function reveals increasing returns to scale at the social level even when the production function remains homogeneous. Therefore, the important difference between the Romer "new" growth model and traditional growth models relates to the nature of the capital stock in the economy. In addition, once social returns to scale in capital are constant, it immediately follows that the marginal product of capital also becomes constant. Therefore, as a consequence, in the Romer model, the incentives to invest do not change along with the rising capital-labor ratio because the marginal product of capital and the profit rate are constant. Therefore, as a consequence, there is no incentive to slow down the economy once it has started to expand. One advantage of the Romer model, however, is that it's accountable for the failure of poor countries to catch up with rich countries. "Since the incentive to invest does not decline with rising per capita capital stock, the growth rate of the capital labor ratio and of per capita output does not change either." Therefore, there is no reason for countries that have a high per capita output to grow slower than countries with a low per capita output because there is no inherent tendency toward catch-up as is present in traditional growth models (Fedderk).

2.3 The Determinants of Investments.

Investment is an important component of economic growth and development and has many determinants. The importance of investment in driving economic growth and development is supported by both the theoretical and empirical literature. As Hashui et al. (2012) rightly put it, investment, especially foreign investment, can be a key element that underpins improvements in

the level of knowledge, the upgrading of machinery, and the growth of capital in certain recipient sectors of an economy. Many studies, notably in South Africa, have been conducted to investigate the origins of private investment. However, an analysis of the drivers or determinants of private investment may be beneficial in providing information useful for policy decisions that would encourage the inflow of investment. It is for this reason that this study focuses on the macroeconomic factors affecting private investment (Batu, 2016).

This section attempts to outline the reasons why private investment thrives, or the determinants of private investment in an economy. In spite of its contribution to boosting economic growth, it has turned out to be performing poorly in driving economic recovery in South Africa. It has rightly been confirmed that private investment is the dominant promoter of modernization, economic progress, and scarcity reduction. More investment is required if South Africa is to reach its Millennium Development Goals (MDGs) and Internationally Agreed Development Goals (IADGs) (Bayai and Nyangara, 2013).

As a result, examining the key contributory features of private investment is crucial. However, based on the literature analysis, the study has identified some of the criteria that influence private investment.

2.3.1 Gross Domestic Product:

One of the most influential elements driving private investment is GDP. Private investment, GDP real, economic growth, and real income all have a positive impact on the increase of private investment. The rise of private investment is aided by GDP. According to Basha and Debela (2015), Jalloh (2002), Kaputo (2011), Quattara (2004), Molapo and Damane (2015), and Mbaye

(2015), GDP/income has a considerable impact on private investment. According to neo-classical investment theory, increases in real GDP have a positive effect on private investment. However, while GDP is a useful indicator of a country's economic performance and the most widely used measure of well-being, it does have some limitations, such as the exclusion of non-market transactions, the failure to account for the degree of income inequality in society, and the inability to indicate whether a country's rate of growth is sustainable.

2.3.2 Public Investment:

Public investment is an additional factor that affects private investment. The role of public investment can be looked at from two perspectives. On the one hand, public investment serves as a complement to private investment in fundamental infrastructure, thereby stimulating private sector expansion and development. Alternatively, public expenditure stands as the competence of the private sector and therefore limits the amount of capital accessible to it (Batu, 2016). Some researchers (Quattara, 2004; Jalloh, 2002; Adugna, 2013; Damane, 2015; Hailu and Debele, 2015) rightly put it that the government's investment spending directly supports private investment.

Several studies, as well as the concepts of "crowding in" and "crowding out," have been conducted on the relationship between private and public investment. In most African countries, the macroeconomic contributing factors to domestic private investment have been found to be positive for both private and public investment. However, the public investment ratio in many countries has fallen, mostly in Mauritius and Morocco (Bayai and Nyangara, 2013).

Giving special attention to the cases of Ghana and Zambia, researchers uncovered results that support the hypothesis of the crowding out-effect. The researchers, on the contrary, believed that

public and private investment are intimately connected. This, however, suggests that the public and private sectors are competing for assets. According to Hatauo (2010) as well as Jongwanich and Kohpaiboon (2008), the consequence of public investment competing above private investment is currently expounded by three theories. Firstly, the crowding-out theory, which is buttressed by classical economists, says that in a phenomenon known as crowding-out, governmental investment appears to stifle private investment. This could be as a result of governmental investment borrowing from domestic appropriation, which has the potential to shift private investment by reducing the number of loans available to private investors.

Furthermore, countries with inadequate physical and financial resources are at a disadvantage. Increased government spending can quickly drown out private investment (Jongwanich and Kohpaiboon, 2008). The second hypothesis is that, as economic mediators expect sophisticated prospective taxes and start investing immediately, public investment will have special effects on private investment. The crowding-in or crowding-out of private investment is determined by complementarities between public and private investment as well as the sort of public investment structure and subsidy sources available (Guma, 2013; Kraay, 2012). Fedderke, Perkins, and Luiz (2006), on the other hand, agree that public investment in core infrastructure can crowd-in private investment through a multiplier effect. Moreover, according to Jongwanich and Kohpaiboon (2008), community investment can crowd out private investment when there are corporal and financial resources, which is an extension of public investment, and in this way, instigate a negative relationship. However, Erden and Holcombe (2005) found that both public and private investment complement each other, both in the end and in the short run.

As a result, while public investment in economic infrastructure has long-term crowding-in consequences on private investment, it has a limited crowding-out effect in South Africa. This explains why public investment can have diverse influences over time on private investment.

2.3.3 Rate of Exchange:

The exchange rate, similar to GDP and government investment, is crucial for private investment growth. The exchange rate certainly contributes to private investment. Furthermore, both Assa and Abdi (2012) and Mbaye (2014) argue that private investment is intrinsically related to the tangible exchange level. They claim that a depreciation in the exchange rate might raise the price of imported assets; in this scenario, a rise in the real exchange rate benefits the private sector. However, Hailu and Debele (2015); Naa-Idar et al. (2012); and Kaputo (2011) found that the exchange rate level is inversely related to private investment in Ethiopia, Ghana, and Zambia. In Sierra Leone, for example, Jalloh (2002) noted that the real exchange rate has a negative impact on private investment.

The exchange rate is among the factors that may affect the investment projections of a country, which stands as a global rate responsible for the attractiveness of a country (Carbaugh, 2000). According to Carbaugh (2000), the exchange rate serves as a financial asset that local investors may want to hold. This means that there are connections between the exchange rate and investment.

Different types of investment may pose the basic causes of the economic growth that initially affected the instabilities in the exchange rate within a country. According to Rajan and Subramanian (2007), high levels of fluctuation in the country's currency need to be avoided for

the economy to acquire and preserve its gross investments. South Africa's economy experimented with several exchange rate regimes, beginning in 1945, before deciding on the present free-moving exchange rate, which is now the country's official exchange rate management (Maepa, 2015). The country was vulnerable to different risks of currency rate instability after switching from a fixed exchange rate system to a flexible exchange rate scheme in 1995. The South African rand, for example, fell by around 5% versus the US dollar in 2014, which can either attract or repel international investment into the country (Magdeline, 2015).

Private investment might be stimulated or delayed depending on the exchange rate (Jangwanich and Kohpoiboon, 2008). Money devaluation actually affects the price of imported capital assets. Many developing countries, including South Africa, are involved in importing investment goods. However, this affects private investment since depreciation depresses non-tradable goods (Jongwanich and Kohpaiboon, 2008). This is contrary to the effect on developed countries since there is no need for imported capital goods.

When a currency appreciates, it will discourage trading and investment because it will increase the cost of money, and when it depreciates, it stimulates exports and investment because it decreases the value of the currency (Mohr and Fourie, 2008).

Theoretically, changes in exchange rates have contradictory effects on investments, but this depends on which area this exchange rate occurs. When the currency is depreciated, it will increase the global competition of a nation's exports, which will, in the long run, improve the country's trade deficit. However, according to Goldberg (2009), the depreciation is because of foreign investors pulling out of the country to reduce or control currency depreciation further.

When there is a fluctuation in exchange rates, it affects investment as well as the economy. When there is a depreciation in the level of money, imports turn out to be somewhat inexpensive, as this is inconsistent with exporting goods and services. Harchaoui et al. (2005) mention that there is evidence that uncertainty in terms of exchange rates can have a damaging consequence on investment. This simply indicates that when an investor discovers hesitation in the enactment and the aptitude of a nation's currency, according to Destiny (2015), such an investor will prefer to move investments to a country that is perceived to be stable and operating a healthy investment environment there.

2.3.4 Inflation and Private Investment

As a determinant of investment, inflation has a significant negative influence on private investment. In both the long-run model and the VECM, the inflation rate co-efficient was negative and significant. This reveals that macroeconomic unpredictability affects private investment adversely. As Rossiter (2002) argues, anticipated increasing inflation boosts the rate of accomplishing and then decreases asset accrual. Contrarily, Ghura and Goodwin (2000) are of the opinion that greater predictability in price increases decreases the actual interest level. However, a decrease in the real interest rate weakens the handling currency, causing real investment to rise (Bayai and Nyangara, 2013). According to the World Bank (1995), the two most important macroeconomic links for decision-makers to make in order to affect a country's investor responsiveness are low inflation and low interest rates, and the suitable valuing of assets, labour, and land to conserve global attractiveness. Investors are bound to be discouraged when there is an increasing inflation level.

2.3.5 Interest rate and Private Investment

The negative association between interest rates and investment has been the subject of argument. It has been noted, however, that the rate of return on investment as it is approached by the literature is a possible determinant of private investment (Bayaia and Nyangara, 2013). In research undertaken in Tanzania from 1960 to 1973, Jorgenson (1963) found a negative relationship between interest rates and private investment. In contrast to the neo-classical approach, Asante (2000) determined that private investment is positively related to the real interest rate, citing Galbis (1979). According to McKinnon (1973), the conduit effect occurs when interest rates rise, boosting commercial savings capacity through monetary intermediaries and so increasing investible capital.

According to the theory of interest rates, there is an opposite relationship between interest rates and investment. The theory explains the limitation of self-financed investments through higher debt service costs when money is tight. Not only that, it also reduces profitability. At a given period in a country, there is always a huge range of interest rates. The interest rate depends on variables such as the nature of loans, the duration of loans, the borrower's credit worthiness, as well as the hire purchase agreements. When the variables are constant, it gives room for an interest rate cut. However, loanable capital theory (neo-classical) as well as liquidity-preference theory (Keynesian theory) are the most common theories used to explain interest rate determinations (Vancouver, 2018).

The macroeconomic economic theory of total expenditure in the economy and its consequences on output, employment, and inflation is known as Keynesian economics. Keynesian economics is a "demand-side" theory that concentrates on short-term changes in the economy. Based on this idea, Keynes pushed for higher government spending and lower taxes to stimulate demand and

pull the world economy out of the downturn, an incentive to pursue, and thereby repair, the economy's imbalances (Barnier, 2020).

Classical economic philosophy, as Keynes coined it, argues that cyclical fluctuations in employment and economic output generate profit possibilities that individuals and entrepreneurs would be motivated to pursue, thereby correcting the economy's imbalances. In his book *The General Theory of Employment, Interest, and Money*, Keynes claimed that during a recession, business pessimism and certain characteristics of market economies would exacerbate economic weakness and cause aggregate demand to plummet even more (Barnier, 2020).

Many academics, including Misati and Nyamongo (2011), have explained the inverse relationship between real interest rates and investment in similar ways. This, however, is consistent with Keynesian and neoclassical models in which the interest rate determines the cost of capital (Agrawal, 2004). According to Schnabel (2010), rising interest rates aid entrepreneurs in recruiting companies that can jerk-up high profitability sooner than less profitable ventures that can be delayed or even abandoned.

On the contrary, Erden and Holcombe (2006) argue that the interest rate level has no statistical significance on the range of private ventures and that credit accessibility has no impact on investors. Brazil's investments, for example, have failed to respond to their concessionary economic policies through the Brazilian Development Bank (BNDES). However, interest rates are not responding positively in South Africa and other developed countries, even with their low levels of interest rates. This, however, reveals that interest rates may not be a constraint to private investment stimulation.

2.3.6 Saving Rate:

In the relevant literature, the role that domestic savings play in domestic investment is a subject of debate. Feldstein and Horioka (1990) argue that there is a solid relationship between domestic rates of saving and investment in a country. This implies that increases in domestic savings can result in greater investment levels in the local market.

Macro-economic balance and the maintenance of financial stability depend on the strong savings performance of a country. It is often argued in any debate on the appropriate economic policies for South Africa that investment and savings stand as instruments to nurture long-term economic growth. According to Prinsloo (2019), increases in the savings rate can provide a permanent increase in output growth. However, it is discovered that in reality, savings depend on the share of domestic income and that investment does not necessarily affect the growth rate indefinitely if it does not go along with changes in the production structure or technological progress that result in technology improvement. However, raising the level of savings and investment will not improve the volume of production per employee, and changing from a lower to a higher level of investment will briefly increase growth. However, it must be noted that the domestic income allocated to savings cannot be steady. The savings rate of the community therefore depends on the decisions of many individual households, who determine a particular portion of their income to be saved and another portion to be consumed (Prinsloo, 2019).

During the 1980s and 1990s, South Africa's gross savings fell, and this has not been fully recovered, especially by households in the country. South Africa's current savings rate is widely considered too low to support a sufficiently high economic growth rate (Perkins, Fedderke, and Luiz 2005). According to the Annual Economic Report of the Reserve Bank in 1994, it was

suggested that aggregate savings need to reach 22% of gross domestic product in order to sustain a development rate in actual incomes of 3% per year.

According to the City Press (2013), there was a criticism of corporate savings in South Africa for not spending as expected in the country, as the gross savings proportion of the GDP increased slightly from 13.8% in the quarter of 2012 to 14.2% during the first quarter of 2013 (SA Reserve Bank, 2013). Domestic savings should not be used to stymie private investment.

In addition, there exists a connection between saving and economic progress, which has recently spawned numerous debates in many developing countries. This debate has been based on whether policy-makers should first pursue higher savings mobilization policies or economic growth, or whether they should pursue both at the same time. It means that, between higher savings policies and higher economic growth, which one leads and which one lags in the process of economic development?

In reference to the savings theory, increasing savings leads to higher investment, which, in the end, leads to increasing economic growth. That is to say, savings play a significant part in the economic advancement of a nation. In other words, when savings increase, this will stimulate economic growth, which, in the end, will further increase the level of savings. However, this will help the economy grow as savings increase, until savings and investment are stabilized (Odhiambo, 2009).

However, many studies have been conducted relating to the importance of savings to economic development, mainly in emerging economies like South Africa. The savings rate has significantly declined since the 1980s, and the current savings rate has been very low. Furthermore, this has had a direct impact on the level of economic widening since the 1980s. For example, between 1979

and 1984, gross domestic savings as a proportion of GDP declined from 26.7% to 16.3%, and between 1990 and 1999, it fell from 26.7% to 16.3%. In addition, the rate further decreased from 31.5% in 1979 to 19.1% in 1995 and thereafter to 15.6% in 1998. Furthermore, in 2003, South Africa's gross local reserves rate as a proportion of GDP was only 18.8% (Plessis and Smit, 2006).

Traditional views support the relationship between savings and economic growth, like those proposed by Solow (1956). All these people also emphasized the importance of savings for economic growth. For example, Solow (1956) argued that an increase in the savings ratio produces an increase in growth at a limited time of growth between stable states (Ozcan, 2000). Romer (1986), in his endogenous growth model, emphasized that an endless increase in growth can only be attainable through an increase in reserves and capital accrual.

2.3.7 Political Risk and Investment

Lee (2004) indicates that one of the determinants of private investment is social-political instability. Political instability is a major element in the continent's private investment degrees. Both political scientists and economists have identified the causes of economic failure in emerging economies, which resulted in a fall in economic growth and that politically-influential upheaval likewise disturbs economic enactment (Bayai and Nyangara, 2013).

Violent and peaceful activities are arguably universal phenomena in the sense that they occur throughout history and across institutional frameworks. "Neither oppressive authoritarian nor liberal democratic governments appear to be immune to political instability." On the other hand, social and political instability that leads to violent or non-violent revolutions can easily lead to an unauthorized change of executive power. Furthermore, Ghate, Le, and Zak (2003) find that

"collective protests" such as general strikes, riots, and anti-government demonstrations "often have a slight beneficial influence on private investment."

2.4 Review of Empirical Literature.

Following the structural adjustment programmes of the 1980s and 1990s, experimental research on the role of private investment in economic growth began to appear in the economic literature. As Khan and Reinhart (1990) point out, private investment appeared to be a lot more productive in comparison with public investment in the 1970s. In other cases, however, public investment appeared to be more productive than private investment.

Although there is a lot of research on private investment and economic growth, it is focused on developing countries. Various scholars have conducted several studies on the relationship between private investment and economic growth. However, the most important goal of this section is to contrast and analyze various research conducted in support of private investment and economic growth. Suhendra and Anwar (2014), for example, piloted research on Indonesian economic growth from 1990 to 2011, and concluded that private investment had a positive and substantial control on growth.

To explain the association between investment and economic growth, Barro (1991) used 98 country samples from 1960 to 1985. He concluded that an increase in GDP per capita, as well as investment growth, had a positive relationship. Political instability and price distortions, on the contrary, have an adverse effect on GDP per capita growth. Barro (1990) also claimed that public expenditure has an indirect effect on private production, which leads to poor investment in a country and, in the long term, stifles the country's ability to reach high levels of economic growth.

Barro (1997) likewise argues that in an open economy, the growth of investing causation is particularly important. The experiment was carried out by reverting to customary contributing factors of growth such as salary, life expectancy, fertility, and other characteristics in the investment ratio. It was discovered that a number of variables that affect growth also act as investment boosters.

After modeling a neoclassical expenditure role for South Africa centered on domestic gross fixed investment, Du Toit and Moolman (2004) concluded that external and domestic financial restrictions play a key role in determining South Africa's gross local static transaction.

Private investment has the slowest rate of change of any macroeconomic variable in South Africa (Jongwanich, 2007), making it one of the most popular and crucial factors in poverty alleviation and job creation (Stampin et al., 2013). Odhiambo (2003) investigated financial development in relation to real GDP per capita and found that demand dominates in South Africa.

According to Reuters (2017), there is historical evidence that investment in South Africa is highly responsive to uncertainty. Fedderke, Perkins, and Luis (2001) employed the VECM method to investigate the long-term impact of infrastructure financing in South Africa. The result shows that infrastructure plays a valuable role both directly and indirectly in the economic growth of South Africa. For example, a rise in infrastructure results in an increase in economic upliftment, even if the economic growth in infrastructure is quite poor.

Odhiambo (2010) investigated the relationship between financial development, investing, and economic growth in South Africa using the ARDL test model, arguing that most articles that employed Engle and Granger or Johansen were unable to obtain appropriate results due to the

limited sample size used. The result showed that investment leads to economic growth and that there is financial development because of investment (Hussin et al., 2013). Savings, according to Odhiambo (2009) and Amusa (2014), is the most crucial instrument for attaining sustainable monetary widening in South Africa.

According to Keynes (1936), investment is a necessary and powerful influence on both the cumulative mandate and short-run variations in economic action. In his opinion, investment is a crucial engine of economic improvement and prosperity. Furthermore, Ozoh (2010) challenges neo-classical economists who believe that technical advancement and innovation are critical in preventing economic stagnation caused by both economic and non-economic factors.

Furthermore, Lucas (1988) argues that investing in human capital has a positive spillover impact that encourages long-term growth. Changes in policies, as well as the buildup of physical and human capital stock, all have an impact on progress. Private investment, according to Grossman and Helpman (1991), causes a change in the link between imported technology and economic growth. Most crucially, expanding the physical stock of capital, whether through the private or public sectors, results in a positive increase in the nation's economy.

Baghebo and Edoumiekumo (2012) used a co-integration and error correction model of data examination to conduct an empirical investigation on local private accretion and economic enlargement in Nigeria. The findings revealed that private investment, public investment, real interest rates, and inflation rates all have a positive impact on real GDP.

Furthermore, the findings of the investigation showed that an increase in the level of macroeconomic constancy and a low rate of inflation are required to achieve the expected benefit

of private investment on growth. As a result, it is clear that the expected and required economic development has a high rate of impetus, as private investment provides appropriate environmental, monetary, and fiscal incentives to thrive.

In a similar vein, Gutierrez (2005) used growth and regression reviews to investigate the roles of investment and other development factors in the economic progress of Latin American countries from 1960 to 2002. The findings revealed that machinery and equipment investments, as well as private investment, were successful in growing per capita gross domestic product. The study also discovered that educational policies contribute to growth, and that the relationship between private investment and growth is a compelling proof of extension because of the impact of FDI and structure on private investment.

Umoh et al. (2012) examined the relationship between foreign direct investment and economic growth in Nigeria from 1970 to 2008. The data demonstrated a bidirectional relationship between FDI and economic growth in Nigeria. To put it another way, FDI's contribution to growth encourages FDI.

Ghura et al. (2017) used the ordinary least square approach to establish that the endogenous growth model includes Ghura's (1997). The aggregate production function shows cumulative returns to scale. The findings reveal that private investment amplification has a big, significant, and beneficial influence on public investment, as well as an amplification of its positive impact on growth. Growth is boosted by economic policies that encourage external competitiveness, which boosts production expansion, physical and human capital, and positive externalities. To top it off, growth is boosted by economic policies that foster external competitiveness.

Contrary to endogenous and classical economists who emphasized investment as the driving force behind economic achievement, Verma (2007) refuted the notion that investment and economic growth have a relationship. This, however, demonstrates that investment does not always imply economic growth. Some reasons may be to blame for the lack of causality connecting investment and economic growth in some countries. For instance, in Nigeria, some factors such as the country's legal regulations, political climate, and institutional sphere may be barriers to the effectiveness of economic growth (Verma, 2007). Therefore, South Africa, as a nation, needs to attain a sound political environment to help it achieve attainable economic growth (Corrigan, 2009).

After combining trade range data and disaggregated figures on 27 manufacturing subdivisions, Ndikumana (2005) conducted an econometric analysis based on neo-classical and Keynesian models to determine the factors of investment during the period 1970–2001 in South Africa. The investment has halted as a result of the findings.

Cheteni (2011) also looked into the role of transportation infrastructure investment and output in South Africa's economic growth. The study examined annual data from 1975 to 2011. The data was estimated from the Word Bank database, the South African Reserve Bank and Quantec. The result of the VECM showed that the economic growth of South Africa was influenced by inflation, the exchange rate, and domestic fixed transport investment. Moreover, the above variables, when using the BVAR model, were indicated as other factors that have dominance in economic development.

Fielding (1998) also looked at manufacturing investment in South Africa from 1960 to 1993. The data from SARB's quarterly reports was used. The researcher employed econometric

methodologies such as unit root and VAR to test stationarity. The results revealed that wage elasticity is negative.

According to Nikuman (2005), who performed research on the importance of private investment in South Africa, local government borrowing may have a detrimental effect on investment. At the same time, this could result in governmental investment displacing private investment.

The ideas of Keynes (1936), Mckinnon (1973), Shaw (1973), Domar-Harrod, and others are used to explain the correlation between investment and economic growth. Their theories emphasize the importance of investment to the expansion of the economy. In their research, Odhiambo (2009) and Amusa (2014) emphasize the importance of savings as a lever for South Africa's economic development.

Du Toit and Moolman (2004) used Johansen's co-integrated technique to access and forecast a model of fixed investment to see if the variable is co-integrated, and concluded that South Africa's gross domestic fixed investment is being weakened because of the hassle of economic exclusions, disinvestment, and the outflow of foreign capital. According to the researcher, investment, according to the neo-classical supply-side model, ought to be steady for the economy of South Africa.

Du Toit and Moolman (2004) investigated the investment function by using the neoclassical resource-side model on the South African financial plan, and the results suggest that enterprises can make profit-maximizing and cost-minimizing decisions. Their findings also illustrate the impact of both internal and external financial restraints on South African investment, which has resulted in international sanctions being imposed on the country over the years.

After doing research on the relationship between private investment and economic advancement in Saudi Arabia from 1974 to 2012, Osman (2014) asserts that private investment and economic growth have a lasting relationship.

According to Bayraktar and Fofack (2007), a private investment function in sub-Saharan Africa can be specified. Using Tobin's Q theory and neo-classical investment theory, the researchers discovered that aggregate profitability shocks play a substantial role in influencing the level of private investment in Africa.

Acosta and Loza (2005) studied the factors that influenced private investment in Argentina from 1970 to 2000. The findings demonstrated that investment decision-making appeared to be consistent. It also suggested that public investment was pushing out private spending. Kenya discovered the impact of finances, GDP growth, and public investment on the behavior of non-public financial specialists (Matwanga, 2007). According to the study, government investment has a considerable impact on private investment. However, the results also showed that output growth has had a minimal impact on investment. Nonetheless, the money-related strategy played a minor role.

According to Naqvi (2003), public and private investment have a positive relationship, resulting in improved economic growth. Furthermore, Naqvi (2003) demonstrated that long-run estimates of both private and governmental investment elasticities fluctuate depending on the assumptions made about technological progress. If technology is measured exogenously, the production and rate of return elasticities of private and public resources are the same.

Ghani and Din (2006) looked at the importance of both public and private investment on growth and discovered that public investment has a detrimental effect on growth, despite the fact that it is minor. On the other hand, there was a positive correlation between private investment and economic expansion. In consonance with the research, public investment has an undesirable influence on private investment, implying that it crowds out private investment, which has raised concerns about the efficiency of public expenditure.

Khan and Khan (2007) investigated the factors that influence Pakistani private investment. Real GDP had a positive, but limited influence on private investment. According to the data, state investment had a negative and insignificant impact on private investment. Furthermore, there was a long-term relationship between private fixed investment, public consumption, and development expenditure. On the contrary, this demonstrated a positive association between public and private investment (Ahmed and Qayyum, 2007).

Erden and Holcombe (2005) concluded that public capital complements private capital after applying pooled specifications of a standard model to a panel of emerging countries from 1980 to 1997. They also applied the same empirical model to a panel of established economies and discovered that public spending crowds out private investment in developed economies. According to certain empirical studies, private investment in developed economies is more influenced by a variety of factors than private investment in developing economies.

According to Swaby (2007), public investment may "crowd out" private investment, resulting in a negative impact on long-term growth. Furthermore, Phetsavong and Ichihashi (2012) argue that private investment might be crowded out when greater government expenditure necessitates higher

future tax and interest rates, as well as when the goods produced by public investment compete directly with private goods.

There are two effects of investment. The first is the request for investment goods, which is a component of the overall economic demand. If demand for investment goods is not met by imports, an increase in demand will boost investment goods production, resulting in significant economic growth and development in the end. Another point is that capital formation increases the economy's production capacity, allowing the economy to produce more output (Epaphra and Massawe, 2016). Furthermore, according to Ipumbu and Kadhikwa (1999), investing in new facilities and technology boosts efficiency by presenting new knowledge, which ultimately boosts economic growth.

Ghura and Goodwin (2000), as well as Ahmad and Qayyum (2008), discovered a positive link between the two investments. Touna, Kamguia, Ouedraogo, and Zeufack (2000) used vector auto-regression (VAR) to examine the basic causes of private investment in certain francophone African countries, and the results demonstrated that private investment can be replaced by public investment.

Pereira (2001) concluded that public investment might be replaced by private investment at the macro level after studying the impact of governmental investment on the development of private investment. The drop in private investment is one of the reasons for "crowding out." The reason for this is that the government has increased its borrowing to fund its infrastructure projects. When the government spends more money or receives less money from taxes, there is a deficit, which can be filled by borrowing more money. Borrowing, on the other hand, raises interest rates, reducing private capital in the long run.

According to Cohen and Paul (2000), private investment can have a major impact on manufacturing costs and output in many countries. This can be accomplished by cutting manufacturing expenses and, as a result, improving the probable ratio of profit. However, this can boost government spending while also having substantial effects on private investment.

According to Agenor, Nabi, and Youself (2005), infrastructure can indirectly influence private investment by having a large effect on the price of domestic consumption goods relative to the price of imported goods, that is, the consumption-based real exchange rate.

In their research on the link between public and private investment, Mlambo and Oshikoya (1999) discovered that fiscal, financial, and monetary policy, as well as macroeconomic uncertainty and trade variables, were major predictors of private investment in Africa. They discovered that fiscal, financial, and monetary policy, as well as macroeconomic uncertainty and employment variables, were major predictors of private investment in Africa between 1970 and 1996, using a sample of 18 African countries. In addition, the study found that administrative solidity is a key factor in determining private investment rates on the continent.

Previous empirical research on the impact of uncertainty on South African investment has focused mostly on the influence of political uncertainty (Wolassa, 2006). According to Bleaney (1994), a study of the impact of political uncertainty on private investment in South Africa prior to 1994 found a negative impact on investment when measured by financial rand discount and real net capital flows. Fielding (2000) discovered a negative impact on investment after examining the influence of political uncertainty on aggregate investment using three metrics of political uncertainty, including political right, political instability, and economic indices.

Political and macroeconomic uncertainty, poor law and order, and lack of political stability to train the labor force, inconsistent macroeconomic policies, macroeconomic imbalances, and insufficient infrastructure are the main factors driving low investment and foreign direct investment growth in South Africa (Sial, Hashmi, and Anwar, 2010).

On the other hand, Everhart and Sumlinski (2001) found that public investment has a neutral influence on private investment after applying methods using panel tools and a proxy to capture the quality of public investment (Gerard and Ngwen, 2014). There are numerous debates over the relevance of private investment. Some scholars, such as Barro and Sala-i-Martin (1995), have suggested that investment measurements are problematic since they contain both private and state expenditures. The researchers linked these measurement issues to their investigations and showed that investment failed to have a substantial positive influence on growth. Furthermore, Barro and Sala-i-Martin (1995) attempted to segregate total investment into public and private investment to determine if they had an impact on growth, but found that the results were not significantly different from using the aggregate investment variable.

Sala-i-Martin (1997) discovered that public investment is negatively related to growth, while private investment is irrelevant and non-robust after collecting 63 variables from the growth literature, including investment. He tested these variables in sets of three and discovered that public investment is negatively related to growth, while private investment is irrelevant and non-robust. In addition, this was without the investment rate showing in any of the regressions and with the investment rate as a fixed variable, using the Extreme Bounds approach.

Ibrahim (2000) conducted a study on the variables of the long-run total of private zones in Ghana, and the results demonstrated that private investment and the elements are linked. The results also demonstrated that the adjustment strategies were in control of aggregate demand.

The impact of capital formation on Nigeria's growth was investigated by Ainabor et al. (2014). The study used data from 1960 to 2010. The Harrod-Domar model was used to examine the influence and relationship of capital formation in Nigeria. The results revealed that capital formation and the savings ratio are both closely related to the rate of national income growth. As a result, the greater the savings and investment, the higher the GDP will be.

Furthermore, Ugwuegbe and Uruakpa (2013) looked into the impact of capital formation on Nigerian economic growth. All the variables used in the study were capital formation, inflation rate, stock market capitalization, and interest rate on economic growth. The OLS method, Phillips-Perron, Johansen co-integration test, and vector error correction model (VECM) were all used in this study. As a result of the findings, capital formation is important in Nigeria since it has a positive and significant impact on economic growth.

Another researcher, Haque (2013), used a co-integration approach to better understand the impact of private and public investment on economic growth in Bangladesh from 1972 to 1973 and 2010 to 2011. He concluded that private investment has a positive impact on economic growth both in the short and long run.

Mallick (2012) analyzed private investment in information and communication technology in India using panel regression methods throughout the period 1999-2000 to 2004-2005. State wealth in

ICT – sector-specific infrastructure per capita income, human resources, physical infrastructure, and labor productivity – has been discovered to result in private investment and economic growth.

In their study, Lokesha and Leelavathy (2012) discovered that market size, population income, and GDP growth are some of the key determinants of FDI in India. Furthermore, according to Bint-e Ajaz and Ellahi (2012), other variables such as GDP growth have an impact on public and private investment. Furthermore, the level of inflation, exchange rates, and GDP have an impact on investment and exchange rates, and inflation and lending rates have an impact on private investment.

Gui-Diby (2014) used two approaches to examine the impact of direct foreign investments on the economic development of 50 African nations from 1980 to 2009. The first set is based on panel data, while the second is based on cross-section data using ordinary least squares and includes country-by-country investigation.

After conducting research on the causal relationship between private investment and economic growth in Pakistan between 1981 and 2008 using Granger causality and co-integration analysis, Ghazali (2010) claims that there is a directional causality between private investment and economic growth as well as a long-run relationship between private investment and economic growth.

In addition, Tan and Tang (2011) investigated the relationship between private domestic investment (PDI), the user cost of capital, and economic growth in Malaysia from 1970 to 2009. According to Granger's causality and co-integration analysis, economic growth, PDI, and the user

cost of capital are cointegrated. Unidirectional causality exists between PDI and economic growth, as well as between PDI and the user cost of capital.

Villa (2008) used multivariate time series analysis on output growth rates, investment, and government consumption in Italy from 1950 to 2005, and the results revealed that domestic and economic growth are causally related. On the other hand, Qin et al. (2006) revealed a positive association between domestic investment and growth in their empirical findings.

Furthermore, Tang et al. (2008) used a multivariate VAR system in conjunction with an error correction model (ECM) to investigate the causal connection between domestic investment, foreign direct investment, and economic growth in China from 1988 to 2003. Their findings suggest that domestic investment and economic growth have a positive association. This demonstrates that, in China, domestic investment contributes more to growth than FDI.

Furthermore, Adams (2009) discovered that domestic investment is positively and significantly correlated with economic growth in sub-Saharan Africa using ordinary least squares (OLS) and fixed effects estimation for the period 1990–2003 in his study on the impact of FDI and domestic investment on economic growth in sub-Saharan Africa.

Malik and Chowdhury (2001) explored the relationship between economic growth, state investment, and private investment in Pakistan, and found that investment is an important source of economic growth. Not only that, but Ghani and Din (2006) looked into the nature of public and private investment in Pakistan's economic growth, finding that it had a positive and significant impact.

Imoisi and Sogules (2015) used co-integration and error correction mechanism methodologies to investigate the influence of investment on economic growth in Nigeria from 1970 to 2013, concluding that private investment has a positive but insignificant impact on economic growth.

Abdullah and Bukari (2012) used the VAR and VECM models to investigate the impact of foreign private investment on economic growth in Nigeria from 1970 to 2009, concluding that there is a long-run link between FDI and GDP. However, there is a one-way causality between FDI and GDP.

Ghura (1997) conducted a study for Cameroon in which he attempted to determine the role of private investment in economic growth by using more than three decades of data to test the hypothesis using modern econometric time series tools. He concluded that private investment plays an important role in growth and expansion. A one-percentage-point rise in private investment boosts economic growth by 1.4 percentage points. This demonstrates that private investment has a greater impact than government investment.

Kalu and Mgbemena (2015) used the Error Correction Modeling (ECM) approach to investigate the relationship between private investment and economic growth in Nigeria between the years 1970 and 2012. They found that private investment had a positive effect on economic growth.

Using annual data, Majeed and Khan (2008) investigated the factors of private investment and the relationship between public and private investment in Pakistan from 1970 to 2006. The variables used in the study included net capital inflow, private sector output, interest rates, domestic credit of the banking system, and private sector capital stock. The findings, on the one hand, are positive and point to private investment as a crucial determinant in Pakistan. As a result, changes in bank

credit volume have a beneficial impact on investment. Furthermore, the relationship between public and private investment produced a crowding out effect. Above all, the results revealed that the public sector consumes the majority of financial and physical resources, which has a negative impact on Pakistan's private sector.

Naqvi (2002) conducted another study on the association between private investment and economic growth in Pakistan. Annual data over the previous 37 years was used. The relationship was investigated using VAR co-integration. The outcome, however, demonstrated that the government benefited from private investment due to the time-build characteristics. The accelerator-based model was further used to determine whether the economy could also generate investment from private and public investment. The result indicated that investment output depends on economic growth. As a result, investment cannot be considered a source of economic growth in and of itself.

Muyambiri and Chiwira (2007) conducted research in Zimbabwe from 1970 to 2007 to determine the causal relationship between private and public investment. Both public and private investment were subjected to the investment flexibility accelerator idea. As a result, the relationship between public and private investment was found to be minor, and the causality results were shown to be unidirectional. Moreover, the results revealed that private investment comes first before public investment in Zimbabwe.

According to Warner (2014), average data shows a weak relationship between public and private investment in both the short and long-run. According to Nunnenkamp and Spatz (2004), an international organization believes that developing nations should rely on FDI since it stimulates economic growth more than other types of capital inflows. On the other hand, Saqib et al. (2013)

showed that FDI has a negative impact on economic growth in Pakistan, while domestic investment has a positive impact. Nunnenkamp and Spatz (2004) conclude, "The relationship between FDI inflows and growth is far from being firmly proven once endogeneity problems and the heterogeneity of host economies are taken into account." However, the impact of FDI on economic growth is still unclear.

Toshyya Hanato (2010) used an error correction model to investigate the relationship between public and private investment, and he based his findings on Japanese empirical data. The findings confirmed that public investment crowds out private investment. Gjini and Kukeli (2012) investigated the effect of public investment on private investment in transition economies in Eastern Europe. The findings revealed that public investment did not crowd out private investment. Foye (2014) researched the influence of public capital spending on private investment in Nigeria. The findings revealed that public investment motivated private investment growth.

Dreger and Reimers (2016) investigated whether "public investment stimulates private investment in the Euro-area" and found that a lack of public investment may have hampered private investment and GDP growth in the Euro region. Furthermore, the research above indicates that public investment not only stimulates but also benefits private investment. Nonetheless, several researchers demonstrated the drawbacks of public investment. In other words, public investment stifles private investment. Cruz and Teixeira (1999), for example, studied the impact of public investment on private investment from 1947 to 1990 and found that while public expenditure crowded out private investment in the near term, both factors complemented each other in the long-run.

Furthermore, according to Erden and Halcombe (2005), public investment has a beneficial effect on private investment in emerging nations, whereas it has a negative effect on private investment in industrialized countries. Furthermore, a study conducted by Gjini and Kukeli (2012) in Western countries found that state investment crowds out private investment. However, it is not in Eastern European countries.

Ramirez and Nazmi (2003) studied public investment and economic growth in Latin America using OLS and data from 1983 to 1993 and found that the openness of the economy, human capital, and government consumption all have a substantial impact on private investment. Furthermore, the study found that both private and state investment contribute to economic growth.

Using a Vector Autoregressive (VAR) technique, Ejaz, Ghani, and Musleh-ud Din (2006) investigated the influence of public investment on economic growth in Pakistan. The VAR utilized included four variables: private investment, public investment, and public consumption, as well as GDP data from 1973 to 2004. However, the results showed that private investment drives economic growth the most, whereas public investment and consumption have little bearing on economic growth. Furthermore, the findings revealed a long-term causation between private investment, state investment, public consumption, and economic growth.

In Korea, Singapore, and Taiwan, Syed et al. (2007) investigated the incidental relationship between public investment and economic growth after analyzing Heterogeneous Dynamics Panel Data from 1971 to 2000 using a range of econometric approaches. Furthermore, the authors combined the GDP growth rate with variables such as public investment, public consumption, and private investment. The findings reveal that the three variables, public and private investment, as

well as public consumption, have a long-term dynamic impact on economic growth, and that pairwise analysis reveals bidirectional causality between public and economic growth in all nations.

Using VECM, Swaby (2007) investigated the relationship between public investment and economic growth in Jamaica. The Granger causality results after the analysis revealed that public investment does not affect GDP, but GDP drives public investment. The VECM's findings, on the other hand, revealed that in the long run, domestic private investment, FDI, and the REER all have a statistically significant positive influence on GDP, and that public investment also crowds out net private investment.

Kumo (2012) used a bivariate Vector Auto-Regression (VAR) model with and without a structural break to conduct a pairwise Granger causality test between infrastructure investment and economic development in South Africa from 1960 to 2009. However, the findings revealed that in South Africa, there is a substantial association between infrastructure and GDP growth. Kumo (2006) used time series data from 1975 to 2003 to investigate the effect of time on altering uncertainty on South African private fixed investment. The author used Generalized Autoregressive Conditional Heteroskedasticity (GARCH), and he designed the relationship between investment aspects in an error correction model, which permitted him to explore the impact of macroeconomic uncertainty. The findings revealed that macroeconomic uncertainty has a positive control on combined private fixed investment. Not only that, but the influence has a significant positive impact on GDP and the rate of real effective exchange (Kumo, 2006).

Since 1985, South Africa's gross domestic fixed investment has deteriorated because of the nuisance effect of economic segregation, dis-investment, and outflow of foreign capital. However, if you use Johanson's co-integration methodology to see if variables are co-integrated, you will

find that they are. DuToit and Moolman (2004) projected a model of fixed investment. The findings show that a neo-classical supply-side model for the South African budget predicts investment to be stable.

In Africa, Tchonassi and Ngangue (2014) looked at the relationship between private and public investment. The study, which utilised panel data, used independent variables such as public investment, GDP, trade openness, external debts, and domestic credit. As a result, both private and public investment were found to be negatively related, according to the findings. This does, however, imply that there is crowding-out. As a result, the other independent variable had a positive relationship with private investment. This means that if any one of those variables increases, the country will see an increase in private investment. Therefore, the study concluded that inspiring those factors that are positively related to private investment may be an area to increase the standard of living.

Njuru, Ombuk, Wawire, and Okeri (2014) also investigated the impact of management spending on private investment in Kenya from 1963 to 2012. The VAR approach reveals that public spending does not encourage private investment, implying that there is crowding out. The study recommended that if the government can spend more money on projects that are valuable, like roads and improving the health of the population, this may lead to crowding-in, which will serve as a way of encouraging the level of investment.

In Cameroon, a similar study was conducted, with the results demonstrating the unimportance of crowding-in of public expenditure to private investment. Consequently, the research concluded that the Cameroon government must give attention to excellent education, research, and good

governance in order to enhance infrastructure and maintenance, as well as improve industrialization (Mbella and Forgha, 2013).

The influence of capital formation in Nigeria was studied by Ibe and Nathaniel (2016). Multiple linear regression was used in the study, which also included exploratory variables such as savings, foreign debts, interest ratio, and inflation level. The findings revealed that capital formation and economic expansion in Nigeria are absolutely associated in the long term as well as the short term. Savings, according to the study, do not boost the rate of economic growth. As a result, the report advised that infrastructure be improved and that savings be made.

Acosta and Loza (2005) did an experimental study in Argentina to find the macroeconomic elements that can influence investment choices. Their findings reveal that in the short run, investment decisions appear to be unaffected by shocks in returns and aggregate demand. However, there is evidence that public investment has a crowding-out consequence. However, in the short-run, capital accumulation is dependent on well-developed financial and credit markets as well as fiscal sustainability prospects.

From 1970 to 2000, Ouattara (2005) looked into the factors that influenced private investment in Senegal. (1996) provided the unit root and the Dickey–Fuller generalized least squares de-trending test, which he used to investigate the long run private investment equation. In addition, he used the Ng-Perron test and Johansen co-integration approaches. However, the findings show that public investment, real income, and foreign aid flows have a positive influence on private investment, while credit availability to the private sector has a negative impact on terms of trade.

Akpalu (2002) models private investment, public investment, real GDP, Consumer Price Index (CPI), lending rate, private sector credit, and GDP per capita using annual time series from 1970 to 1994. He used the two-step Engle-Granger process as well as the Johansen multivariable test techniques. The data demonstrated that, in the short run, real per capita income growth, credit availability, and public investment all influence private investment. On the other hand, it has been discovered that public investment crowds out private investment. Furthermore, the findings suggest that in both the long and short run, there was a significant negative association between the cost of capital and private investment in Ghana.

Frimpong and Marbuah (2010) also looked into private investment in Ghana. Within an Autoregressive Distributed Lag model, they used modern time series and econometric approaches such as unit root tests, co-integration, and error correction model techniques (ARDL). The findings revealed that, in the short run, public investment, real interest rates, real exchange rates, inflation, openness, and a constitutional government all influence private investment. On the other hand, real output, inflation, foreign debt, real interest rate, openness, and real exchange rate all have a significant impact on long-term private investment. Ramirez and Nazmi (2003) conducted research in nine major Latin American countries and found that both governmental and private investment helped spur economic growth. Furthermore, Ashipala and Haimbodi (2003) observed and agreed that private investment plays a huge and vital role in South Africa's long-term stability policies.

Easterly (2002) carried out a study after using a growth accounting framework and agreed on the supporting effect of capital contribution to economic growth. Furthermore, Alemayehu and Befekadu (2005) concluded that capital has a positive contribution to economic growth in their analysis, utilizing a growth accounting framework to find out the characteristics that characterized

the Ethiopian economy. Using data from 1981 to 2000, Paterson (2003) found a positive association between investment and GDP growth in Ethiopia, utilizing data from 1981 to 2000 to find out the relationship that exists between growth in real GDP and investment using the Harrod–Domar growth model.

Despite the fact that approaches pose questions about causation, authors such as Lederman et al. (2001) suggest that corruption is negatively associated with a number of important economic indicators. Although there has been recent research on corruption, its impact on private investment is still in its early stages. Mo (2001) found that corruption reduces the share of investment in a sample of 46 countries.

According to Papyrakis and Gerlagh (2006), an increase in resource rents leads to a decrease in investment that multiplies over time, and this, in the long run, diminishes income substantially. If labour productivity is assumed to depend endogenously on the level of investment, the output that exceeds the increase in resource income will be affected because of the decrease in savings and investment. This, however, will affect the resource curve either directly or indirectly.

According to the Department of Treasury (2017), South Africa's poor growth in investment is due to the country's low savings rate, and policies have been put in place to boost investment. De Berg (1996) conducted research on the relationship between economic growth, external relief, international direct investment, and local investment in sub-Saharan African nation states. In comparison to international aid or foreign direct investment, they found that there was a positive association linking economic growth and domestic investment.

One of the challenges to economic evolution, particularly in unindustrialized countries, is a lack of savings and investment. The only option to alleviate the limits of low domestic saving and investment is to allow private capital inflows (Obadan, 2004). According to Obadan (2004), private capital inflows are transferred through portfolio investment and the transmittal of foreign direct investment (FDI). On the other hand, these, on the other hand, are important avenues via which resources can be distributed from developed to developing countries (Chatterjee and Turnasky, 2007). Private money, according to Levine (2005), Ralhan (2006), and Ocharo (2013), is a source that broadens and excavates the financial market. It aids in the increase of liquidity, the transmission of knowledge and management information, and economic progress. Because private investment contributes to economic progress, policymakers in developing economies have recognized the need for foreign money.

Tawiri (2010) investigated the influence of economic growth in Libya, finding a favourable long-term and short-run association between economic growth and investment. The findings also revealed that investment leads to growth, and that growth, in turn, leads to employment, which boosts economic growth. Onsare's (2013) research on the nexus between investment and economic growth in Kenya revealed a weak positive association, implying that economic upliftment in Kenya is not solely determined by investment, but other features also influence it. Although investment has an impact on Kenya's economy, it is insignificant.

One of the experts, Akanbi (2012), stated that capital and economic expansion are the elements of domestic investment in Nigeria. The legal framework of a country, as well as the political atmosphere and institutional sphere, are all considered determinants of growth. It is, however, a challenge to South Africa to have a political environment that is sound enough to stimulate

investment rates as well as economic growth, since the political climate stands as the major socio-economic problem in the country (Corrigan, 2009).

Theoretically, government spending can restrict private investment, which is known as the "crowding-out effect." However, several experiential investigations have found that government consumption crowds out private investment, whereas management investment crowds in private investment. Furthermore, the effect of crowding-out and crowding-in has been a point of disagreement among economists when it comes to the repercussions of government spending on private investment. Crowding resulting from an increase in interest rates, which may eventually lead to excessive expenditure, could, on the other hand, enhance economic activity.

According to Mahmoudzadeh et al. (2013), the influence of government expenditure on private investment in both developed and emerging countries was studied using panel data from 2000 to 2009. 15 oil-exporting countries were investigated, with Russia and Kazakhstan among them. However, the findings revealed that government spending boosts private investment in both industrialized and developing countries, indicating crowding. Government expenditure also has undesirable consequences for private investment. In their study, Afonso and Sousa (2009) used the Vector Auto Regression method (VAR) in Bayesian analysis to show that government expenditure shocks cause a significant crowding-out effect in Germany, Italy, the United States, and the United Kingdom.

After researching the relationship between government expenditure and private investment in Greece using the Error Correction Model (ECM), Momatzakis (2001) came to the conclusion that public investment had a negative effect on private investment using annual data from 1950 to 1998.

Government consumption, on the contrary, has a negative impact on private investment. Government investment, contrarily, has a positive impact on private investment.

Sen and Kaya (2014) found that "government current transfer spending, government current expenditure, and government interest spending" crowd out private investment, whereas government capital spending crowds in private investment in Turkey, using data from 1975 to 2011. Furthermore, Kustepeli (2005) concluded that although government spending crowds in private investment, the government deficit, on the other hand, crowds out private investment.

Voss (2002) used data from the United States and Canada from 1947 to 1996 to demonstrate the impact of public investment innovations on private investment. Furthermore, Xu and Yau (2010) imply that government investment in public goods in China has crowded-in private investment positively in their research after VAR analysis.

In conclusion, Kowalski (2000) claims that private investment is a useful measure of economic progress. As a result, investment can serve as a long-term source of modern economic growth, primarily through capital formation, productivity export, and infrastructure development.

However, it is clear from the study that various investments by different economic agents, such as the government, private investment, and FDI, have played different roles in reviving a depressed economy, but the level of economic activity, development, and growth in South Africa appears to be lagging behind expectations (Ozoh et al., 2016).

However, after several academic reviews on the relevance of private investment to economic growth, this study addresses this vacuum by re-investigating the influence of private investment on economic growth in South Africa.

2.4.1 Summary of Empirical studies on Private Investment and Growth

Table 2.2: An overview of relevant empirical studies on the impact of private investment on economic growth.

S/N	Author and year	Objective	Area and period	Variables	Methods	Major Findings
1	Suhendra & Anwar (2014)	The Outcome of Private Investment on Indonesian Economic Development and Its Determinants	Indonesia From 1990 - 2011	Human Capital, Economic Growth, Investment Credit, Interest Rates, Inflation, Exchange Rates	Ordinary Least Square (OLS) Method	Rates of interest and inflation have a negative and significant impact on private investment. Private investment, public investment, human resources, and labour all contribute to economic growth in positive and substantial ways. Government investment, economic growth, credit availability, and the exchange rate all have a positive effect on private investment.
2	Matsila (2013)	Assessment of South Africa's Private Investment Purposes.	South Africa 1980 - 2012	Private investment, savings rate, public investment, real exchange rate, interest rates, inflation.	Multiple Regression Model	According to the findings, a rise in public investment, a higher savings rate, and a contraction of the productivity

						all have an influence on private investment in South Africa. Increased uncertainty has a negative influence on interest rates and the exchange rate.
3	Thabani & Wellington (2017)	An Experiential Exploration of Zimbabwe's Private Investment Determinants	Zimbabwe 1980 - 2016	Gross domestic product, public investment, political instability, interest level, private sector credit, and private investment are some of the terms used to describe the economy.	Heterogeneous sampling was used.	The findings show that GDP and public investment are the strongest influences on private investment in Zimbabwe.
4	Mustefa (2014)	Ethiopian Evidence on Private Investment and Economic Growth	Ethiopia 1971 - 2011	Private investment, Government, Labour & human capital.	Co-integration and Vector Error Correction were employed..	Public and private investment have a good association with growth..
5	Batu (2016)	A Systematic Review of the Causes of Private Investment.	Ethiopia 2000 - 2015	Real GDP, private investment, public investment, exchange rate, interest rate, credit, inflation rate, international trade, and money supply are all terms used to describe the amount of money in circulation.	The study used systematic review.	The findings show that output/national income, public investment, and the exchange rate are the greatest imperative elements prompting private investment performance. Other factors such as interest rate, credit, inflation rate, international trade and money supply have only a little impact on private

						investment performance.
6	Nwakoby & Berhard (2016)	The significance of Private Sector Investment on Nigerian Economic growth	Nigeria 1986 - 2014	GDP, private domestic investment, foreign direct investment, foreign portfolio investment, exchange rate, interest rate, and inflation are all factors to consider.	A time series was used.	The results show that domestic private sector investment and GDP have unidirectional causal relationship.
7	Lesotlho (2006)	An examination of the factors that influence private investment in Botswana.	Botswana 1976 - 2003	GDP, inflation, bank credit, fiscal variables, exchange rates, and trade are all examples of macroeconomic variables.	Regression analysis was used.	The findings reveal that all of the factors and the rate of private investment have a short-run vibrant and long-run equilibrium relationship.
8	Molocwa et al. (2018)	The Factors That Influence Private Stable Investment in Emerging Markets.	South Africa. 1994 - 2015	GDP, real interest rates, real exchange rate, and general tax rate are all factors to consider.	The Johansen approach is used in this research.	The findings suggest that GDP has a beneficial long-term influence on private fixed investment. It also shows that tax rate is a complementary to private fixed investment. The effect of real exchange was also negative, implying that currency depreciation boosts economic growth in South Africa.

9	Agu (2015)	An Econometric Investigation of the Factors of Private Investment in Nigeria.	Nigeria 1970 - 2012	Domestic private investment, interest rates, infrastructure, public investment, political stability, and savings rate are all factors to consider.	Error Correction Methodology was employed in this investigation.	The findings show that the rate of investment is correlated with both the growth rate of disposable income and the real rate on bank deposits.
10	Sesele (2017)	South Africa's Private Investment Determinants	South Africa 1980 - 2014	Private investment, public investment, bond spread, interest rate, sadumm.	The study used ARDL model.	The findings demonstrate that interest rates play a role in reducing private investment.

11	Munthali (2012)	A Dynamic Panel Analysis of Public and Private Investment in Southern Africa	Southern Africa 1970 - 2002.	Real GDP, capital availability, public investment, real exchange rate, inflation, and uncertainty are all factors that affect real GDP.	The study made use of a modified version of Error Correction.	The findings reveal that capital availability has a statistically significant positive outcome on private investment both in the short and long term.
12	Ghura & Goodwin (2000)	A cross-regional empirical assessment of the bases of private investment	1975 - 1992: Asia, sub-Saharan Africa (SSA), and Latin America	Private investment, real GDP, public investment, domestic credit to the private sector, domestic credit to the government sector, inflation, real exchange rate, and external debt are examples of phrases that could be used to describe private and public investment.	The study used Panel figures.	The results reveal that private investment for 31 countries is stimulated by real GDP growth.

13	Attefah & Enning (2016)	Using an OLS Approach to Model the Contributing Factor of Private Investment in Ghana	Ghana 1980 - 2010	Real GDP, public investment, private sector credit, inflation, external debt, real interest rate, openness of economy, real exchange rate, taxation, and democracy are all factors to consider.	The study applied the series method.	The findings show that public investment, private sector credit, external debt, economic openness, corporate tax, and democracy all have an important significant on private investment, while variables like GDP growth, real interest rate, inflation, and real exchange rate do not.
zstan14	Mphela (2017)	The Analysis of Investment Activity in South Africa	South Africa. 1994 - 2015	GDP, interest rate, inflation, investment, tax and credit rate.	The study applied Cointegrated Vector Auto regression approach.	Economic growth, interest rates, inflation, and investment all have a positive relationship, according to the findings. In the long and short run, taxation and investment are negatively associated in South Africa, according to the study.

15	Atabaev et al. (2018)	The effect of crowding out (or in) on transition economies: the instance of Kyrgyzstan.	Kyrgyzstan 2005 - 2013	Private investment, govt. expenditure, remittance from abroad and broad money.	The study employed Vector Autoregression approach (VAR).	The results show that increases in government purchases boost private investment. More importantly, the findings demonstrate that government spending attracts private investment.
16	Manete (2018)	A sectoral approach to the influence of investment on economic growth and employment in South Africa.	South Africa. 1994 - 2016	GDP, employment, investment	The study used Autoregressive Distributed Lag (ARDL) and Vector Autoregressive (VAR).	Sectorial investment has a significance impact on employment and economic advancement according to the findings.

17	Kalu & Mgbemena (2015)	Issues and Further Consideration in Nigerian Domestic Private Investment and Economic Growth	Nigeria 1970 - 2012	GDP, private investment, private consumption, government spending, and interest rates are all factors to consider.	Error Correction Modeling was employed in the research (ECM).	The study demonstrates the importance of investment in terms of real gross domestic product (RGDP). The findings also reveal the long-term and short-term equilibrium relationship in the middle of real GDP and its determinants.
18	Sen & Kaya (2014)	Crowding-out or crowding-in? Analyzing the Effects of Government Spending in Private Investment in Turkey.	Turkey 1975 - 2011	Private investment, government current spending, government transfer spending (excluding interest spending), government capital spending, government interest spending and GDP.	The study employed Soren Johansen (1988).	The findings suggest that government spending, with the exception of capital spending in Turkey, drives out private investment.
19	Makuyana & Odhiambo (2018)	An Empirical Investigation of Public and Private Investment and Economic Growth.	South Africa 1970 - 2017	Economic growth, public investment, labour, private investment, private sector credit, and term of trade are all indicators of economic success.	The study applied Autoregressive Distributed Lag (ARDL).	The research discovered that private investment has a positive long-term and short-term influence on economic growth, but public investment has negative long-term consequences. Furthermore, gross public investment has been discovered to crowd-out

						out private investment, despite the fact that it is infrastructural. A component is discovered that attracts private investment. As a result, private investment is definitely more significant in South Africa than government investment.
20	Nguyen & Trinh (2018)	The impacts of public investment on private investment and economic growth: evidence from Vietnam.	Vietnam 1990 - 2016	GDP, private investment, investment by state-owned companies, public investment, foreign direct investment, capital stock, labour, and real interest are all factors to consider.	Autoregressive distributed lag model.	In the short-run, public investment crowds-in private investment, while in the long-run, it crowds-out private investment.

21	Aurangzeb & Haq (2012)	Impact of investment activity on economic growth of Pakistan.	Pakistan 1981 - 2010	GDP, public investment, private investment, and foreign investment are all indicators of economic activity.	Multiple regression was used in this investigation.	All investment determinants have a positive and significant impact on economic growth, in confirmation with the results. The Granger causality test also indicates that GDP has a bidirectional relationship with FDI and public investment, whereas GDP has a unidirectional association with private investment.
22	Masipa (2018)	The relationship between foreign direct investment and economic growth in South Africa: Vector Error Correction Analysis.	South Africa 1980 - 2014	GDP, FDI, trade openness, exchange rate, and govt. expenditure	The research employs the Vector Error Correction Model (VECM).	The results displays that FDI, like the real exchange rate, has a positive association with economic growth. While economic growth and public expenditure have a long-term negative relationship.

23	Meyer et al (2017)	The Impact of Government Expenditure and Sectoral Investment on Economic Growth in South Africa.	South Africa 1995 - 2016	GDP, govt. expenditure, real investment in mining, real investment in manufacturing, and real investment in financial sector.	The study applied VAR model method	The findings reveal that only financial sector investment has a significance impact on economic growth in South Africa in the short- run. In the long-run, however, the results showed that manufacturing investment had a positive influence on economic growth, while government spending had a negligible impact in South Africa.
24	Abdulmumini & Tukur (2012)	The relationship between domestic investment and economic growth in Nigeria.	Nigeria 1981 - 2010	GDP, domestic investment and exports.	The study employed Non probability sampling method.	The findings show that domestic investment, exports, and economic growth in Nigeria have a long-term positive relationship. Furthermore, in Nigeria, there is a considerable short-run negative bidirectional relation between domestic investment and export. Despite this, the study found no short-term causal link between export and economic growth.

25	Sayef (2017)	The Impact of Domestic Investment on Economic Growth.	Malaysia 1960 - 2015	GDP, domestic investment, export and labour	Correspondence examination, Johansen co-integration investigation of the Vector Error Correction Model, and the Granger-Causality test were employed in the research.	In the long run, domestic investment, export, and labour have a positive significant on economic growth. Furthermore, there is no link between domestic investment and economic growth in the short run.
26	Fujaw (2018)	The Determinants of Private Investment in Ethiopia.	Ethiopia 1996 - 2016	Private investment, real GDP, public investment, external debt servicing, inflation, interest rate, access to credit, foreign exchange reserves, and foreign direct investment.	OLS regression method was applied.	Public investment, real GDP, external debt, and bank credit all have a positive significant on private investment, according to the findings. While interest rates and foreign direct investment displayed negative significant consequences on private investment performance.

27	Tchouassi & Ngangue (2014)	Private and Public Investment in Africa: A Time-Series Cross-Country Analysis.	Africa 1980 - 2010	Public investment, GDP, trade openness, external debt, domestic credit to private sector are all factors to consider.	The study employed time-series method.	Investment by the public has a negative impact on private investment. This means that public investment crowds-out private investment. To put it another way, there is a substitution effect between private and public investment.
28	Kumo (2006)	Macroeconomic Uncertainty and Aggregate Private Investment in South Africa.	South Africa 1975:Q1-2003:Q3	Uncertainty in output growth, real effective exchange rate, uncertainty in real interest rate, inflation uncertainty, and term of trade uncertainty.	The study applied ECM technique.	The findings suggest that time-varying macroeconomic uncertainty affects private fixed investment significantly.
29	Ghani & Din (2006)	The Impact of Public Investment on Economic Growth in Pakistan.	Pakistan 1973 - 2004	Public investment, private investment, public, consumption and GDP are all factors to consider.	The study applied VAR methodology	According to the findings, private investment is the primary driver of growth. It also shows how insignificant public investment and consumption are in terms of economic growth.

30	Zaheer & Saleem (2018)	The Impact of Domestic Investment on Economic Growth During 1980 – 2016: (A Case Study of Pakistan).	Pakistan 1980 - 2015	GDP, domestic investment, labour and exports.	The study applied ECM model	The finding indicated that exports positively influence economic growth. Aside from that, the findings reveal that private investment and labour force have a negative implication on economic growth.
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Source: Author Computation

As stated in Table 2.2, thirty empirical papers from various scholars were reviewed. All of the findings suggest that private investment appears to have a beneficial impact on economic growth in South Africa and many other developing nations. However, Sen and Kaya (2014) found that government spending crowds out private investment in Turkey. Furthermore, according to Tchouassi and Ngangue (2014)'s empirical findings on the relationship between private and public investment in Africa, public investment has a negative impact on private investment, implying that public investment crowds out private investment, implying that there is a substitution effect between the two variables. Furthermore, a study conducted in Pakistan by Zaheer and Saleem (2018) discovered that investment has a detrimental consequence on Pakistan's economic progress. However, the findings remain inconclusive.

As a result, the data's discrepancies cast doubt on the direction of the relationship between private investment and economic growth. As a result, the study fills this vacuum by re-examining the causal influence of private investment on economic growth in South Africa.

2.4.2 Empirical Studies on Determinant of FDI

Although the focus of this study is on private investment, it is useful to briefly examine some of the empirical determinants of FDI, as some of these determinants are also important for determining the behavior of private domestic investment. The varied character of the world's economic environment gives rise to various theoretical ideas on the determinants of FDI and its influence. There are many theories about what attracts FDI. Some scholars have argued that competition, control of the physical exchange level, and innovation are the keys to attracting FDI. Others have, in contrast, argued that social conditions, economic expansion, technological development, and labor abundance in recipient nations are the keys to attracting FDI (Crushman, 1985; Hymer, 1976; Dunning, 1980, 1988). Buckley, Clegg, Wang, and Cross (2002), on the other hand, made it obvious that the amount of growth assistance provided by FDI is determined by the recipient country's economic and societal factors, as well as the quality of its environment.

Many African countries are taking advantage of the opportunity given by FDI to invest in their economies. Zimbabwe, Uganda, South Africa, and Nigeria are at the forefront of this transformation. Indeed, one of the objectives of founding the New Partnership for Africa's Development (NEPAD), according to Funke and Nsouli (2003), was to increase FDI inflows to the region. Furthermore, according to UNCTAD (2007), around 40 African nations enacted 57 new measures affecting FDI in 2006, 49 of which stimulated inbound FDI. Not only that, but the increase in FDI in most parts of the world represented significant economic growth and strong corporate enactment (UNCTAD, 2008).

The majority of FDI research in Africa is based on macro-elements of investment drifts into nations (Opaluwa et al., 2012). For example, Obawona (2001), for example, discovered that

macroeconomic and political stability, as well as policy consistency, are the most important determinants of fascinating FDI into Uganda. Anyanwu (1998) also discovered that FDI in Nigeria indicates a high level of consideration for alterations in domestic investment, domestic output indigenization policy, and economic liberalization.

A number of scholars, including Borensztein et al. (1998), Glass and Saggi (1999), and others, have determined that FDI is an economic growth stimulant. Dees (1998) also argues that FDI has been crucial in informing China's economic growth, whereas De Mello (1997) found a positive association for a few Latin American countries. As a result, foreign capital inflows are expected to boost investment levels.

Between 1988 and 2003, Tang, Selvanathan, and Selvanathan (2008) looked into the causal relationship between FDI, domestic investment, and economic development in China. Their findings imply a bi-directional causal link between domestic investment and economic development. There is a one-way causal relationship between FDI, domestic investment, and economic growth. They did, however, conclude that FDI and domestic resources are becoming increasingly complementary. For sustainable development to be achieved in any nation, there has to be a vast capital inflow into that country, and that brings us to the importance of FDI (Ominyi and Adayi, 2017).

Since the establishment of democracy in South Africa over two decades ago, the country has faced contemporary difficulties such as unemployment, poverty, and inequality. Despite the progress made in addressing these issues, the struggle against unemployment, poverty, and significant disparities continues in modern South Africa. The official unemployment level has climbed

steadily over the last two decades, from 17% in 1994 to around 26% in the fourth quarter of 2015 (Statistics South Africa, 2015).

The yearly growth rate of the gross domestic product (GDP) is increasing from around 0% to 1%, which is smaller than the anticipated yearly widening measurement of 5%. Given the high percentage of unemployment, it is evident that job creation is one of South Africa's major concerns, particularly for the youth. To address the difficulties of joblessness, in addition to promoting economic growth, expansion, and employment formation, the administration has implemented a slew of policy options. These policies span from the GEAR (Growth, Employment, and Redistribution) Augmented and Shared Growth Initiative for South Africa (AsgiSA) and New Growth Path (NGP) to the National Development Plan (NDP) currently in place (The Presidency, 2011).

These policies aim to entice extra external investors in order to enhance economic extension and job creation, as well as supplement domestic expenditure, which accounts for a higher share of overall management spending and investments. In his speech, the president of the South African Republic underlined the significance of recruiting international investment. He went on to say that attracting foreign investors is a single solution to joblessness, deficiency, and excessive inequality (SONA, 2014). According to several researchers, FDI inflows and exports are solutions for economic growth and job creation in developing markets, including Asiedu (2006), Xolani (2011), Mpanju (2012), and Euhrmann (2013). On the other hand, proponents of FDI have noted and emphasized the importance of foreign direct investors in boosting emerging economies' growth through the introduction of technology and skills, the creation of jobs, the refinement of domestic infrastructure, and other positive externalities that come with foreign investors.

Many empirical researchers support FDI-led growth. According to Denisia (2010), FDI can boost a country's production and effectiveness. He also stated that FDI could contribute to increasing GDP by expanding output production, particularly in the manufacturing sector, and thereby increasing exports in the end. According to Ncunu (2011), FDI inflows can help generate employment and give people access to cutting-edge technologies, which will help the equilibrium of disbursements. As stated by Ncunu, foreign direct investment (FDI) is a driver of economic advancement in Central and Eastern European nations.

Madariaga and Poncet (2007) also employed panel data analysis to look at the causative connection linking international trade and FDI inflows to China from 19 countries between 1984 and 1998. The findings suggest that FDI entries into China have an impact on export volume. In contrast, Chandhuri and Banerjee (2010) investigated the impact of FDIs on agricultural land in developing countries by developing a Three-Sector General Equilibrium model with concurrent job loss for both skilled and unskilled workers. Their findings suggest that FDI in agronomy could provide jobs for unskilled labour in the host country because farming is more labour-intensive and involves fewer mechanical abilities.

Similarly, Vacaflores (2011) examined the impact of FDIs on occupation growth in a cluster of Latin American republics from 1980 to 2006. The information was obtained from 12 Latin American markets, and the discoveries suggest that FDI played a role in job development in those nations. In addition, according to Rusike (2007), FDI contributes to job creation in local economies both directly and indirectly "when local spending increases due to the procurement of products and services by new employees."

Furthermore, all of these are expected to have favourable multiplier effects on the countries that they are hosted in (Rusike, 2007). Furthermore, FDI is crucial, particularly in emerging economies, because these nations have enormous human resource potential but lack the necessary machinery and resources for expansion and prosperity.

Therefore, FDI stands as an inducement for asset gathering and equipment relocation in the financial field. Moeti (2005) emphasized that a country should cultivate approachable behaviors with regard to investors and offer motivations with determination to attract the correct kind of FDI. Conversely, FDI is not always good for the host country, particularly resource-seeking FDI, because it may suggest weak value-adding activity and limited capital expenditure on plants and equipment, with the exception of attractive industries (Masipa, 2018).

Nonetheless, there are arguments against FDI, such as the possibility that it may "create capital flight, resulting in net capital outflow and so causing balance of payment concerns." When it comes to house investing, it may even generate income distribution issues. Furthermore, according to Tokunbo (2010), FDI may be mostly funds exhaustive, which may not be acceptable in the recipient country's aspect magnitudes (Bayai and Nyangara, 2013).

2.5 Conclusion

This chapter presented extensive and important sections, which helped to construct the foundation for the empirical version of the research. The importance of private investment to economic growth in South Africa was first explained in this chapter. The chapter was divided into various sections. The first section emphatically explained the theories that relate to investment, such as classical and neo-classical economic theories. The Harrod and Domar (1967) model was described as one of

those that believe in the importance of investment in economic growth. The chapter introduced the classical economic model as the suitable model for the study, which is based on growth.

The study went further by stating the relationship between Neo-classical theory and the Harrod-Domar model. The second section was based on the determinants of investment, which were stated in the preceding chapter as one of the objectives of the study. Many factors that stand as determinants of investment were elaborated. The study is explained further by analyzing the empirical literature review, which covers most of the studies that have been carried out by the researchers relating to private investment or investment as a macroeconomic.

In addition, the study took time to explain the summary of empirical studies on private investment and growth. A summary of 30 authors was explained in tabular form with their objectives, variables, methods, and major findings. Another section in this chapter explains clearly the contributions that FDI as a country's source of growth offered not only to South Africa but also to the whole continent. However, having discovered the theories and the factors that influence private investment, what contributions do these determinants make to the economic growth of South Africa? This question, however, leads us to an overview of the economic situation in South Africa.

Chapter Three

An Overview of the Economic Situation in South Africa's Growth

3.1 Introduction

From the beginning of the 21st century, South Africa has been faced with some socio-economic challenges. Its top socio-economic challenges include its macroeconomic strategy and policy implementation, labor market rigidity and inefficiencies, widespread inequality with service deficiency and disparities within certain communities, the community segment, globalization and the South African financial plan, as well as fiscal decentralization. In this regard, South Africa has often been classified as a very unequal society because of its high Gini Coefficient (NEDLAC, 2000).

The chapter attempts to present an overview of the South African economy and the history of its economic performance and programmes. It examines economic performance by focusing on sectoral contributions to GDP and macroeconomic performance in relation to set objectives for economic growth, exports, imports, and investments, as well as public expenditure to growth ratios. It further describes the investment climate and business environment in South Africa, as well as examines some investment promotion measures in the country and the comparative performance of public, private, and foreign investment. Accordingly, the chapter is further subdivided into 5 sub-sections. In section 3.2, a simple overview of the economy is presented. In section 3.3, the investment climate and business environment are explained. Section 3.4 elaborates on the investment promotion initiatives in South Africa while South Africa's comparative

performance of public, private, and foreign investment is expatiated, and Section 3.6 concludes the chapter.

3.2 Economic Overview of South Africa

At the time of apartheid, the economy of South Africa attained extensive conquest on the part of macroeconomic stabilization. However, this achievement did not produce the growth that can improve people's standard of living. The enactment of private and public investment since the middle of the 1970s has been disappointing. For example, from 1994 to 2002, total investment as a percentage of GDP increased by only 1.3% in nominal terms (Ndikumana, 2005).

Between 1984 and 1993, South Africa experienced a lengthy period of slow economic growth. This was because of internal political instability and trade and financial exclusion. Because of monetary and fiscal policy changes after 1994, South Africa improved its economic growth momentum and developed rapidly enough to be counted as the economic driving force of the continent and the world's foremost developing market. However, South Africa's economy is seen as failing to achieve its full potential (OECD, 2013).

The South African economy has been insufficient when compared with that of the 1960's. For example, in 2004, GDP per capita was only 40% greater than it was in 1960 (Mudenda, 2012). Later, after the global financial crisis, South Africa's economic growth started to decelerate and is only slowly recovering. This was caused by mostly unfavourable exogenous influences such as a bad mandate for exports, outpourings of money influxes that deteriorated the value of the rand, the burden of high household debt, and international crises that adversely affected expectations about growth (OECD, 2013).

In his address at a JIP Morgan event in December 2019, the deputy Minister of Finance, David Maseko, emphasized the major challenges facing South Africa then. These include the role of pension funds. According to his speech, growing the economy of South Africa would necessitate increasing both foreign and domestic monetary capital. He said that the savings of employees from the funding ministry should be protected (National Treasury, 2019). As a result, there should not be any risk arising from poor economic administration, whether in the private or public sector. Maseko, he also suggested that the economic sectors must see that the assessment proposals for investment must be effective. In addition, he emphasized that the government must not force asset managers to invest their clients' money in any unreasonable project. He concluded by saying that the scope of long-term endowment executives like pension funds only stands as a basis of authority that stimulates economic development and restructuring (National Treasury, 2019).

Another challenge is the reduction in expenditure and wage restrictions. The minister stressed that the department is working towards stabilization to monitor liability origination by expenditure. In addition, the assessment reduction will worsen the situation significantly by raising the cost of borrowing for the government and SOEs. This eventually will extend to private initiatives and, finally, all borrowing throughout the economy. This would, in the long run, force borrowing costs up, which includes raising household costs, which, of course, will lead to a decline in investment. Furthermore, the Minister stated that banks and corporations confronted with higher lending costs would have an effect on customers by increasing interest and bank charges, but this would reduce lending as well as investment. All this, in the end, will slow down the real economy (National Treasury, 2019).

The South African economy grew by less than 1% in 2018 and contributed about 68% of the region's GDP. South Africa's GDP per capita has dropped since 2014, even though the country gained the second highest position in Africa, with the expectation that it would pick up in 2019. With a 0.7% growth rate (ADB, 2019), South Africa was one of the five slowest growing economies in the world. The main economic growth activities in South Africa are manufacturing, services, and mining, which have remained in slow condition from the time when growth was recorded at 3.3% in 2011 and ever since then, it has declined, dropping below 2% beginning in 2014. From the period 2011–2018, the macroeconomic situation was steady with an inflation rate below the 7% convergence threshold, the fiscal deficit below 5% of GDP, and external debt below 60% of GDP, which is below the convergence target. However, revenue collection has been weak, so government expenditure keeps on increasing, thus increasing the fiscal deficit more than expected (African Development Bank, 2019).

According to the 2018/19 National Budget, there was a shortfall of R 48.2 billion in gross tax revenue, which was about \$3.4 billion. Hence, government spending continued to accumulate as a result of either free higher education or due to the ill-acting of state-owned initiatives (SOIs) or because of the management's interference to abate the effect of the decrease in economic growth (ADB, 2019).

The yearly-industrialized growth in 2011 was reduced from 3% to 0.7% in 2016. Mining, on the other hand, has been intermittently recording progress in 2012 and 2014; in 2015 it rose to 3% and again fell in 2017 to 1.1%. The nation's industrial sector was not left behind, which declined from 5% in 2010 to -0.6% in 2016, and agriculture experienced the same pattern. The drought that took place in 2016 contributed to agriculture's poor performance. Poor governance has also resulted in

low confidence in the economy. This was accompanied by an increase in the level of corruption and skills mismatches, as well as issues surrounding land expropriation (African Development Bank, 2019).

However, the government has currently announced some measures to boost confidence. These include efficient national-owned initiative panels, an innovative levy measure, and a R50 billion motivation package. However, these, however, would help to reinforce the fiscal alliance and to additionally develop macroeconomic stability and thus increase growth in the medium term. As a result, 1.7% is forecast for 2019 and 2% for 2020 in terms of investor confidence in the political space. Additionally, rising commodity prices in anticipation of better weather, as well as the potential growth of the country's business partners, such as Russia, India, Brazil, and other African nations, will all contribute to the country's growth (ADB, 2019).

Table 3.1 GDP Growth by Country, from 2008 – 2020.

Country	2008-10	2011-13	2014-16	2017	2018 (estimated)	2019 (projected)	2020 (projected)
Angola	6.5	5.7	1.1	-0.2	-0.7	1.2	3.2
Botswana	2.4	7.3	2.2	2.4	4.2	3.8	4.1
Lesotho	5.5	4.9	3.0	-2.3	0.9	1.2	1.0
Madagascar	1.3	2.1	3.6	4.2	5.0	5.4	5.2
Malawi	8.6	3.9	4.1	5.1	3.7	4.6	5.6
Mauritius	4.3	3.4	3.7	3.8	4.1	4.0	3.9
Mozambique	6.6	7.2	5.9	3.7	3.5	4.5	5.0

Namibia	3.0	5.3	4.4	-0.9	-0.1	2.6	3.3
Saao Tomee and Priincipe	6.6	4.1	4.8	3.9	4.1	4.6	5.0
South Africa	1.6	2.7	1.2	1.3	0.7	1.7	2.0
Eswatini	1.8	3.2	2.0	1.9	-0.5	1.7	2.3
Zambia	9.1	6.1	3.8	4.1	4.0	4.2	4.3
Zimbabwe	1.7	11.7	1.8	4.7	3.5	4.2	4.4
Southern Africa	3.0	3.9	1.8	1.6	1.2	2.2	2.8

Source: African Development Bank Statistics.

Over the years, the manufacturing sector has experienced a stable deterioration in fixed investment activity by way of capital spending, with almost 10% less in real terms than the highest documented in 2011. However, because of inadequate demand, most importantly in the domestic market, most manufacturing sub-sectors are performing lower than manufacturing capacity, while strong competition from foreign producers and local and export markets is increasing working costs (IDC, 2019).

However, the investment viewpoint remains insufficient, as manufacturers' expectations for the remainder of the year are still unpredictable. Notwithstanding, on a range of imported products, South Africa remains extremely dependent, most especially on crude oil, refined fuel and connected goods, technology and equipment, and also parts and fixtures for motor cars. However, imports of goods and services degenerated by 4.8% in real terms in the beginning of 2019, following a 3.3% rise in 2018 (IDC, 2019). According to the Smithian teachings of his

contemporaries in the English-speaking academic world, they insisted on the significance of gold, diamonds, and wool as the core parts of the economy, precisely because they were the products in which South Africa had a demonstrable comparative advantage (Bill, 2009).

Apart from the outwardly sloped mining sub-sectors, most of the economic sectors have relatively high export predispositions for their enactment, implying a substantial reliance on overseas markets. In recent years, exports have accounted for about half or more of total production in sectors such as automobiles, parts and fittings, equipment and apparatus, non-ferrous-metal goods, and other communication equipment.

At the beginning of the first quarter of the year, South Africa's exports degenerated by 14.2% in nominal rand terms. The export of motor vehicles, including accessories, fell by 20%, accounting for 3% of the total fall in exports. However, certain other areas, such as platinum group metals (-29.7% quarter-on-quarter), coal mining (-23.6%), machinery and equipment (-22.4%), and paper and paper products (-56%), all contributed significantly to the weak export performance in the early part of the year (IDC, 2019).

South Africa's exports, when compared to those of her developing market peers and progressive economies, have underachieved. On average, the size of the world's exports grew by 4.2% per year from 2010 to 2017, and in the same period, exports surpassed by 2.8% the average annual growth in South Africa. This sub-optimal performance revealed the great competition that confronted South African producers in global markets. This calls for the attention of both the local private and public sectors to boost the attractiveness of export products regarding price and quality, as well as service distribution. However, the infrastructure-related issues that stand as a barrier to export performance must be addressed (IDC, 2019).

South Africa's GDP growth decreased in 2017 from 1.3% to 0.7% in 2018. The medium-term picture is bleaker than the 2018 MTBPS predicted. In 2019, growth is expected to be 1.5 percent, rising to 2.1 percent by 2021. The changes in 2018 take into account poorer investment outcomes. There was a shaky recovery in household income and slower export demand than predicted as the global economy slowed. Consumer inflation has also been reduced lower than previously thought, owing to decreasing oil prices and food inflation "(Economic overview, 2019).

The South African Reserve Bank (SARB) stated that COVID-19 is the present challenge that has faced health, social, and economic progress, including domestic economic movement. The collation of precise economic data will also continue relentlessly. The Bank, however, at present, anticipates GDP in 2020 contracting by 7.0%.

The GDP of South Africa has in recent years been consistently shocked to the downside. Economic action has floundered compared to the expectations of the South African Reserve Bank as well as those of most analysts. This is because of incessant downhill reconsiderations from the growth point of view. According to the end of 2019 records, the economy was in the longest business cycle slump and technical recession. The pandemic, of course, hit at a period of macroeconomic helplessness. Since the first full-year growth drop in 2009, the SARB anticipates a GDP contraction of 7% in 2020. This presents a significant shock to the economy since the worst whole year GDP growth enacted in South Africa's post-World War II history was -2.1% in 1992 (SARB, 2019).

The deterioration in domestic growth over the past five years is obviously for organizational reasons. The SARB economy's growth estimate has tumbled steadily from 3% in 2014 to roughly 0.6% in 2019. The ability of the economy to develop has been restrained by structural challenges

such as skills shortages and infrastructure restraints, especially in the energy sector, and policy uncertainty. However, SARB's expectation is to recover the economy after COVID-19, but it may not be practicable because of these organizational restrictions. GDP is projected to rise by 3.8% in 2021 and improve to 2.9% in 2022. However, because of severe shrinkage in 2020 and due to a comparatively weak recovery, it is mostly likely to experience worse attainment in the following year than that of 2018. This implies that the financial stability risks will be worsened in the event of an economic recession that is bigger or even more prolonged than presently anticipated (South African Market Insights, 2020).

In his speech, President Ramaphosa announced an inclusive community and economic aid package worth R500 billion for South African citizens, businesses, and the economy to combat COVID-19 problems. He further said that the R500 billion is approximately 10% of South Africa's GDP. According to the country's statistics data, the total value of South Africa's economy in 2019 was worth in present values equal to R5.077 trillion. Therefore, referring to the president's speech, the relief package is around 10% of the size of South Africa's economy in present values (South African Market Insights, 2020).

In the fourth quarter of the year, agriculture experienced negative growth, dwindling by 7.6%. This was caused by deficient rains and heat wave conditions throughout the nation, especially in the Eastern Cape and Free State. This affected field crops. This also affected the production of garden crops in the fourth quarter (Statistics South Africa, 2020).

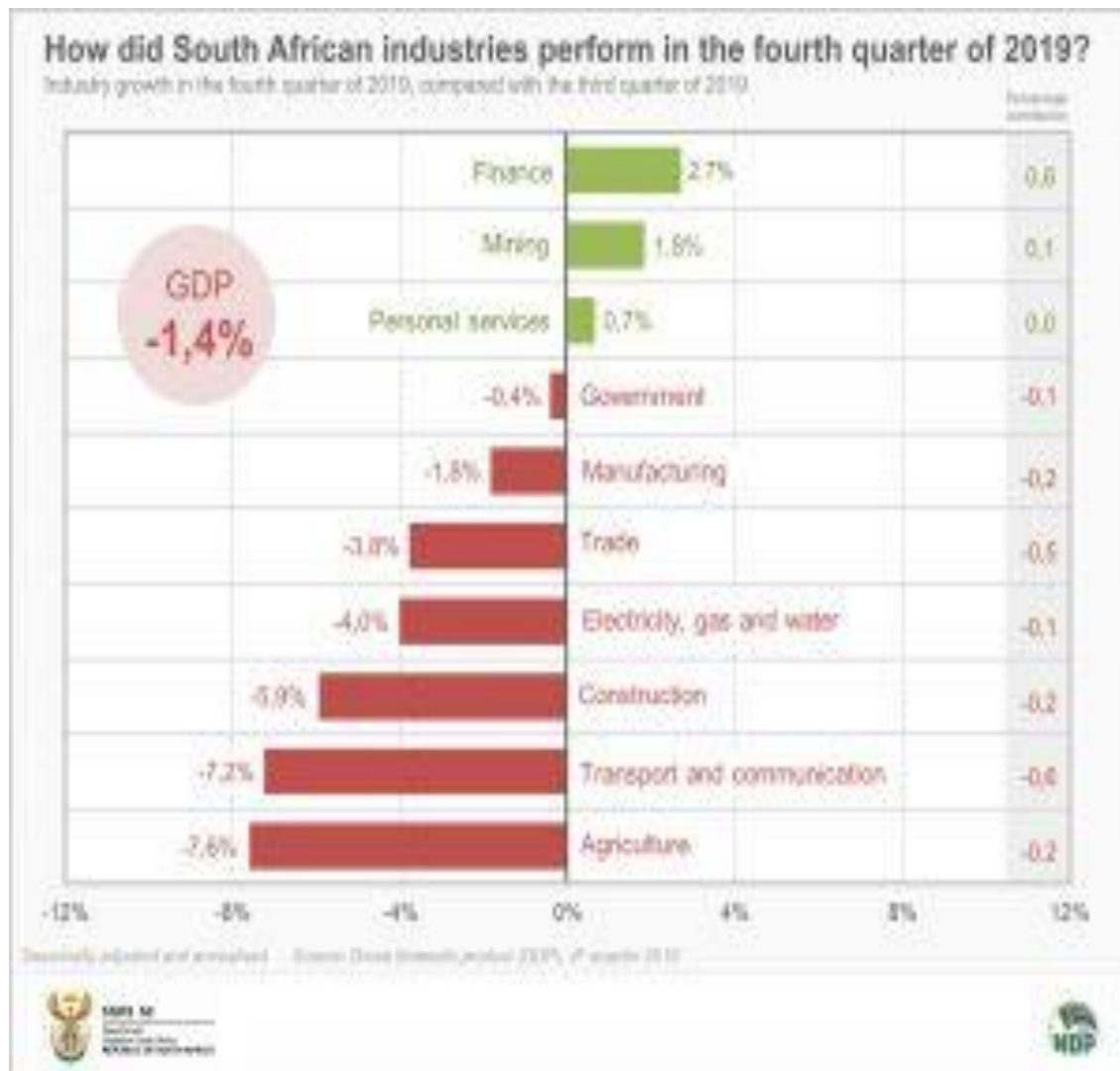
Ironically, as one industry was experiencing drought, another industry had heavy rains that damaged its products. Flooding occurred in several energy sites, as well as interference to coal conveyances caused by rain, which contributed to the poor showing of electricity, air, and liquid

supply manufacturing. The industry did not escape the shock of the heat wave either. Falling dam levels resulted in water restrictions in the country, which caused a reduction in activity in the water supply industry. Because of the poor performance of the industries, some civil servants lost their jobs in all ranks of management, with the exclusion of municipalities, and this reduced the performance of output by 0.4% (Statistics South Africa, 2020).

On the contrary, about three products, such as individual services, community work, recreation, and learning, have contributed immensely to economic growth during the year's fourth quarter. Furthermore, during the fourth quarter of the year, mostly platinum group metals, iron, steel, and metals drove mining growth. Poor demand and heavy floods destroyed coal production in the first quarter. Manganese and diamonds also dragged down growth. The growth of 1.8% only added 0.1 point to the percentage growth of the economy (Statistics South Africa, 2020).

The finance industry, showing flexibility in hard economic conditions, posted growth. The industry has been making unswerving progress for the past decade. The industry includes banking and insurance services. The increase of 2.7% added 0.6 of a percentage point to economic development.

Figure 3.1 South African Industries Performance in the Fourth Quarter of 2019



Source: (Statistics S.A, 2019)

Since the global economic disaster of 2008-2009, growth in 2019 has been the lowest since 2007. Farming was the primary source of growth in 2019, followed by manufacturing, construction, and mining. Furthermore, finance and government were two sectors that contributed positively to growth.

In 2019, the Governor of the South African Reserve Bank, Lesetja Kganyago (SARB), underlined the weakness of private sector fixed investment as the primary cause of South Africa's dismal GDP growth performance. He claimed that weak economic development not only stymies efforts to improve poverty and inequality; it also stymies public finances.

The economy of South Africa is threatened by two major macroeconomic concerns. The first is the global one, which occurs when trade growth slows, potentially precipitating a worldwide recession. The second is the domestic one, which has seen a worsening budgetary position, leading to state-owned firm bailouts. These two macroeconomic risks have the potential to exacerbate the already tough domestic growth position. Because of supply constraints and low business confidence, the economy's likely growth rate has slowed to roughly 1%. Demand has been reduced by higher taxes and slower wage growth. Inflationary outcomes have improved, approaching the midpoint of the target range of 3-6 percent, allowing policymakers to lower interest rates. Since 2017, trade tensions have been a feature of the global economy. However, in 2019, their costs have become much clearer since the crisis of 2009, and global export growth has fallen to its lowest levels. The manufacturing sector is shrinking worldwide (Monetary Policy Review, 2019).

The principal obstacles to the establishment of an African free trade zone are political rather than economic in origin. The AfCFTA provides African countries with a window of opportunity to expand intra-African trade, diversify and structurally alter the continent's economy, and pursue vital human rights and anti-poverty objectives. However, for African political leaders to harmonize national priorities in order to attain regional and global public goods, they will need to show strong political will, dedication, and coordination (Andrea, 2018).

Real gross domestic expenditure (GDE) fell by 3.6% in the third section of 2019 after increasing by 9.0% in the previous quarter. The reduction was caused by inventory depletion, while growth in all components of real gross domestic final demand moderated. Furthermore, real net exports produced the highest positive contribution to real GDP expansion in the third section of 2019. Households' real finishing intake outlay contributed to growth by 0.2% in the third quarter of 2019. Spending on real services, particularly durable products, decreased, while procurement of semi-long-lasting and non-resilient goods also decreased. A drop in real disposable income for households and a drop in consumer confidence (SARB, 2019) accompanied this.

For the second quarter in a row, real gross fixed capital formation increased in the third part of 2019, owing to a significant escalation in capital expenditure by private businesses, predominantly on machinery and other equipment, as a result of the ongoing construction of wind turbines and the demonstration of automatic data-processing machines in Cape Town. In the second quarter of the year, however, real fixed investment owned by the general government continued to decline at a rapid speed, while that owned by public corporations increased slightly (SARB, 2019).

In recent years, the economic growth of South Africa has slowed. Unemployment, poverty, and inequality continue to be problems. Unemployment is officially at 27% of the workforce, and it is disproportionately high among black adolescents. However, the country helps by distributing goods to large urban centers across the region, although inconsistent electrical supplies stifle expansion. South Africa is dealing with structural issues that are deterring economic growth, such as deteriorating global competitiveness, skills shortages, and recurring work slowdowns due to strike action. Furthermore, the government is limited to providing basic amenities to low-income

communities in urban districts in order to encourage job growth and provide an affordable university education (CIA, 2020).

Not only is South Africa's economic growth slowed by political infighting inside the ruling party, but also by the Rand's volatility. International investors are concerned about South Africa's long-term economic viability; most major international credit rating agencies downgraded the country's international debt to junk bond status in late 2016. (CIA, 2020).

The unprecedented character of this pandemic and the economic slump have made it imperative to propose such an adjustment, Tito Titus Mboweni, M.P., Minister of Finance, said in his budget speech in June 2020. Since most of the resources have been concentrated on the COVID-19 pandemic, the minister of finance informed people in his speech that the budget was set out as a plan to stabilize debt, reform spending patterns, and lay the groundwork for economic resurgence. The government has also implemented temporary countercyclical fiscal and monetary policies (South African Government, 2020). "Debt is our weakness," he remarked. We have amassed far too much debt, and this slump will only further add to it. This year, 21 cents of every Rand we spend on taxes goes toward paying interest on our previous obligations. According to him, rising interest rates result in indebtedness. Reducing debt will lower interest rates for everyone, allowing investment and growth to flourish.

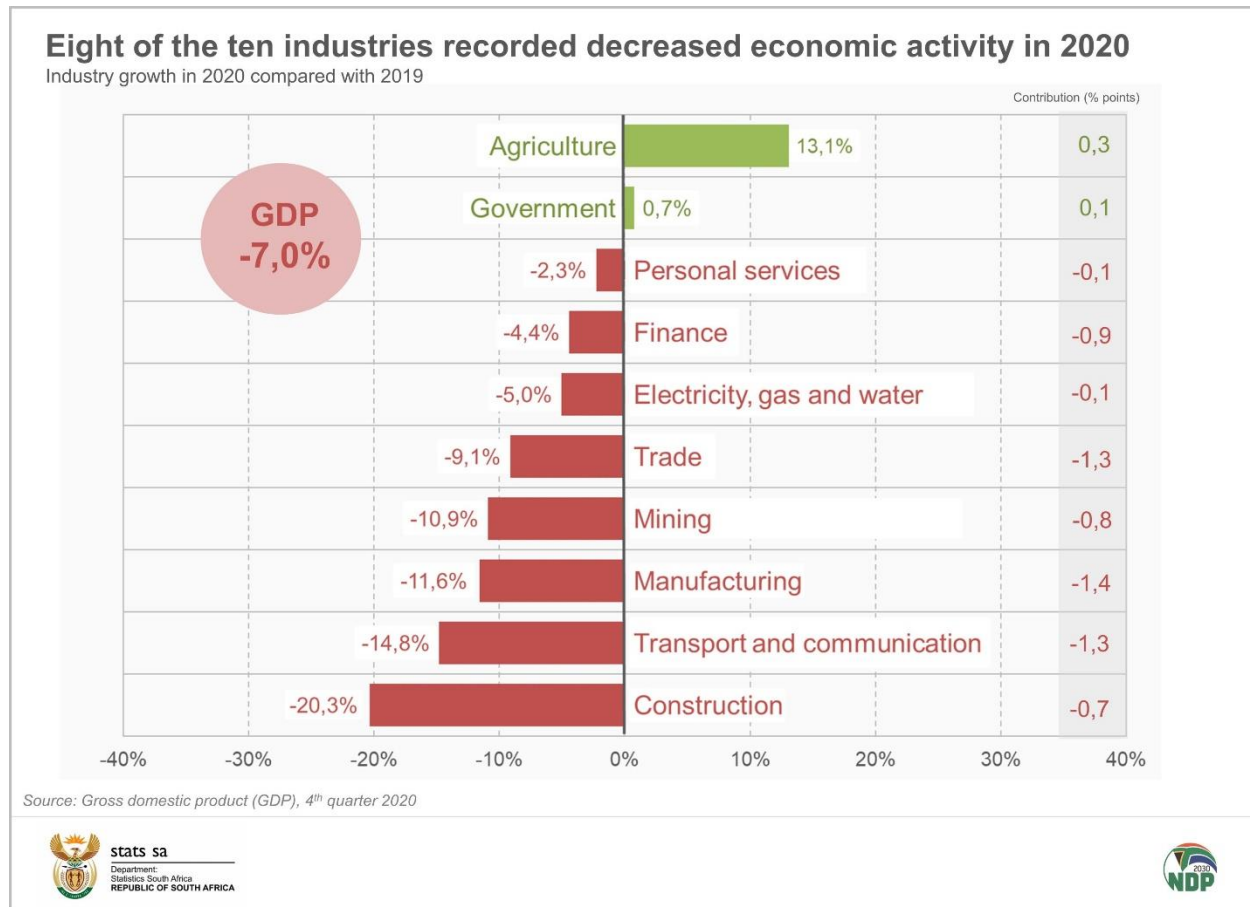
According to the minister, COVID-19 has turned the world economy on its head. In 2020, the world economy is anticipated to grow by 3.3%. The world economy is now forecasting a 5.2% contraction this year and in 2020, which will result in the largest drop in per capita GDP since 1870.

Tens of millions of employees have lost their jobs around the world. In South Africa, unemployment has climbed by 1%, reaching 30.1% in the first three months of 2020. In 2020, the South African GDP is anticipated to shrink by 7.2%. This will be the most significant contraction in almost 90 years. This will almost certainly result in a 3% increase in inflation this year (2020). While rising commodity prices and a lower oil price have lessened the blow, as a small open economy relying on exports, we have been heavily struck by both the global demand slump and economic activity restrictions (National Treasury, 2020).

The government, on the other hand, has decided to collaborate with the private sector, labour, the community, and the Central Bank. The government has provided citizens with a R500 billion program to address the COVID-19 problem. These are the largest economic stimulus packages ever seen in developing countries. Interest charges have been cut by the South African Reserve Bank (SARB) to make it more affordable for banks to lend money. Liquidity in the domestic bond market has also been bolstered by the SARB. The government has also provided interim COVID-19 grants to approximately 18 million South Africans. A R25.5 billion increase in the Social Development Department's budget is recommended to help the neediest (National Treasury, 2020).

The economy increased by 1.5% in the fourth quarter of 2019, for an annualized growth rate of 6.3%. This follows a reported growth in economic activity of 13.7% (annualized 67.3%) in the third quarter. The fourth part was the busiest time of the year. Eight out of ten industries made positive gains, especially manufacturing industries (strengthened by improved manufacturing in food, beverages, and motor vehicles) and trade (motivated by retail, motor trade, home economics, and accommodation). Mining and funding, as well as real estate and business services, were the two industries that experienced a reduction in business activity.

Figure 3.2 Industrials Performance for Fourth Quarter of 2020



Source: Statistic South Africa, 2020

The positive growth recorded in the third and fourth quarters was not sufficient to counterweight the depression bearing of COVID-19 in the second quarter when lock down constraints were at their greatest rigour, and this negatively affected the entire economic activity in 2020, with a decrease of 7.0% compared with 2019 (Stats South Africa, 2020). If the data is correct, this is the country's greatest annual drop in economic output since at least 1946. To provide some perspective, the second biggest fall was recorded in 1992, when the economy contracted by 2.1%.

The country was in the midst of a two-year slump at that time because of a global economic recession. Moreover, the economy contracted by 1.5% in 2009 during the financial crisis.

GDP per capita peaked in 2014, adjusted for inflation, but ever since has been deteriorating. This is the claim that pecuniary growth has been failing to keep up with population growth. GDP, on the other hand, fell in 2020 to stages last realized in 2005. Food production, on the other hand, escaped the pandemic's upheaval largely unscathed, increasing by 13.1% in 2020. All other manufacturing took a beating. Prior to the pandemic, the construction business was already having trouble, with a 20.3% contraction. This is manufacturing's fourth year of economic deterioration in a row (Stats S.A, 2020).

According to a report cited in an article covering the GDP outcomes for the second quarter, the decline in the level of air travel added to the narrowing in the transportation and communication industries. Operators of rail and road freight shipments see themselves constrained as well. Because of the restrictions placed during the second year on the production and movement of numerous goods, manufacturing production was down for the whole year, regardless of a strong showing in the fourth quarter of the year by declining 11.6%. This might, however, be because of strikes in the second sector and as a result of a reduction in demand for steel, in the middle of other causes (Statistics South Africa, 2020).

3.3 South Africa's Investment Climate and Business Environment

South Africa stands out as a country with the most advanced, broad-based economy. Stable institutions, an independent judiciary, and a robust legal sector committed to upholding the rule of law, a free press and investigative reporting, a mature financial and services sector, good

infrastructure, and a broad selection of experienced local partners excite the investment climate in South Africa. According to the World Economic Forum's Global Competitiveness 2019 Report, South Africa has regained momentum following the recent political landscape shift and has jumped seven places to number 60 out of 141 nations. Because of its low scores in various economic and human development categories, South Africa's overall position is dismal. For example, the high incidence of homicides ranks 135th out of 141, the low rate of ICT adoption ranks 89th out of 141, and the skills gap ranks 101st out of 141. According to the World Economic Forum, South Africa is one of the most supremely capable nations on the planet, with high wealth inequality that has been rising over time. High wage inequality emerges from a polarized labor market. However, if the suggested reforms are implemented and accepted, the general atmosphere for investment and job creation in South Africa will improve (Investment Climate South Africa, 2020).

Second, South African investment has revealed two characteristics: first, a lasting degeneration since the mid-1970s; and second, a high level of short-term instability. Investment expansions have been followed by contractions, indicating that the nation has been incapable of sustainably sustaining gains in investment. Domestic ventures in the country maintained a consistent rising trend until the mid-1970s, peaking at 29.7% in 1976, and have been steadily declining since then. Investment declined from a peak of 26.4% of GDP in the 1970s to 23% in the 1980s and has only averaged 15.6% of GDP in the post-apartheid era for the last ten years (Ndikumana, 2005).

Furthermore, since the 1970s, the pace of wealth amassing has decreased in all sectors, but it has been further pronounced in selected sectors. The rate of capital accrual in the facility sector has decreased from over 10% in the 1970s to less than 1% in 2002. According to Roberts (2004), industrial investment has improved during the mid-1990s, but the recovery has been unbalanced.

Iron and steel, non-ferrous metals, and basic chemicals (Ndikumana, 2005) were the key contributors to the economy's improvement.

However, agriculture has suffered a fall in capital accumulation in the years after the early 1980s. Furthermore, statistics revealed that, since the mid-1980s, private investment has demonstrated a modest but sturdy recovery. State investment has gradually declined from 11.5% of GDP in 1976 to 4% in 1994 and then to 5% in 2004. South Africa's public investment, on the other hand, was higher than the sub-Saharan average up until 1986, when it began to decline and eventually fell below the SSA middle-income nations' average (Roberts, 2004).

The real gross domestic product (GDP) per capita has decreased since 2015 (SARB, 2018). Furthermore, Kreuser and Newman (2018) as well as Aterido et al. (2019) testified that the slow growth in productivity still appears to be slowing. Recently, the unemployment rate has increased from existing high levels (Statistics South Africa, 2017) and inequality, on the other hand, keeps on increasing (Wittenberg, 2017).

The economy of South Africa is currently unsustainable. Poverty and inequality are exacerbated by slow economic growth. Inequality rises, which exacerbates social disintegration (Putnam, 2007), and all of these factors pose a threat to economic progress. It is obvious that inequality contributes to extremely different views, which makes compromise difficult. To address South Africa's economic issues, immediate focus must be paid to initiatives that would improve the country's potential growth. According to recent estimates, South Africa's growth rate is low and has been declining for some time. As a result, a sustainable economic trajectory for South Africa is required, as well as a series of reforms to boost the country's potential growth rate (National Treasury, 2018).

Economic transformation initiatives must pass both the sustainability and intergenerational equity standards. As a result, economic transformation must be carried out in such a way that it does not jeopardize our economy's long-term potential to compete in global product and labor markets. That is to say, our focus must be on policies that promote economic transformation, comprehensive growth, and competitiveness, as this will aid in the development of the most effective plan for addressing unemployment, poverty, and inequality.

Economic transformation refers to a significant and quick shift in the ownership and control systems that govern the economy. The primary motivation for this transformation is for South Africans to live productive, prosperous, and dignified lives. Unfortunately, a number of reasons are preventing the South African economy from truly reforming (National Treasury, 2018). Low growth hinders the economy's ability to transform since it jeopardizes the government's ability to maintain important social spending as well as the general progress of tax and fiscal policy.

Low growth, on the other hand, can prevent the counter-cyclical policy of both tax and fiscal policy, which could have been positioned as another way of increasing aggregate demand. Only by constructing an economy that is globally competitive can we accomplish economic transformation and inclusive growth. This means that pursuing an agenda of economic reform and inclusive growth cannot jeopardize a small open economy's long-term competitiveness, as it must sell goods and services to the remainder of the globe and attract investment to fund its own monetary prosperity.

However, in order for South Africa's potential growth rate to improve, lasting, maintainable growth requires essential building elements, such as refining scholastic results across the cycle of schooling and increasing the relevance of teaching systems by better aligning learning outcomes

to labour market needs. Second, there is a need to implement adolescent job interventions, such as teaching chances that will eradicate obstacles to entry into the labour market place, as well as traineeships that are constructed on near collaboration amongst mechanical, professional, and other teaching organizations and the "private sector to ensure that training needs are demand-driven" (Bhorat et al., 2014). Finally, in order to boost the rate of economic growth, sustainable cities and inclusive transportation networks are required. This can help reduce inequality and enhance growth by addressing inherited spatial legacies (SACN, 2014).

"It is obvious that a combination of short- and long-term measures will be required to address the fact that the South African economy is severely skill-constrained," Levinsohn (2008) observed. Above all, it is thought that a stable macroeconomic policy is necessary for long-term economic growth (Faulkner et al., 2013). Inflationary pressures, unsustainable debt levels, and unpredictability in exchange rates and financial markets can emasculate an economy's potential to be altered and impede its ability to develop fully. Growth reform is more effective when combined with macroeconomic policy that emphasizes fiscal stability, a flexible exchange rate, and a credible inflation target (National Treasury, 2019).

Nonetheless, to accomplish economic transformation, inclusive growth, and attractiveness, network industries such as transportation, electricity, water, and communications must be modernized in order to boost competitiveness and inclusive growth. These industries are known to be the backbone of the South African economy and are critical for long-term growth and global competitiveness. According to the World Bank (Minges, 2016), a 10% increase in fixed broadband penetration leads to a 1.35% increase in GDP growth in developing countries and a 1.19% increase in developed economies, according to the World Bank (Minges). Many challenges face South

African network industries, including a lack of resourceful economic regulation (which can lead to ineffective investments), old and inefficiently maintained infrastructure, and poor management of state-owned companies with austere governance challenges that put a strain on the fiscus.

Enhancing competition by encouraging the expansion of smaller businesses, the entry of new businesses, and increases in innovation and productivity is another strategy to achieve economic transformation. By lowering consumer prices in markets that are crucial to low-income households, combating anti-competitive behavior and eliminating government limitations on competition can have a large distributional impact (Aghion et al., 2008). Another component is labor-intensive growth, which aids in the reduction of unacceptably high unemployment rates. In the first quarter of 2017, the South African economy did not provide enough job opportunities to match the growing labour force, which expanded by 1,029,000 (4.9%) year-on-year (Statistics South Africa, 2017b). However, this pushed the jobless rate up to 27.7%, the highest level since September 2003. (National Treasury, 2017).

Another strategic policy priority area to increase competitiveness is executing a focused and flexible industrial and trade strategy to facilitate long-term growth. Above all, South Africa's ability to completely harness global and regional value networks necessitates more exports and improved export competitiveness, which necessitates improved integration into global and regional value chains. The alignment and sophistication of a country's exports are crucial to its development. Exports allow businesses to gain access to a larger market, allowing them to gain because of efficiencies of scale while also contributing to growth and employment. It also helps to generate the foreign currency needed to support imports. In recent years, the export enactment of

South Africa has been poor (Pieterse et al., 2016). Since 2011, South Africa's proportion of global exports has fallen by 15% because of its poor performance.

When comparing South Africa with its peers, it is obvious that the country lags behind. For instance, South Africa does not compare favourably with countries like Brazil, India, Indonesia, and Turkey. The easing of economic sanctions and the re-integration of the South African financial plan into the global market are the key reasons for the improvement in South Africa's economic advancement performance. However, the easing of trade sanctions is credited with this growth. The volume of exports plus imports climbed by 65% between 1991 and 1998. This, however, serves as a greater accomplishment in productivity because of greater global competition, and this was achieved because of stimulating financial approval, which made a critical difference (UNCTAD, 2020).

This was made feasible by South Africa's unrestricted access to foreign capital, as well as its ability to leave room for a recent account shortage in the balance of payment. However, the current account surplus averaged 1.6% of GDP in the five years preceding 1994, while the deficit averaged 1.2% of GDP in the following five years, indicating a 2.8 percentage point reversal. Since then, it has improved even more, now accounting for more than 6% of GDP (Laubscher, 2013).

Another explanation for the economic growth performance since 1994 is the persistent acceleration of private investment, from 8% of GDP in 1992 to 14% of GDP in 2008. After that, it began to decline to 13% of GDP due to the recession. However, for the achievement of growth performance, there is a need for black economic empowerment, affirmative action, and stricter labour legislation, which will stand as an imperative for stability.

Another aspect that has changed over the last 20 years is the relative prominence of various economic sectors. For example, new businesses such as the cell phone industry have increased the contribution of transportation and communication to GDP. The percentage has risen from 6.7% in 1993 to 10.1% in 2012.

The goal of the Investment Climate Assessment (ICA) in South Africa is to assess investment in the country in its entirety in order to encourage policies that would reinforce the private sector. The investment climate is fabricated of elements that are distinctive to a certain location and provide possibilities and incentives for businesses to be productive, generate employment, and expand. These determinants comprise macroeconomic and control strategies, the rule of law, possession privilege protection, and the strength of backup institutions, both physical and financial. Data on firm productivity, the cost of doing business, the regulatory environment, the labor market, the financial sector, the trade regime, and levels of investment are among the topics covered in this study. South Africa's investment climate and performance may be compared to those of enterprises in more than 70 small- and medium-income nations, as reported by the survey (World Bank, 2021).

To open the economy, space must be made for monetary and fiscal stimulation, as well as ambitious structural reforms backed by social partners. Growth has been slow in recent years due to weak consumer demand, a steady decline in business investment, policy uncertainty, and a prolonged lack of evaluation activity. of the economic slowdown (National Treasury, 2017), unemployment and income inequality have been pushed up.

Despite the opportunities offered by regional integration to South Africa, economic integration in the sub-region has not improved much (SADC). In the Southern African Development

Community, intra-regional trade still remains at 10% of total trade when compared to about 25% in ASEAN or 40% in the European Union.

There is a need for improvement of existing SADC protocols as this will increase integration and, hence, provide jobs. In addition, trade costs will be reduced in the region if there is a decrease in non-tariffs by improving customs procedures by simplifying rules of origin (OECD, 2017). Another barrier to economic growth performance is weak infrastructure and institutions with barriers to competition, which limit industrial development.

The economy of South Africa faces serious structural challenges. Monetary policy support is limited by high inflation. Public spending is limited by high public debt investment and business confidence is constrained by political uncertainty and weak competition. South Africa's economic potential must be boosted through structural reforms. OECD economic studies of South Africa have assisted in many measures aimed at increasing competition in the economy (2013, 2015) in order to minimize the size and influence of state-owned businesses (SOEs) on the economy as well as improve the educational system's quality (Fall et al., 2015).

The country's current account deficit has lessened because of sluggish growth and a reduction in imports. Previously, rand appreciation in late 2016 boosted terms of trade, reviving international commodity prices (OECD, 2017).

The South African economy is still gathering steam slowly while global growth accelerates. As of 2017, the primary sector, particularly agriculture and mining, was the key driver of growth in South Africa, while other sectors were considered poor. This shows that South Africa has strayed from the global growth path. This is due to the fact that the government has mostly focused on exporting

commodities, which are primarily raw materials with little international significance. South Africa, however, has limited global growth opportunities besides parts of the service sector (Fournier and Johansson, 2016).

Since 2017, the business cycles have been building up momentum, boosting corporate and consumer morale prior to 2018. On the other hand, this may return the investment needed to make the country's businesses more reasonable, spread machinery, link universal resource chains, and overcome its historic economic seclusion (World Bank, 2018).

Because of the slow progress of economic reforms and the new executive's policy pledges, the wave of optimism that greeted Ramaphosa's accession to the presidency is dissipating. "The Business Confidence Index (BCI) of the Rand Merchant Bank/Bureau for Economic Research (RMB/BEER) provides an indication of the general view of firms in South Africa." It plummeted to a 20-year low of 21 in the third part of 2019. "Not even during the height of the global financial crisis in 2009 have executives been this pessimistic," the BEER said (Investment Climate South Africa, 2020).

However, confidence has shifted in four of the five sectors that make up the BCI, causing concern within the business community in South Africa. It was discovered by the BEER that the motor trade was the only sector that had shown an improvement, and even with that, the index was still low (Investment Environment in South Africa, 2020). According to the Global Bank Rankings and Ease of Doing Firm Score, South Africa ranks 82 out of 190 nations, which does not reflect the mature nature of its economy. This is due to its poor score when starting a business (Investment Climate South Africa, 2020).

Business and civil society pledged R664 billion in investment pledges at government-hosted investment conferences in 2018 and 2019, providing a vital input to President Ramaphosa's newly announced South African Economic Reconstruction and Recovery Plan. To get the economy back on track, the administration is mobilizing both the public and private sectors.

President Ramaphosa made a promise at the opening ceremony of the South African Investment Conference (SAIC) in 2018 at the Sandton Convention Centre, where he stated that South Africa would spend \$100 billion on the country over the next five years. In the midst of global pessimism, "this is an opportune time for South Africa to demonstrate to investors that it can secure and increase their investment," as the Director-General of the Government Communication Information Systems, Phumla Williams, spoke out in support of the president.

The COVID-19 pandemic has wreaked havoc on businesses and communities all over the world, and South Africa is not left out. At a significant cost to the country's economy, South Africa has mitigated the health effects of the COVID-19 pandemic on its inhabitants by adopting one of the tightest economic and social lockdown restrictions in the world. According to a 2020 survey of more than 2,000 South African businesses conducted by Statistics South Africa, over 8% of respondents had permanently ceased operations, while more than 35% reported temporary layoffs. South Africa's GDP is expected to rise at a rate of 3 to 7% this year, according to experts (Investment Climate South Africa, 2020).

According to the research, "South Africa continues to fight its way back from a lost decade in which economic development stalled, partially as a result of exploitation and economic maladministration under its former president." South Africa is dealing with a number of difficulties. Just a few examples include establishing policy conviction, implementing controlling

monitoring, and transforming state-owned enterprises (SOEs) into productive firms rather than recipients of government funding; lowering violent crime; upgrading basic infrastructure; increasing the delivery of government services; removing widespread corruption; addressing labor discontent; enhancing job creation while shrinking the state's size; and improving the supply of adequately skilled personnel (Mudenla, 2012).

In his address to the nation in October 2020, President Cyril Ramaphosa announced a package of assistance valued at R500 billion, or around 10% of GDP, the largest on the African continent when compared to other G20 countries. In addition, special COVID-19 subsidies worth nearly R40 billion have been awarded to assist almost 17 million people from low-income households. This award signifies a substantial accomplishment, reaching over 6 million jobless people in a relatively small amount of time (government of South Africa, 2020). Additionally, 960,000 businesses have benefited from the UIF salary assistance system, subsidies, and credits supplied by several management units and community institutions. Over 4 million employees have collected over R49 billion in remuneration sustenance, allowing them to keep their occupations even when the company is unable to function.

Apart from the firms that have received direct assistance, numerous businesses in the region have benefited from R40 billion in tax relief initiatives. In order to preserve businesses from bankruptcy and protect jobs, the government created a R200 billion loan guarantee scheme. This scheme has made R16 billion in low-interest loans available to nearly 12,000 enterprises. Individuals and industries have also received another R34 billion in debt relief from banks. The government is therefore working hand-in-hand with the banks to see that more companies have access to this assistance and to make sure that this scheme is being realized (Republic of South Africa, 2020).

Despite government efforts, the pandemic has wreaked havoc on an already weakened economy, livelihoods, jobs, public finances, and state-owned enterprises. Over 2 million people lost their jobs in the second quarter of 2020. When compared to the previous quarter, the economy shrank by 16.4%. Through rigorous and detailed engagement over the last six months, the South African Economic Reconstruction and Recovery Plan builds on the common ground established by the social partners—government, labour, business, and community organizations."

"The third South African Investment Conference (SAIC) will expand on investment that was attracted during the first and second investment conferences, which yielded investment projects worth over \$42 billion," said President Cyril Ramaphosa in his November 2020 speech. Some of these projects are finished, while others are still in the works. Despite South Africa's poor economic growth as a result of the COVID-19 pandemic, the initial goal of attracting \$100 billion is still on track since the government has already received half of the planned investment. However, the SAIC and monetary data may not be sufficient to reassure unemployed people and others who have been pushed into poverty as a result of the lockdown. However, South Africans should be comfortable that this investment effort, together with many other initiatives underway to boost the economy, will go a long way toward ensuring a secure and prosperous future for all citizens (Mail and Guardian, 2020).

South Africa has taken a number of specific steps to establish a favourable investment environment, with a focus on simplifying the costs of doing business and combating corruption. The government has taken steps to address discourse concerns at major state-owned companies in order to improve South Africa's competitiveness as a country. Furthermore, certain significant

issues that investors have cited as a barrier to conducting business in South Africa are being addressed.

President Ramaphosa's economic reconstruction and recovery plan has begun to take shape, based on a partnership between government, labour, and business. The restoration plan also focuses on creating a favourable business and investment environment that will attract both foreign and domestic companies. Investors choose to invest in a country that is free from corruption and that is economically stable. As a result, South Africa has put in place a number of specific measures to deal with acts of misconduct in a transparent manner in order to build public trust and investor confidence (Mail and Guardian, 2020).

Despite structural issues, South Africa remains a favorable investment destination for Americans. The vibrant business community is market-driven and a key engine of economic progress. South Africa continues to draw investors because it offers a variety of chances for those wanting a low-risk site in Africa where they can obtain the island with the world's fastest expanding consumer market (Investment Climate South Africa, 2020).

Despite the COVID-19 pandemic, which has resulted in a slowing of South Africa's economic growth, the initial objective of \$100 billion is still on track, as the country has already received half of the intended investment amount. Despite the global economic downturn, investors still have the chance to develop their investments in South Africa, which has strong and stable banking and infrastructure, as well as well-established and sophisticated economic sectors. Nation News, 2021: South Africa stands out as a great place to start doing business and investing (Nation News, 2021).

As Ramaphosa stated last week, on February 21, 2021, South Africa has taken a number of concrete steps to foster a favorable investment environment, with an emphasis on making doing business easier and combating corruption. The government has taken initiatives to improve South Africa's competitiveness as a country by addressing difficulties at major state-owned enterprises. To reaffirm the importance of investment in South Africa, President Ramaphosa has focused on fostering a favourable business and investment environment that will continue to attract both foreign and domestic investors, emphasizing that full engagement of the private sector is required. To ensure this, South Africa has introduced a number of practical measures to deal harshly with acts of wrongdoing in order to improve public trust and boost investor confidence. The government has discovered that investors prefer to invest in a country that is free of corruption and economically stable (Mail and Guardian, 2021).

Furthermore, the government has built an open tendering system that will aid in the introduction of openness and accountability to the entire tendering process. On the other hand, South Africa was granted admission to the Africa Continental Free Trade Area (AFCFTA), whose goal is to build the world's largest free trade area by bringing together 1.3 billion people from 55 nations with a total gross domestic output of R7 trillion. This is a tremendous opportunity for both the continent and global investors. On the other hand, South Africa is prepared to go to any length to maintain a favourable investment climate and believes that the economic benefits will spread to other African markets (Mail and Guardian, 2021).

There have been two such summits hosted during the month of November since President Cyril Ramaphosa launched his investment drive in 2018 with the goal of bringing in R1 trillion in inward investment to kick-start South Africa's economy. They have both been tremendously successful.

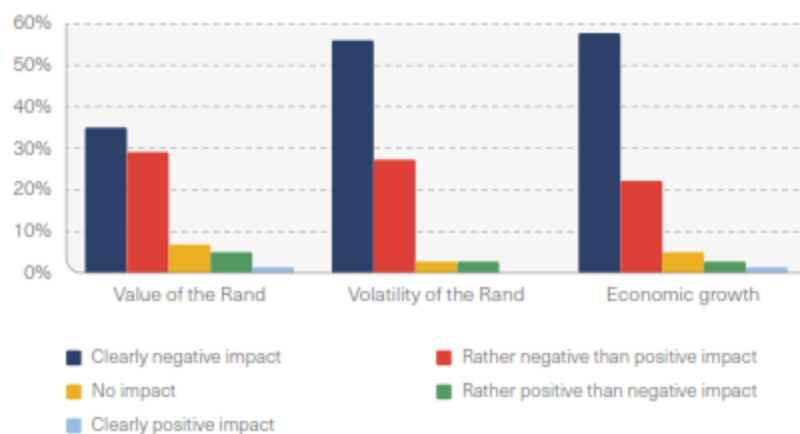
Both the November 2018 and November 2019 events resulted in approximately R360 billion in investment promises across a variety of sectors that we need to revitalize and grow if we are to turn the economy around. (Mail and Guardian, 2020).

The current 2019 EU Business Poll adds to the picture by focusing on the views of EU companies operating in South Africa. Despite the progress made by businesses, polls reveal that they are still facing obstacles in the business environment. The World Economic Forum (WEF) reports that the macroeconomic climate hampered economic performance, with insufficient aggregate demand and the deteriorating value and volatility of the Rand identified as particularly problematic. The scenario is unlikely to change anytime soon, according to economic estimates from the South African Reserve Bank and the World Bank, which both predict growth of less than 1% this year (Investment Climate South Africa, 2020).

High levels of criminality and pervasive corruption in both the commercial and public sectors have imposed significant costs on EU businesses. However, the South African labour market continues to be a source of concern. The low level of productivity is not the only concern; rather, the country lacks suitable skilled labor, and this constrains the growth of companies.

When compared to the 2016 Business Survey, the business outlook for South Africa as an investment destination in 2019 has remained largely negative. EU enterprises do not expect the situation to alter in comparison to the 2016 and 2012 surveys, and the challenges have not changed at all (Investment Climate South Africa, 2020).

Figure 3.3 Macroeconomic Framework



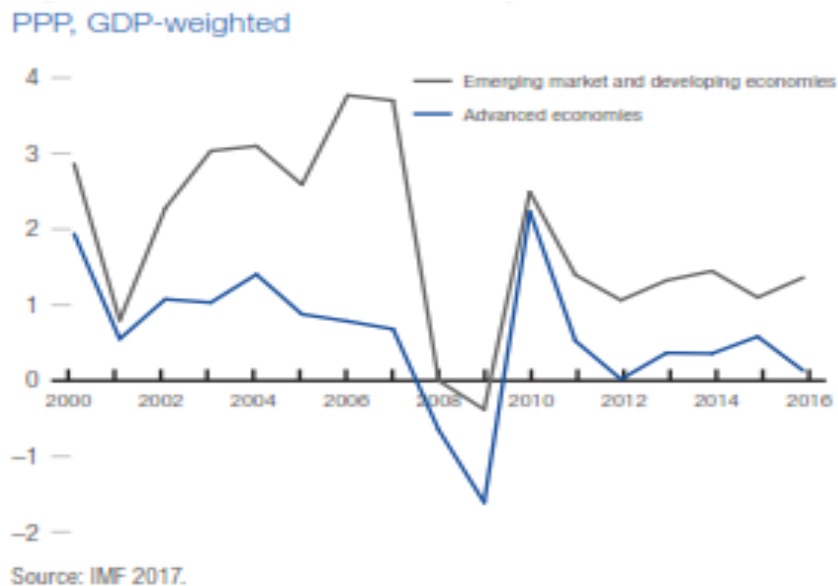
Source: Investment Climate South Africa

Despite the fact that the global economy is improving, economic policy remains a problem. "Major technological disruption and new fault lines emerging in the global economic and political order add further uncertainty about the types of policies that will make economies future-proof," says the report. However, the Global Competitiveness Index (GCI) lags behind the implementation of close to 140 countries on 12 competitiveness pillars. Based on empirical and theoretical studies, the elements and institutions have been recognized as influential boosts in productivity, which in the long run acts as the key determinant of long-term growth and is an indispensable factor in economic growth and prosperity. As a result, the Global Competitiveness Report aims to assist decision-makers in addressing the complex and multifaceted nature of the development challenge in order to develop superior policies based on public-private collaboration and to take steps to instill confidence in the possibility of unrelenting economic growth (World Economic Forum, 2018).

As a result, in order to strengthen the drivers of competitiveness as outlined in the GCI's 12 pillars, there is a need for coordinated action by the government, business, and civil society. Economic advancement is confronted by three challenges: public-private collaboration, policy action, and innovation. The first is financial vulnerabilities, which endanger competitiveness and an economy's ability to support innovation and technological adoption. Second, even while emerging economies are improving their innovation capabilities, more can be done to spread the gains. Finally, in the Fourth Industrial Revolution, labor market flexibility and worker protection are required for competitiveness and shared prosperity (World Economic Forum, 2018).

It is agreed that economic growth is crucial for human development and well-being. Growth generates the resources required for improved education, health, and security, as well as increased earnings. There are no countries that improve the welfare of their citizens without growth, even though growth cannot guarantee human development. Actual growth, potential growth, and trend growth are the three types of growth in the economy. Actual growth is the change in GDP over time, which is influenced by changes in aggregate demand and the efficiency of the economy's resources. Potential growth is defined as an increase in the amount and quality of resources in the economy that can occur without actual growth. Finally, trend growth refers to the predicted rise in potential output over time, and it is a measure of how quickly an economy may expand without taking inflation into account (Grant and Vidler, 2000). Despite technical advances, advanced and emerging markets appear to have witnessed a productivity slowdown.

Figure 3.4: Total Factor Productivity 2000-



The figure above explains how both advanced economies and emerging markets' total factor productivity have declined on average since the financial crisis. There are many arguments about the possibility of the productivity slowdown. Some say there are differences between the technologies of today compared with the productivity potential of the past. Another reason for the productivity slowdown is that conventional GDP calculation fails to account for much of the value created in recent years (World Economic Forum, 2018).

3.4 Investment Promotion Initiatives in South Africa

Private and public investment performance has been poor since the second part of the 1970s. Between 1993 and 2002, total investment as a percentage of GDP increased by only 1.3% on average in real terms. There are numerous factual and policy reasons why investment should be at the forefront of the discussion about how to boost GDP and jobs. According to Levine and Renelt

(1992), investment is the most important predictor of economic growth, particularly equipment investment (De Long and Summers, 1991). According to Easterly and Rebelo (1993), both private and state investment are important determinants of cross-country disparities in long-run economic growth. However, empirical data has led observers to infer that the relationship between investment and growth has identified low investment as one of the primary drivers of weak growth, particularly in emerging nations and particularly in African countries (Collier and Gunning, 1999; Greene and Villanueva, 1991).

Above all, private investment in South Africa deserves serious consideration for three reasons. For starters, sustained growth in private investment will demonstrate the private sector's confidence in public policy, both in terms of policy direction and the long-term viability of policy reforms. Second, sustained growth in private investment is a reflection of public investment efficiency, particularly in terms of lowering the cost of private investment and thereby increasing profitability. Third, persistent growth in private investment acts as a stimulant for attracting foreign direct investment since it is an indicator of strong returns on investment and reduced investment risk in the country (Ndikumana, 2005).

As an investment destination, South Africa has immense potential. The government is committed to a stable, investment-friendly macroeconomic strategy, and the economy has performed well in recent years (Bagus, 1999). Vale Columbia Center (2009) elaborates that investment promotion schemes can be achieved through several processes such as strategy formulation, organizing the institution, investor targeting, investment facilitating, as well as aftercare and advocating of policy (Wentzel and Steyn, 2014; Nielsen, Asmussen, and Weatherall, 2017). In addition to this, there are several other national entities that are playing a role in investment promotion, such as

presidential envoys who have apparently met more than 150 local and international business leaders both in South Africa and overseas since April 2018. The Industrial Development Corporation (IDC) is another national entity that has the progress of investment in hand. They are apportioned a temporary responsibility by the Presidency to be the core secretariat of the October 2018 investment IMC and to be the Presidential Investment Envoys. The Inter-Ministerial Committee (IMC) is another entity that has traditionally met every 6 months to discuss investment-related issues. They are working in close collaboration with South Africa Investment and IMC at the October 2018 Conference to make clear those things which some investors find confusing.

Investment promotion, according to Wells and Wint (1990), is defined as activities that a government or organization does to attract FDI. This can take the form of "advertising, investment seminars, direct mailing, participation in trade shows and exhibitions, investment missions, literature distribution, one-on-one direct marketing efforts, preparation of itineraries for prospective investor visits, matching prospective investors with local partners," and, among other things, preparing project proposals, completing feasibility studies, obtaining permission and approval from various government authorities, and providing services to the investor once the projects are operational" (Kumar, 2003; Hampton, 2006).

The DTIC plays an important role in the promotion of economic development and has a major presence in the global trade environment. It achieves this by seeking to create a fair multilateral trading system that promotes growth while also strengthening trade and investment ties with major economies. DTIC recognizes the importance of encouraging trade and inward investment, as well as developing trade and investment relationships. It is built on increasing exports and leveraging

global growth for South Africa's economic development by forming collaborative arrangements with existing trade partners and dynamic, fast-growing new markets (DTIC, 2020).

On macroeconomic policy, notably the Growth, Employment, and Redistribution strategy (GEAR), there has been strong disagreement from many sides of the political spectrum. This is because GEAR is linked to crucial concerns such as job creation, inflation, and, most significantly, economic growth. GEAR is frequently cited as a policy responsible for rising poverty levels in many developing countries. It is regarded as a version of the International Monetary Fund's structural adjustment program. Pillay (2000) argues that GEAR is a proponent of ensuring macroeconomic stability in order to attract investment and stimulate growth.

South Africa's ANC government implemented a macroeconomic policy philosophy after democratization in 1994 in order to establish and grow the economy, which had been under siege since the late 1970s under apartheid, and to address the problem of unemployment, which was at the root of poverty and inequality in the country. The ANC, however, first implemented this ideology in 1994 with its new strategic plan, the Reconstruction and Development Programme (RDP).

According to Brits (2014), the African National Congress (ANC) shortly before the 1994 elections launched the RDP, which was an inclusive and very ambitious national project. The objectives of the RDP were exclusively linked to privatization, liberalization, and convertibility (Marais, 2001). According to Cling (2001), the RDP was successful in several sectors, such as social security, where the government developed a broad welfare system. There was also a free health-care system for pregnant women and children, as well as free lunches for between 3.5 million and 5 million children. Five hundred new clinics were built to ensure that five million more individuals have

access to medical care near their homes. Furthermore, the electrical network was expanded to over two million additional dwellings, bringing the total number of people with access to electricity to 63 percent (Cling, 2001). Luiz (2007) stated firmly that the RDP's implementation was far from straightforward.

In 1995, the White Paper on the Construction and Development Programme proposed five major policy programmes. The goals were to build a robust, vibrant, and balanced economy, as well as to improve human resource capability for all South Africans, to ensure that no one is discriminated against because of their race or gender, and to establish a thriving and balanced regional economy in Southern Africa. In addition, it is intended to democratize both the state and society. In truth, the policy goal was to address and correct apartheid's hereditary enormous inequities on economic, social, and spatial levels. According to the RDP's original 1994 White Paper (SAHO, 2019), the ANC administration sought "to mobilize all our people and our country's resources towards the eventual elimination of apartheid and the development of a democratic, non-racial, and non-sexist future."

However, after two years, the RDP, particularly a national macroeconomic upliftment programme, was out of control due to a lack of economic growth to fund it, as well as the public administration's inability to implement it and some other intra-organizational flaws, such as the ANC's own policy coordination and execution abilities. Furthermore, the integrity of the public workers was questioned, and to top it off, there were insufficient resources. The RDP fund of R2.5 billion, or 2% of GDP, was insufficient to address the backlog in providing infrastructure and services to the poor (Brits, 2014; Luiz, 2007; Wallis, 1995).

Despite the fact that the RDP was regarded as the cornerstone of government development policy, it did not produce as expected, particularly in the area of economic growth, which cast a bad light on the policy. Other issues include RDP's concentration on fiscal efficiency and the reorganization of existing revenues while ignoring the collection of new taxes (SAHO, 2019).

In addition, RDP policies lacked the ANC government's ability to rank them, which was supposed to participate in and guide them towards socio-economic policies. This stands as another factor (Mosala, Venter and Bain, 2017). As a result, in the face of severe currency depreciation and associated volatility, Minister of Finance Trevor Manuel introduced the Growth Employment and Redistribution (GEAR) strategy in parliament on June 14, 1996, with the announcement that the policy's parameters "weren't negotiable at this stage" (Abedian and Ajam, 2009).

As a result, in 1996, the South African government published the Growth, Employment, and Redistribution (GEAR) paper, which established the country's macroeconomic strategy. However, the approach included a number of traditional policy measures aimed at increasing investment and labor-intensive growth (Gelb and Black, 2004).

According to Jaffery (2010), the government confirmed that the GEAR strategy was based on the RDP. Furthermore, according to Jaffery (2010), GEAR was implemented as a plan to rebuild and reconstruct the economy "in keeping with the aims set forth in the RDP," implying that it was based on free market principles with a heavy emphasis on economic growth (Brits, 2014). According to the Department of Finance (1996), the GEAR paper emphasized that the key to achieving an equal distribution of income and improving living standards for everybody was rapid economic growth coupled with stronger job creation. Furthermore, the Department of Finance (1996) stated that job creation is a powerful tool for redistribution when combined with

government housing, water and sanitation, health, education, welfare, and social security services (Mosala, Venter and Bain, 2017).

When it became clear that the 3 percent broadening path would not be sufficient to achieve job formation, the GEAR plan aimed for a 6% growth rate and the creation of 400,000 jobs per year by 2000, not to mention the necessary expansion in social services, transportation, and a reasonable flow of salary and affluence. Furthermore, GEAR set an additional severe budget shortage target of 3% by 1999, down from 4.5% in 1994. Furthermore, the Department of Finance claimed in 1996 that the GEAR plan paired savings with greater government investment to avoid government dissavings (Mosala, Venter and Bain, 2017).

GEAR was completed quickly, and both the local and international business sectors appreciated it. The economic impact of GEAR was found to be mixed. According to Habib (2013), GEAR ensured that South Africa's financial situation was reinforced by ensuring that interest rates and inflation were kept under control. Furthermore, the budget deficit was only 2.2% of GDP, import tariffs were less than the expected 7.6% of the value of imports, and state-owned company (SOC) investment grew at a rate of 13.6% each year (Luiz, 2007).

GEAR, on the other hand, failed miserably in other areas. According to Habib (2013), the fiscal increases came at a demoralizing social price: the heights of variation and lack soared drastically following the adoption of GEAR. Furthermore, GEAR promised a 6% increase but did not exceed 5%, and was even followed by a 30% increase in job losses (Gevisser, 2009). GEAR claimed that the advantages of economic progress would trickle down, but they never did. As a result, the Accelerated and Shared Growth Initiative South Africa (ASGISA) superseded it in 2006.

Deputy President Phumzile Mlambo-Ngcuka broadcast ASGISA in August 2005, and it was launched the following year. According to Anon (2006), the program's major goal was to reduce poverty and joblessness. According to the Millennium Development Goals, by 2014, the world's population in poverty would have shrunk by half (MDGs). Not only that, but it also aspired to boost the country's economic growth and job opportunities. To help it accomplish this goal, the government aimed to support an average annual growth rate of at least 4.5% from 2005 to 2009 and then enhance it to at least 6% from 2010 to 2014. "GEAR's intended trickle-down effect was able to be underlined by ASGISA. Furthermore, the state promised to increase public spending on fixed capital investment to R370 billion over three years and step up its interventions to reduce inequality and assist the marginalized poor, which will help to close the gap between the first and second economies, eventually eliminating the second entirely (Jeffery, 2010).

Furthermore, under ASGISA, the government would be able to circumvent binding limitations. It was impossible to assess ASGISA's success over a short period of time. The effort had some success, as seen by the infrastructure program, which included public sector spending, which increased from 4.6% of GDP in 2006/07 to 9.6% in 2009/10. Mbola (2009).

Despite this, unemployment and poverty levels remained unchanged or even deteriorated when the South African government approved ASGISA. Therefore, the New Growth Path (NGP) superseded ASGISA after the end of Mbeki's presidency.

President Zuma declared the New Growth Path in his State of the Nation Address (SONA) in 2010. (NGP). According to NGP, South Africa's only problems are mass unemployment, poverty, and inequality (Morris, 2013). Its goal was to address all of these issues by boosting the nation's economic development (Morris, 2013). In consonance with Gumede (2012), the National Growth

Plan (NGP) aimed to increase job creation and cut unemployment by 10% by 2020 through a public infrastructure initiative. Not only that, according to Habib (2013), it is among the NGP objectives to reduce economic inequalities in South Africa. To accomplish these objectives, a strategy was established with two distinct objectives: "improving the livelihoods of people at the bottom of the economic ladder while temporarily and voluntarily reducing the income of the upper middle classes and elite" (Habib, 2013). However, in order to address the highlighted issues, the NGP advocated the following strategic principles:

- To establish a democratic and regional market by boosting employment, raising income, and adopting other steps to improve equality and income distribution.
- Changing the South African market for goods and services to focus on exporting to the region and other rapidly emerging economies.

The NGP, like its predecessor, emphasized infrastructure development as the only means of achieving employment and economic expansion. Aside from these, the NGP identified a number of other sectors where jobs may be created. Infrastructure and services industries, as well as the green budget, public services, and rural development, have all been cited as employment creators (Patel, 2011).

Nonetheless, due to the NGP's short duration, it is difficult to achieve its effectiveness. In contrast, the National Development Plan (NDP) was launched in 2011 and is positioned as a blueprint for addressing South Africa's problems. It was seen as a blueprint for South Africa. The NDP was accepted by the cabinet in 2012 as a long-term vision and plan for the country (National Science and Technology Forum, 2020). The NDP is the ANC government's most recent macroeconomic strategy, which steered economic growth in the proper direction to address the challenges of being

without a job, inequity, scarceness, and redeployment. The NDP plan was a lifelong strategy that spanned the years 2020 to 2030. Among these objectives are the creation of 11 million jobs by 2030, the abolition of wage-driven poverty, and the reduction of the skills gap. In addition, the Gini coefficient is expected to drop from 0.69 to 0.6 by 2030. More specifically, the NDP intends to work for a society devoid of corruption, solid observance of moral behaviour, and a regime that is answerable to its constituents (Gumede, 2012).

Furthermore, according to the NDP executive summary, "South Africa can achieve these aims through harnessing the energies of its people, establishing an inclusive economy, building capabilities, strengthening the state's capacity, and fostering leadership and partnerships throughout society." The National Planning Commission authorized the Vision 2030 summit on June 21, 2017, and its goals were:

- To promote and support investment opportunities in public-private partnerships in provincial and municipal government.
- To identify ideas, solutions, plans, and activities that can help accelerate the achievement of business and investor goals.
- To bolster private-sector and public-sector commitment to the NDP.
- To assess where we are, where we should be, and the best path forward for the country to realize its NDP goals.
- To raise understanding of the NDP's position in South Africa as a South African plan, not only a government plan.

- To make the NDP a practical document that is easy to grasp by laying out how government departments, provinces, municipalities, state-owned companies, and agencies are aligning themselves with it.

Nonetheless, the NDP faces issues. For example, according to an article released by the Human Sciences Research Council (HSRC) in November 2014, "The NDP did not address the underlying problems concerning unemployment because it was mute on industrialization." It stated that in order for the government to create decent jobs, it needed to reform the manufacturing sector, which would provide the correct mix of decent jobs and complement the services industry. Rather than industrialization, the NDP emphasizes small and medium-scale commerce in the services sector as key drivers of future economic growth, preserving the country's legacy of unskilled low-wage labor.

In addition, there are three important areas that are problematic: policy implementation, legislation enforcement, and service delivery (NSTF, 2020). However, the NDP was unable to challenge existing structures of economic ownership and control, as well as labour market deregulation, and therefore remained a neoliberal macroeconomic policy.

The DTI is involved in the global economic and trade environment and plays a vital role in the promotion of economic development. It achieves this by establishing an equitable multilateral trading system that accelerates progress and strengthens trade and investment ties with major economies. The Department of Trade and Industry understands the importance of encouraging trade and inward investment, as well as developing trade and investment relationships. It encourages exports by leveraging global growth for the development of the South African

economy by forming collaborative partnerships with current trade partners and fast-growing new markets.

The Industrial Development Corporation of South Africa Limited (IDC) was founded by an Act of Parliament in 1940 (Industrial Development Corporation Act No. 22 of 1940) and is wholly owned by the South African government. During World War II, the IDC was tasked with restoring trade between Europe and South Africa and developing indigenous industrial capability, particularly in manufactured goods (IDC, 2014).

For more than 70 years, IDC has aided in the implementation of South Africa's industrial policy, establishing industries such as petro-chemicals and minerals beneficiation, which are now considered cornerstones of the country's manufacturing sector, as well as industries in fabricated metals, agriculture, and clothing and textiles.

In the 1990s, IDC's mandate grew to cover investment in the rest of Africa. The first venture was the Mozal aluminum smelter in Mozambique, which developed a large industrial enterprise from around the world, especially in a country that had been ravaged by civil war for decades. The smelter proved the potential of large-scale operations in a region that is frequently overlooked by investors. Mining, agriculture, manufacturing, tourism, and telecommunications are examples of IDC investments in Africa.

IDC receives money from a variety of sources, including commercial banks, development finance institutions (DFIs), and others, as well as income from loan and equity investments and returns from mature investments. IDC's commitment was to continue to expand the country's industrial capacity and create jobs through industrial development. IDC's present efforts are based on the

National Development Plan (NDP), the New Growth Path (NGP), and the Industrial Policy Action Plan (IPAP).

IDC assists in the promotion of environmentally sustainable growth and the expansion of sectoral variety in order to increase local good production. Furthermore, through its SEFA subsidiary, IDC plays a key role in supporting entrepreneurship and assisting in the growth of the SME sector. Not only that, IDC funding is primarily derived from the private sector, but it also has a target relationship with various levels of government agencies and organizations in order to coordinate industry development. IDC assists the government in various areas related to its development goals, such as directing funds to research and management in order to accomplish certain outcomes. Furthermore, IDC assists in the promotion and implementation of initiatives in the rest of Africa in order to build and integrate value chains across the continent (Integrated Report, 2014). Their major goal, however, is to combine the strengths of several countries in the region to establish a diverse industrial base.

Nonetheless, despite modest economic progress, IDC faces several obstacles, such as the need to boost industrial development in order to facilitate employment creation. In addition, IDC's job creation facilitation decreased marginally, from 18,900 in 2012/13 to 18,200 in 2013/14. Due to a sustained drop in capital demand from distressed enterprises, the number of jobs expected to be secured fell from 4,000 to 1,300. Furthermore, at 18.2%, the impairment ratio as a proportion of the portfolio valued at cost remained high (IDC, 2014). In 1983, the Development Bank of Southern Africa (DBSA) was founded. It is considered one of Africa's premier development financial institutions (DFIs). The DBSA assists in the financing, project development, and implementation of support for South Africa's social infrastructure and economic growth. The

Development Bank of Southern Africa (DBSA) is a major development finance institution that is completely controlled by the South African government. DBSA's responsibilities include promoting economic growth and regional integration, as well as mobilizing financial and other resources from the national and international private and public sectors to support development projects and programmes in South Africa, SADC, and the African continent as a whole (DBSA, 2020).

In 2018, the Board sanctioned the development position of the DBSA. The position outlines the philosophy of the DBSA and forms the starting point from which the DBSA delivers on its mandate. The main objective of DBSA is to work towards economic growth and to discover innovative solutions to extend socio-economic development across the continent of Africa. The DBSA technique aims to work with the government's priorities, such as the National Development Plan (NDP) and the Sustainable Development Goals (SDGs), to promote broad-based growth. DBSA sees it as a duty to collaborate with the private sector and also government agencies and departments in order to drive the alliance needed for project success (DBSA, 2020).

The DBSA's project preparation unit has built on its success in developing a strong investment portfolio throughout the past fiscal years. During this time, 13 projects totalling R7.6 billion were approved for funding in 2015, up 18% from R6.4 billion in 2014, and an additional R24 billion is expected to be revealed from third-party sources. DBSA is currently evaluating projects worth R216 billion in the energy and transportation sectors.

When speaking during the announcement of the results, DBSA Chief Executive Patrick Dlamini said, "Despite a challenging operating environment, we generated a credible set of results in line with our objectives." The need for infrastructure development in South Africa and across Africa is

vital, and despite a sluggish economy and falling commodity prices, we at the DBSA are dedicated to filling the country's infrastructure gaps. "

The DBSA has continued to assist municipalities by providing infrastructure financing as well as planning and implementation support services. "We remain a crucial component of the national infrastructure system," Dliamini correctly stated, "contributing to the deployment of government infrastructure programmes and enhancing the performance of under-capacitated municipalities" (DBSA, 2016). Investors frequently claim that a lack of bankable or investment infrastructure is the fundamental reason why private capital is not flowing as freely as it should in emerging countries. Lack of a supportive regulatory framework for investors, as well as inadequate institutional capability, are two major issues frequently mentioned by investors. As a result, project preparation is still the most important factor in attracting private money to infrastructure developments in developing countries (SDIP, 2020).

President Ramaphosa declared in April 2018 a \$100 billion investment objective to be met over the next five years, with a focus on investment that fosters industrial expansion and job creation. However, the major goal is to boost efforts to attract more domestic and foreign direct investment (Integrated Report, 2018). In South Africa, industrial development is a key engine of economic growth and job creation, and its role is critical because it helps to alleviate persistent inequality and promote transformation.

In 2017, growth and industrial expansion fell short of the expectations needed to raise the standard of living and provide jobs for all South Africans. South Africa's real GDP expanded by 1.3% in 2017, with a 1.2% gain in private company investment spending, followed by two years of decline.

Business confidence rebounded considerably in the first quarter of 2018, owing primarily to good developments in the political climate.

Despite IDC's success, this will be a difficult year for the industry. The global economy progressed slowly, putting pressure on exports; there was a poor commodities market, which lowered demand and prices for most local minerals; and, most importantly, a century-long drought, which has had a detrimental impact on agriculture and large industrial users of water. This has a direct negative impact on the IDC portfolio, particularly given the corporation's large exposure to key commodity markets; for example, the decline in mineral and oil prices, accompanied by a global steel glut, affected the dividend income of the IDC in its mature legacy investment portfolio, an important source of funding for investment in new sectors (IDC, 2016).

In these difficult times, the IDC is impacted not only by new market conditions, but it is also a counter-cyclical investment force that crowds in private investment by demonstrating a commitment to an investment-led recovery. However, the IDC investment included provisions for new investments as well as for current companies to improve their competitiveness and productivity, as well as for imports and exports in an effort to reclaim parts of the domestic market that had previously been lost, particularly to the rest of the continent (IDC, 2016).

On Wednesday, March 7th, 2019, President Cyril Ramaphosa stated that it had been exactly one year since the initial investment conference, which saw 31 local and foreign businesses broadcast investment projects totalling R300 billion. Eight projects, however, have been completed out of the total. "Factories have been created or facilities have been renovated, and personnel have been hired; seventeen projects are currently being built or implemented. This reflects a total investment

of R238 billion, which was announced last year. Those who stood here and made those declarations have accomplished something extraordinarily extraordinary "(Global Africa Network, 2019).

In many respects, it is satisfying to see commitments materialize in the form of new factories, new production lines, new products, and new services, and, more significantly for us, jobs that were generated as a result of the investment, "the president added. The president stated that there is no better moment to invest in our fast-growing economy than now. He praised the progress made in promoting investment by four presidential investment advisors: Jacko Maree, Phumzile Langeni, Trevor Manuel, and Mcebisi Jonas. Several enterprises should be founded in South Africa, according to the president, to set up greenfield operations or grow existing businesses (SAIC, 2019).

The commercial and public sectors pledged fresh investment totaling more than R300 billion during this gathering. In his speech, President Ramaphosa emphasized his delight that investors regard South Africa as a viable and successful investment opportunity with a lot to offer. He attributed South Africa's strong legal foundation to the country's strong legal foundation, particularly in terms of the judiciary's independence and laws governing commerce, taxation, marine concerns, competition, intellectual property, property rights, and other basic human rights, he said. Furthermore, in order to avoid being harmed by the global economic downturn, the president has stated that South Africa will not agree to reach out to social partners in order to form a new growth and development compact (Global African Network, 2019).

Since last year's summit, South Africa has worked cooperatively to execute policy reforms to ensure confidence, consistency, and predictability for investors and citizens, said President Ramaphosa. He also stated that the administration has been working diligently to establish an

investment-friendly and competitive environment. In his speech, he said, "We are on the road to removing hurdles and limits to inclusive growth." "We've started down a road marked by policy consistency and regulatory predictability, fiscal restraint, and strong economic stimulus interventions" (SAIC, 2019).

The president emphasized that master plans for each sector, including clothing and textiles, gas, chemicals, and plastics, tourism, renewable energy, ocean economy, agriculture, mining, beneficiation, the digital economy, and high-tech industries, are expected to see infrastructure, skills, incentives, and other resources focused where they are most needed (Global African Network, 2019).

Furthermore, the president stated that the government has identified the Special Economic Zone as a platform for attracting investors and boosting economic growth. The government has strategically established ten special economic zones (SEZ) across the country to allow investors to develop and export value-added products. Investors will also benefit from a favourable corporation tax structure, employee tax incentives, reasonable customs laws, and capital investment and training support (Global African Network, 2019).

The macroeconomic policy framework in South Africa encourages low and stable inflation, a flexible exchange rate, and a fiscal framework that is sustainable. Furthermore, policy pledges aid in reducing ambiguity and the difficulty of investment decision-making as well as bolstering company and consumer confidence. The policy commits South Africa to transparent public finances and expenditure constraints, as well as equipping the central bank to carry out its tasks independently, in order to safeguard the currency's value and sustain economic growth (Economic Overview, 2019).

However, for a variety of reasons, the agency has been unable to carry out its responsibilities effectively. The first is the budget—there is fierce competition for investment promotion, with more sophisticated agencies such as the EDB and IDA "using state-of-the-art skills and technology against an ill-equipped and archaic South African approach."

President Cyril Ramaphosa identified "measures worth a total of R500 billion, or about 10% of the gross domestic product, to provide cash directly to the poorest households, to provide wage support to workers, and to provide various forms of relief to struggling businesses" in his State of the Nation Address in 2021. A total of 18 million people, or about one-third of the population, received additional grant payments as a result of the famine relief measures.

Furthermore, the special unemployment insurance fund, the Temporary Employer-Employees Relief Scheme, has handed out approximately R57 billion in wage support to over 4.5 million workers to date (TERS). Small and medium-sized businesses have been provided with more than R1.3 billion in support of their businesses. Not only that, over R70 billion was provided as tax relief to businesses that are in distress. In addition, about 18.9 billion in loans through the Loan Guarantee Scheme have been approved for 13,000 businesses.

This address was not just a pledge, but also a status report on the recovery plan's implementation to restore growth and generate jobs. A large rollout of infrastructure throughout the country, a massive rise in local production, an employment stimulus to create jobs and sustain livelihoods, and the quick growth of our energy generation capacity are four critical interventions that must be prioritized. However, before embarking on a huge infrastructure deployment, the government must gradually rebuild technical skills in order to plan and manage large infrastructure projects.

However, in network industries such as energy, water, transportation, and telecommunications, an R340 billion infrastructure investment pipeline has been formed.

"Supporting a large expansion in local production and making South African exports globally competitive is another priority intervention of the recovery plan." This will encourage the private sector to invest more in productive activity. As part of our social agreement, all social partners who participated in the drafting of the Economic Reconstruction and Recovery Plan have promised to work together to reduce our dependency on imports by 20% over the next five years, stated the president (Nation News, 2021).

3.5 South Africa's Comparative Performance of Public, Private, and Foreign Investment

The Public Investment Company started in 1911 as the Public Debt Commissioners with the responsibility of supervising surplus government money and later government-related pension funds. The Public Investment Company has just received approval for its biggest purchase to date. The Public Investment Corporation stands as a behemoth in the South African economy. It can be regarded as the single largest investor on the JSE. Public investment has prevailing stakes in several of its listed companies. The Public Investment Corporation, with almost R2 trillion in assets under management, is the largest asset manager on the continent. Virtually in every sector, it straddles the economy with investment in equities, bonds, cash and property. It stands as a powerhouse of enormous proportions in the country, as it employs about 350 staff (Hendricks, 2018).

The Public Investment Corporation has remained hidden in confidentiality despite the occasional outcry in the mainstream media about perceived corrupt deals. As the website boldly says, "the PIC is accountable to the millions of South Africans on whose behalf we invest". However, in reality, they are not accountable at all; there is a lack of transparency rather than openness. PIC is wholly owned by the state, which is represented by the Minister of Finance as the sole shareholder, but alas, PIC today operates like any other privately owned asset management firm.

Aggregate demand and aggregate supply are two factors that have a significant impact on economic growth. Government expenditure has an effect on aggregate demand while the production function (capital element) has an effect on aggregate supply. Furthermore, public investment has an indirect impact on aggregate demand by inspiring private investment and on aggregate supply by attracting private investment capital (Nguyen and Trinh, 2018).

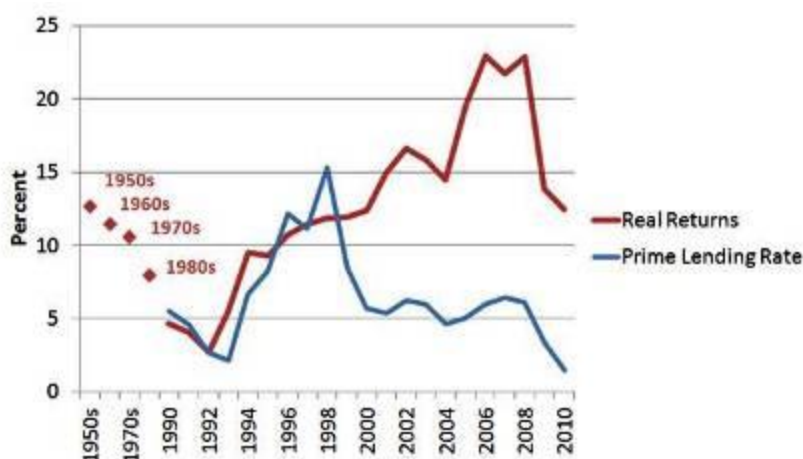
South Africa has a robust economy and well-built infrastructure. The country is a major exporter of gold, platinum, and other natural resources around the world. The country is equally blessed with legal, communications, transport, and energy sectors, as well as a well-established financial sector and the continent's largest stock exchange. However, non-transparent laws continue to hinder private investment while foreign investments face further restrictions that breed inadequacy (Heritage Foundation, 2020).

The country's comparatively low fixed investment rates are among the main factors that are holding back growth in South Africa. Currently, it is just under 20% when compared with other countries, having dropped noticeably since the late 1980s (Mohajan, 2012). The explanation for low investment in South Africa has yet to be found; it could be because the profits on offer are insufficiently appealing. On the contrary, real returns to capital calculations show that South Africa

has been an attractive place to invest in since the mid-1990s, with returns that have been rapidly increasing and appear to be globally competitive. In addition, since the 1990s, the cost of borrowing has gone down. This shows that something more than returns on investment is obstructing private investment (Aghion et al., 2008).

Since the early 1990s, South Africa's real rates of return on capital have climbed dramatically.

Figure 3.5 Real Rates of Returns on Capital in South Africa



Source: South African Reserve Bank data and World Bank staff calculations.

Industrial competition appears to be a significant impediment, and it is significantly weaker in South Africa than in its overseas counterparts.

The report finds that in recent years, private investment has gone into less productive sectors, rendering them unable to generate productive growth. Growth in private investment remains shrinking. Investment declined by 0.3% in the first three quarters of 2018, compared to 0.7% in the same period of 2017. Investment by private investors and the general government declined. Investment as a proportion of GDP has been steadily declining, reaching a 13-year low of 17.7%

in the third quarter of 2018. However, due to sluggish growth in employment, investment, and productivity, the economy has been stifled. As business confidence increases, investment is, however, projected to rise from 1.5% in 2012 to 3% in 2019 (Economic Overview, 2019). However, private investment would be the target determinant factor to influence the government's current GDP in South Africa. Low unemployment rates are one of South Africa's key aims, with the National Development Plan (NDP) aiming to create 11 million available jobs by 2030, lowering the unemployment rate to 6% and dramatically reducing poverty and inequality. However, according to the analysis, this can only happen if at least 600,000 new jobs are available each year. According to the report, employment creation in the past has been ruthlessly decreased, with an average of 310,000 jobs being generated every year; 265,000 by private investment and 50,000 by the public sector between 2005 and 2015. (World Bank, 2017).

Aschaner (1989a, 1989b) maintained, however, that public investment had a large positive impact on private investment in the United States, particularly in the field of infrastructural facilities, through enhancing productivity. Greene and Villanueva (1991) further supported the concept of complementarity between public and private investment. Evans and Karras were among those who criticized Aschauer's findings (1994).

After examining the link between private and public investment in both emerging and developed countries, Erden and Holcombe (2005) concluded that public and private investment complement each other in developing countries, but the converse is true in wealthy ones. The structural distinctions between the two types of economies caused the discrepancies in these results. While public investment may provide infrastructure to encourage private investment in emerging

countries, it is unnecessary in established economies because the public sector is already large and may compete with the private sector.

Foreign Direct Investment (FDI) in the reporting economy can be thought of as direct investment equity flows. It is defined as the total of equity capital, earnings reinvestment, and other capital. It is a type of cross-border investment in which a person from one country has control over or a significant amount of influence over the management of a company in another country (Macrotrends, 2020).

When compared to other African countries, South Africa has a high potential allure for FDI. Therefore, its enactment is comparably poor for FDI attraction, notwithstanding advances owing to infrastructure investment possibilities. According to the World Investment Report, foreign direct investment (FDI) is increasing (UNCTAD, 2020). Inflows of foreign direct investment (FDI) declined by 15.1% in 2019 to USD 4.6 billion, compared to a high of USD 5.4 billion in 2018. In 2019, FDI stocks increased to USD 151 billion, up from USD 127 billion in 2018 (Santander, 2019).

Due to intercompany financing and equity inflows, FDI has been able to rise in recent years. Beijing Automotive Industry Holding, BMW, Nissan, and Mainstream Renewable Energy have all made significant investments in recent years. Furthermore, the government was able to lead the way in terms of FDI inflows into Africa because of SEZ programmes. Traditionally, European countries (the United Kingdom, the Netherlands, Belgium, Germany, and Luxembourg) have been active investors in South Africa, as well as the United States, China, Australia, and Japan. The majority of investment is directed toward the financial, manufacturing, mining, transportation, and retail sectors.

South Africa has numerous appealing assets for investors, including a large population, a diverse and mature economy, abundant natural resources, and a transparent legal system. Nonetheless, the country's high crime rate, rising social unrest such as strikes and demonstrations, and rising levels of corruption have posed a problem (Santander, 2019). Investors are most concerned about a lack of clarity on policy and structural improvements. Investors are also put off by the investment potential, which has been limited by legal concerns. Political instability, infrastructure capacity concerns, shortages of highly skilled personnel, exchange controls, restricted labor, and low economic development are all obstacles to FDI. Nonetheless, the government is attempting to improve South Africa's attractiveness as a foreign investment location (Tuomi, 2009; Lundahl and Petersson, 2013).

In the evolution of South Africa's economy, foreign direct investment has played a significant role. Even while FDI has stayed at relatively low levels in recent years compared to other emerging market nations, despite improvements in overall macroeconomic conditions and South Africa's natural resource benefits, foreign investors have shown little interest in buying, starting, or expanding domestic businesses. However, the literature review's findings that incentives are the most important determinant of investment, which has the greatest potential to attract additional foreign direct investment, could ensure that South Africa has a competitive advantage in attracting investment from foreign investors, thereby increasing inward foreign direct investment (Steyn, 2013).

Between 1994 and 2002, annual FDI inflows into South Africa averaged less than 1% of GDP, compared to 2 to 5% in a group of comparator countries. Foreign investment is thought to be a catalyst for investment and economic development in South Africa. The importance of FDI to

growth was emphasized in particular in the Employment and Redistribution plan in 1996, and it has been reaffirmed in public statements since then (Athanasios, 2005).

The South African government recognized the relevance of FDI as a good facilitator of the country's economic growth. "Policy improvements will raise investment growth rates, attracting higher levels of FDI" (National Treasury, 2007). The National Treasury also confirmed the relevance of FDI in South Africa and the necessity to promote FDI. South Africa, as a low-savings developing country with high domestic investment requirements, needs FDI to meet its domestic investment finance needs (National Treasury, 2011).

Recent developments in the growth literature, which emphasize the dependence of growth on the rate of technological progress, as well as empirical findings, support the role of FDI in supporting a faster rate of economic growth by triggering the diffusion of new technologies and management practices to host countries. FDI has a greater impact on growth because it is a source of foreign exchange inflows, which can help South Africa's international reserves.

Over the years, South Africa has drawn very little international investment as a result of its political environment. In the mid-1980s, trade and financial sanctions were imposed, followed by the financial crisis, tightening of capital controls, and the declaration of a payment suspension to external creditors, effectively cutting South Africa off from international capital markets. Between 1980 and 1993, cumulative FDI inflows were barely over \$0.3 billion. After 1993, FDI surged as a result of two key events: the partial selling of government interests in Telkom in 1997 and Anglo American's takeover of DeBeers in 2001.

According to the report, "South Africa's institutional framework for attracting foreign direct investment (FDI) at a provincial level is comprised of nine provincial Investment Promotion Agencies (IPAs) that concentrated on the promotion of investment and trade to and from the respective provinces up until 2012." After 2012, the majority of these agencies were absorbed into the provinces. IPAs are responsible for meeting with investors and disseminating information in order to persuade them to invest in South Africa. According to Lim (2008), there is a need to provide investors with the necessary information to make more informed decisions concerning investments that will enable them to build a long-term relationship in South Africa. Inadequate information may cause investors to not invest in an appropriate location (Charlton and Davis, 2007). Investors should be cognizant of investment variables such as political stability, financial stability, and the availability of skilled labor. The government has a responsibility to intervene, support, and contribute to the investment promotion (IP) strategy, and IPAs are used to promote investment possibilities by offering incentive packages to investors (Trnik, 2007).

Growth requires a significant amount of investment. This is what contributes to the prosperity of economies (Hazelhurst, 2011). The goal of government, according to Minister of Finance Pravin Gordhan, is to enhance South Africa's economic capability and promote investment, according to his statement (National Treasury, 2009). Investment contributes to the creation of jobs and innovation in the goods and services available to consumers, as well as providing a competitive advantage for the national economy.

Furthermore, foreign direct investment (FDI) contributes to the increased risk-adjusted return by allowing capital to flow across a country's borders. The host and home country both benefit economically from this procedure (Conference Board of Canada, 2004). The government of South

Africa recognizes the importance of FDI in aiding the country's economic growth. Trevor Manuel, then-Minister of Finance, stated in 2007, "Policy improvements will raise investment growth rates, attracting higher levels of FDI." After acknowledging the necessity of FDI, the National Treasury declared that "as a low-savings growing economy with high domestic investment requirements, South Africa needs to attract FDI to support domestic investment finance requirements" (National Treasury, 2011).

Even though the government "may not have done enough" to promote FDI, Finance Minister Pravin Gordhan backed it in 2011 (Hazelhurst, 2011). However, according to a World Investment report from 2012, based on the country's FDI potential, South Africa should be attracting higher levels of FDI (UNCTAD, 2012). The concept that FDI may boost economic growth in both developed and developing countries around the world is gaining traction because it "has a beneficial influence on exports and imports and has contributed significantly to GDP."

An increase in FDI provides a slew of advantages for the host country. Apart from providing finance, FDI also aids in the mobilization of technology transfer and technical assistance, as well as the development of domestic industrial infrastructure. Furthermore, FDI aids in the increase of tax revenue for the host country; it aids in regional expansion or enlargement as well as the increase of foreign exchange reserves (Tuomi, 2009).

As a result, numerous studies have shown that FDI benefits host countries. Furthermore, according to Higon and Vasilakos' (2011) research, the British retail sector has recognized beneficial FDI spillovers. Although FDI on the African continent as a whole has been found to have a lower impact in terms of connections and spillover into the domestic economy when compared to global standards, this could be due to FDI focusing on resources rather than manufacturing, as well as

political instability on the continent, according to UNIDO (2013). Most crucially, Fedderke and Romm (2005) published a favourable report on the direct positive impact of FDI on South Africa's economic growth.

The World Investment Report (2012) reflects South Africa's actual inward FDI by stating the value of greenfield (new) FDI projects. This value peaked at \$13,533 million in 2008, but dropped to \$7,695 million in 2009 and \$6,805 million in 2010. Furthermore, inward FDI increased significantly in 2011 as the value of greenfield projects in South Africa nearly doubled to \$12,410 million. However, the situation that contributed to this turnaround could be due to continued increases in commodity prices as well as a relatively good economic prognosis for sub-Saharan Africa (UNCTAD, 2012).

An increase in FDI could imply that overseas investors are warming up to the prospect of investing in South Africa. In addition to the advancement of its economy, South Africa's implementation of new company laws could be a factor that explains an increased FDI inflow because it benefits business restructuring (UNCTAD, 2012). For the period 2012–2014, South Africa was ranked 14th on the list of transformation firms' top prospective host economies. According to UNCTAD (2012), this list displays the economies that transnational firms chose as the best medium-term destinations for their FDI. This rating for prospective host nations, together with the increase in FDI, could imply that foreign investors are positive about South Africa and believe in the country's economic potential (Wentzel and Steyn, 2014).

Despite this achievement, the World Investment Report for 2012 demonstrates that South Africa received less FDI than one could have expected based on its economic fundamentals. This statement is based on South Africa's rating on the UNCTAD FDI Attraction Index, which assesses

economies' success in attracting FDI, compared to South Africa's ranking on the UNCTAD FDI Potential to attract FDI (UNCTAD, 2012).

Despite the fact that the country is thought to have adequate capacity to increase FDI inflows, there are numerous restrictions that impede FDI. Skills shortages, exchange controls, heavy labor legislation, and poor growth rates are just a few examples (World Economic Forum, 2010; Tuomi, 2009). Furthermore, in order to handle all of these ambiguities, it is necessary to comprehend the primary criteria that influence an investor's decision when selecting a host country for investment (Wentzel and Steyn, 2014).

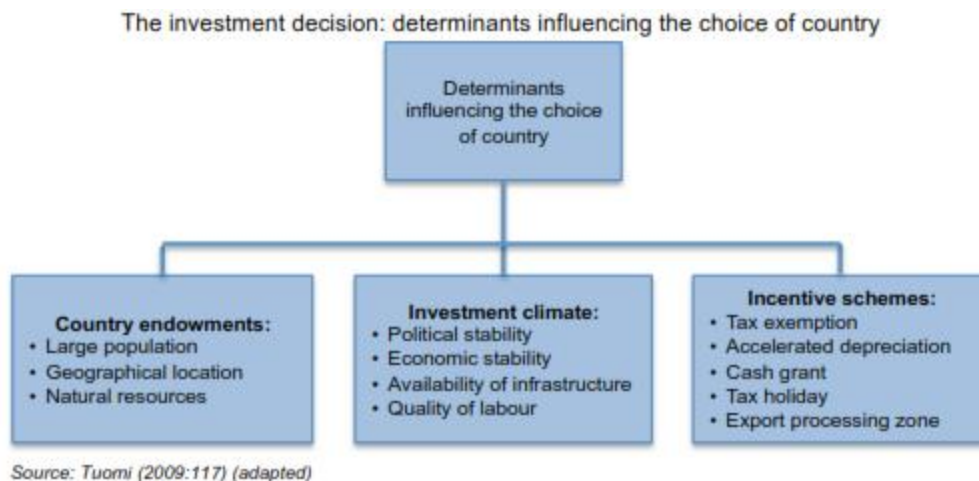
When it comes to investing abroad, there are numerous variables to consider. For example, resource-seeking investors look for rich natural resources, market-seeking investors look for vast and expanding markets, and export-seeking investors look for a competitive and efficient export manufacturing base (Easson, 2004). Many characteristics that influence FDI in the host nation have been identified by the World Investment Report (UNCTAD, 2003) and the OECD (2007). They include "economic, political, and social stability," "market size," "access to output markets," "raw materials," "skilled labor," "transport and communication expenses," "investment promotion," "tax rates," and "investment incentives." According to Zanatta, Costa, and Filippov (2006), the host country's capacity to attract FDI depends on its ability to supply assets such as market size, geographic position, human capital, and infrastructure to investors.

Furthermore, Fedderke and Romm (2005) stated that the "net rate of return and the risk profile of FDI liabilities have a significant impact on FDI." Tuomi (2009) looked at the characteristics and determinants that affect the host country's investment climate and came up with factors like "lack of crime and corruption, basic and specialized infrastructure, as well as the effectiveness and

functionality of the financial system." She also listed the factors that influence an investor's choice of a host country into three categories:

- Endowments of the country
- The investment environment
- Incentives

Figure 3.6: The Factors that Influence a Person's Decision to Move to a New Country



The three types of determinants are interconnected, and every change in one of them has an impact on the others. More specifically, any change in the first two determinants, namely a country's endowments and investment climate, would necessitate "a long-term effort by a country's government." This is because some of these elements may be beyond the government's control, for example, natural resource availability or another determinant that is influenced by external forces such as economic stability. This is why investment experts believe that incentives are a key strategy for increasing a country's attractiveness to foreign direct investment (Lim, 2005).

According to Kransdorff (2010), FDI can be increased when the host country's investment foundation, such as political and economic stability, improves. He also believes that FDI inflow and economic development can be increased when competitive incentives, particularly tax incentives, are available in the short term. The OECD (2007) also agrees that incentives can influence FDI placement and that providing tax incentives is more convenient than addressing infrastructure or skilled labor shortages.

South Africa has been highlighted by the United Nations Industrial Development Organization (UNIDO) as being particularly significant for growth since it has the highest growth multipliers (UNIDO, 2012). However, South Africa's manufacturing industry needs to introduce additional incentives by studying incentive measures that are provided by other countries. They can also make recommendations for further incentive initiation (Wentzel and Steyn, 2014).

What else can be done to boost South Africa's economic development prospects? Supporting efforts that would help improve exports or create service revenues should be prioritized. Furthermore, foreign investment is required to alleviate South Africa's deficit of domestic savings and encourage economic growth. The president's plan to encourage foreign investment clearly understands this reality. This can be accomplished, however, if policy is sensibly framed so that investors may have confidence in South Africa's long-term viability as an investment destination (McGregor, 2019).

Another issue that must be addressed is the skills gap, which has long been blamed for South Africa's current economic troubles. This is mostly discovered in the government; hence, it remains a problem throughout the economy. The direct result of this deficit is a growing salary inequality between skilled and unskilled workers, which could take a long time to correct and build up the

essential skills base. In the meantime, if South Africa wants to resurrect its economy, it must be open to importing skills as needed. In today's global market, skills are transportable. It is important to emphasize that in a society with a skills shortage, inbound migration of people who can fill the gap does not result in joblessness. On the contrary, every skilled person's immigration to the country boosts economic growth, which in turn creates jobs in the domestic economy in the long run. Furthermore, it is wisely allowed, as was argued for the admittance fee of those with adequate tertiary education. Policy adjustments must be much more daring (McGregor, 2019).

Another option to boost the country's economic growth is allowing retired foreigners with an appropriate pension income to work in South Africa. It is more appropriate that they spend their pension income here than elsewhere.

When comparing the contribution of tourism to the economy of South Africa to that of other countries, such as Spain or Italy, it becomes clear that South Africa attracts far fewer visitors than it should, owing to unnecessary entry barriers imposed by Home Affairs. If these barriers were removed, tourism could increase. Tourism is a simple way to create jobs for somewhat unskilled workers, but it can have a significant impact on the economy, particularly because it creates foreign exchange revenue, which has a strong multiplier effect (McGregor, 2019).

Another driver of economic growth in South Africa is agriculture. One of South Africa's success stories has been agriculture. Its farmers have taken advantage of rising demand in Africa, and China has emerged as a major food importer, says the report, despite climate constraints (McGregor, 2019).

3.6 Conclusion

The majority of investment research in South Africa is based on the determinants of private investment. This research, on the other hand, investigates deeper into the significance of private investment in South Africa's economic development. The study tries to fill in the gaps by shedding more light on the role of private investment in South Africa's economic growth. One of the primary objectives of this study is to make policy recommendations on how to attract growth through the enhancement of private investment into the South African economy. This objective is what Chapter 3 really concentrates upon, by explaining the chapter under sub-sections. The chapter started by introducing the general overview of South Africa's economic situation and the challenges that have been faced since the beginning of the 21st century. The chapter explains the economic condition of South Africa before and after apartheid. It also pointed out the attitude of policy-makers and the role that the government is playing in seeing to the improvement of private investment as a means of economic revival. The chapter identified some of the steps that the government has taken by providing funds to boost business confidence. The chapter further elaborated on South Africa's investment climate and business environment and how they serve as a source of encouragement to business partners, but even with this, the country is still passing through hardship when compared with its peers. South Africa's investment climate, when compared to other nations, is small, which could not encourage good earnings.

The chapter, moreover, further expounded on the investment promotion initiatives in South Africa. The chapter explains how investment, especially private investment, has been lagging behind, which has led to a decrease in the economic growth of the nation. Although growth has inherent limitations, it is still used to evaluate the standard of living in the majority of countries throughout the world since the benefits of GDP outweigh the downsides. However, instead of GDP, HDI, HPI,

and GPI can be used to assess the economy's living standards instead of GDP. Many macroeconomic policies were discussed in this chapter, such as GEAR and DTIC. The chapter concluded by explaining South Africa's comparative performance in public, private, and foreign investment. In addition to this, the chapter further explains the global competitiveness performance in investment productivity.

Chapter Four

Research Methodology and Empirical Framework.

4.1 Introduction

This section discusses the methodology used to achieve the study's key objectives. It discusses how the variables in the study were operationalized to realize the main goals. Accordingly, the chapter is divided into 5 sub-sections. Section 4.2 explains the study design and is followed by Section 4.3, which explains the data source for the study. Section 4.4 elaborates on the definition of the variables. Section 4.5 explains the research models and the estimation techniques for the study, with sub-section 4.4.1 explaining the econometric model, followed by section 4.4.2, which elaborates on the model requirements for the study. Section 4.5 is on the model diagnostics used in the study to identify the stability of the variables and to know if private investment actually contributes positively to the growth of South Africa and to guarantee the reliability of the results. All the variables used in the study and their dimensions are presented in section 4.6 with their explanations, and section 4.7 summarizes and concludes the chapter.

4.2 Research Design

The study adopts a quantitative research design to provide a clear picture of the foundations of private investment in South Africa (Saunders and Lewis, 2012). Both GDP and private investment, which are the study's dependent variables and independent variables, are quantitatively rationed. Design research, according to Yin (2009), can be described as a reasonable strategy that associates

the commencement of the research with its close. Not only that, research design helps the researcher in the course of collecting, analyzing, and interpreting data.

A quantitative research design is most suitable for ascertaining the behaviour of private investment because it also gives room to observe the behaviour of the other variables and the impact that they each have on GDP (the dependent variable). Weirsmas (1995) once declared, "Quantitative is best used when the phenomenon under investigation is described and recognized." Bayal and Nyangara (2013) use quantitative tools such as partial regression coefficients and correlation coefficients to simply summarize the analysis of numerous independent variables that disrupt private investment (Bayal and Nyangara, 2013).

This study makes use of the Vector Error Correction Model (VECM) as its principal tool of econometric analysis. The study selected VECM because it provides better results interpretation for both long- and short-term equations, as well as more efficient coefficient estimation. As a result, the results of the quantitative data analysis are used to assess the contribution of private investment to South Africa's economic growth. This model was utilized with data from South Africa from 1975–2019 to examine the relationship between investment and growth. The Vector Error Correction Model (VECM) approach of the stationarity test, co-integration test, diagnostic test, stability test, and residual test was used in this study to test for stationarity and co-integration to ascertain the robustness of the model and also determine whether or not there is a long-term relationship between investment and economic growth in South Africa. To explain the response to shock among the variables, the impulse response function (IRF) was produced. The Augmented Dickey-Fuller (ADF) and Phillips-Peron (PP) unit root tests were used to determine the order of integration of the variables. The integration is assumed to be of order zero if the time series' levels

are stationary. The approach adopted will be similar to other empirical studies that have examined the investment-growth relationship. Some of these were briefly examined in section 2.5 of the study.

4.3 Data Sources.

The data for this study was drawn from the South African Reserve Bank (SARB) and the World Development Indicator, and spanned the years 1975 through 2019. This data covers the period before and after the start of the country's democratic era. It also includes the era during which most investment agreements were signed, when both African and non-African countries signed more deals. This time span covers two distinct periods in the political and economic history of South Africa. Before 1994, South Africa was not integrated into the global economy, whereas 1994 marked the beginning of South Africa's integration into the global economy. It was also a time when African countries began to unbolt their domestic economies as a result of structural adjustment programmes following decades of trade restrictions.

4.4 Definition of the Variables

The importance of private investment as a factor of economic growth in South Africa has been well-recognized by researchers. All of the variables included in this analysis are short-term investment determinants. As a result, the variables are discussed in detail in the following sections:

Gross Domestic Product: The financial system (GDP) and private investment are the two key variables in this study. GDP is one of the tools that economists use to track the health of a country's economy. Different factors, such as consumption and investment, are taken into consideration

when calculating a country's GDP. GDP can be regarded as the most watchfully observed and significant economic indicator for both economists and investors.

GDP is the monetary value of all goods and services produced inside a country's borders in a given time period, and it includes both domestic and international production. It is primarily used to assess the health of a country's economy. GDP can be broken down into two categories: nominal GDP and real GDP. The nominal GDP is based on current market rates. Nominal DGP sees the ordinary measure of prices and trails the steady increase of an economy's costs over time, while real GDP features in inflation. Which means, it takes into consideration the complete increase in price levels. Economists habitually use real GDP to measure a country's economic growth level. As a result, for the purposes of this study, this is used. Economists use real GDP to determine whether there is actual growth from one year to the next. To account for price fluctuations, this is calculated using base year goods and services prices rather than current prices. Current prices are used as the unit of measurement for this GDP.

Private Investment: Private investment, on the other hand, is the purchase of a money asset that is likely to generate revenue, increase, or both from a macroeconomic standpoint. A capital asset is a piece of property that cannot be easily traded and is typically acquired to help an investor make a profit. Land, buildings, machinery, and tools are examples of capital properties. Saving cannot be classified as an investment in the realm of macroeconomics; for example, if you do not purchase a principal asset that can generate revenue, such as machinery, or with the expectation that it will increase in value, such as houses, you are saving, not investing. The unit measurement for this variable is current prices.

Public Investment: Public investment by federal, state, and local governments builds the nation's capital stock by devoting resources to the basic physical infrastructure. For example, roads, bridges, rail lines, airports, and water distribution, innovative activity (basic research), green investment (clean power sources and weatherization) and education (both primary and advanced, as well as job training) that lead to higher productivity and or higher living standards (Biven, 2012). Public investment may also imply influencing where people live and work. It also helps to boost growth and provide infrastructure to the private sector for more investment. Public investment may also mean funding and allocating resources for projects and services that the private sector can not successfully deliver on its own. However, the unit of measurement for this variable is current prices.

The nominal effective exchange rate (NEER) is an unadjusted, weighted average rate at which one country's currency exchanges for a basket of multiple foreign currencies. The nominal exchange rate is the amount of domestic currency needed to purchase foreign currency. The NEER may be adjusted to compensate for the inflation rate of the home country relative to the inflation rate of its trading partners. Unlike the relationship expressed in a nominal exchange rate, the NEER is not determined for each currency separately. Instead, one individual number, typically an index, expresses how a domestic currency's value compares against multiple foreign currencies at once (Kenton, 2012).

Government policy, in fact, aims to open the market further in South Africa to increase trade and develop more competitive domestic industries. However, a new approach by South African management was introduced to protect the labour-intensive garment industry. The DTI contributes significantly to economic development and has a considerable impact on the global economic trade

environment. It achieves this by establishing an equitable multilateral trading system that promotes growth and strengthens trade and investment ties among major economies. DTI recognizes the prominence of stimulating employment and inner investment as well as constructing occupation and investment relationships. It encourages exports by promoting international development for the advancement of the South African economy through the construction of cooperative contracts with long-term transaction partners and lively, fast-growing developing markets. The measurement used for this variable is trade openness.

Private Consumption: Private consumption can also be referred to as personal consumption expenditure. It is a measure of national consumer spending. Private consumption initiatives account for virtually 70% of economic production as measured by gross domestic product. Individual consumption is an indispensable economic measurement. Personal consumption expenditures display the amount of money people spend on things. It likens the individual's contribution to goods to tradable. Higher consumption levels convert into greater GDP growth in the short term. It forms part of the National Income and Product Accounts. The measurement used for the variable is the consumption of fixed capital by private business enterprises (depreciation).

Inflation is the period when too much money is spent on purchasing too few goods. A moderate inflation rate encourages investors to spend or invest. When inflation is allowed to get out of hand and rise intensely, it becomes an unhelpful force in an economy. It brings about a decrease in the level of private investment as local investors can forecast a small profit on their investment. The Phillips curve proposes that inflation is relatively high when the economy is robust and the level of joblessness is minute, and inflation is relatively minor when the economy is weak and the *rate* of joblessness is high. This inflation is measured in terms of consumer prices (annual%).

Domestic Credit to the Private Sector: Domestic credit to the private sector can be defined as financial resources provided by financial corporations to the private sector. Loans, securities purchases, trade credits, and other accounts receivable are examples of claims for payback. South Africa's domestic credit to the private sector was 65.74 percent in 2018. (percent of GDP). It reached a high of 78.29 in 2007 and a low of 41.50 in 1980 over the previous 53 years. The unit of measurement for this variable is all monetary: total credit extended to the private sector.

4.5 Models Specification and Estimation Techniques

4.5.1 Econometric Models

These models are estimated to achieve the study's objectives. The goal of this study is to uncover the contributions of private investment to South Africa's economic growth. Some economists and policy-makers have stated firmly that private investment is more practical than public investment in the economic growth process, particularly in South Africa.

The investigational writing on the involvement of private investment in economic growth is wide and it comprises both time series investigation and econometric examination. This can be visualized at the conclusion of the study. However, the empirical model designed for this study draws inspiration from several studies, including Mustafa (2014); Nwakoby and Bernhard (2016); Reinhart and Khan (2009); Batu (2016); Manete (2018); Makuyana and Odhiambo (2016); and Sesele (2017). The VECM model is used to quantify the contribution of private investment to economic development in South Africa.

The regression of the ratio of private investment to GDP and all descriptive variables was used to analyze the contribution of private investment. The model for this study was amended using adjustments from the Solow production function (1956), as utilized by Khan and Reinhart (1990); Ghali (1998); Yang Zou (2006) and Be'dia (2006), based on the importance of private investment and its contribution to the economic growth process. The research concentrates on two distinct models: first, it looks at the role of private investment in South Africa's economic growth. The second is a study of the determinants of private investment for economic growth, with private investment as the dependent variable. The following model is specified for the study:

Model 1

$$\begin{aligned}
 \Delta GDP_t = & \alpha_0 + \sum_{i=1}^n \alpha_{1\tau} \Delta GDP_{t-\tau} + \sum_{i=0}^n \alpha_{2\tau} \Delta PRI.INV_{t-\tau} + \sum_{i=0}^n \alpha_{3\tau} \Delta PUB.INV_{t-\tau} \\
 & + \sum_{i=0}^n \alpha_{4\tau} \Delta NEER_{t-\tau} + \sum_{i=0}^n \alpha_{5\tau} \Delta TR_{t-\tau} + \sum_{i=0}^n \alpha_{6\tau} \Delta INF_{t-\tau} + \\
 & \sum_{i=0}^n \alpha_{7\tau} \Delta DCPS_{t-\tau} \\
 & + \beta_1 GDP_{t-1} + \beta_2 PRI.INV_{t-1} + \beta_3 PUB.INV_{t-1} + \beta_4 NEER_{t-1} + \beta_5 TR_{t-1} + \beta_6 INF_{t-1} \\
 & + \beta_7 DCPS_{t-1} + \mu_t
 \end{aligned} \tag{4.1}$$

where GDP is the dependent variable; PRI.INV is private investment; PUB.INV is public investment; NEER is nominal exchange rate; TR is openness to trade; INF is inflation; DCPS is domestic credit to the private sector α is the intercept; $\alpha_1 - \alpha_5$ and $\beta_1 - \beta_5$ are correspondingly short-run and long-run elasticities of productivity concerning the above recognized variables; μ_t stands as error term; Δ is the difference operator, and n is the lag length.

Vector Error Correction is a technique for correcting errors in vectors. The following is a model based on model 1.

$$\begin{aligned}
\Delta GDP_t = & \alpha_0 + \sum_{i=1}^n \alpha_{1\tau} \Delta GDP_{t-\tau} + \sum_{i=0}^n \alpha_{2\tau} \Delta PRI.INV_{t-\tau} + \sum_{i=0}^n \alpha_{3\tau} \Delta PUB.INV_{t-\tau} \\
& + \sum_{i=0}^n \alpha_{4\tau} \Delta LAB_{t-\tau} + \sum_{i=0}^n \alpha_{5\tau} \Delta TR_{t-\tau} + \sum_{i=0}^n \alpha_{6\tau} \Delta INF_{t-\tau} + \\
& \sum_{i=0}^n \alpha_{7\tau} \Delta DCPS_{t-\tau} \\
& + \varphi_1 ECM_{t-1} + \mu_t
\end{aligned} \tag{4.2}$$

where φ_1 is the coefficient of the ECM, and ECM_{t-1} is the error correction term lagged by one period. The other variables are explained after equation (1) above.

The primary goal of this study is to investigate the impact of private investment on South African economic development. However, few, if any, studies have been conducted in South Africa that focus on the impact of private investment. Nonetheless, several studies (Sesele, 2017; Tsukulu, 2009; Makuyana and Odhiambo, 2018; Molocwa et al., 2018; Ibrahim, 2000; Bayai and Nyangara, 2013; Baxter and Contogiants, 2008) and many others have looked at the factors that influence private investment in South Africa. As a result, the goal of this research is to develop a model that relates the determinants of private investment to economic growth in South Africa. The methods used to analyze the model in this study are based on the work of Blejer and Khan (1984), as well as Odedokun (1997). The model is thus estimated as:

Model 2

$$\begin{aligned}
\Delta PRI.INV_t = & \alpha_0 + \sum_{i=0}^n \alpha_{1\tau} \Delta PUB.INV_{t-\tau} + \sum_{i=0}^n \alpha_{2\tau} \Delta PRI.CON_{t-\tau} + \sum_{i=0}^n \alpha_{3\tau} \Delta GDP_{t-\tau} \\
& + \sum_{i=0}^n \alpha_{4\tau} \Delta NEER_{t-\tau} + \sum_{i=0}^n \alpha_{5\tau} \Delta TR_{t-\tau} + \sum_{i=0}^n \alpha_{6\tau} \Delta INF_{t-\tau} + \\
& \sum_{i=0}^n \alpha_{7\tau} \Delta DCPS_{t-\tau} \\
& + \beta_1 PUB.INV_{t-1} + \beta_2 PRI.CON_{t-1} + \beta_3 GDP_{t-1} + \beta_4 LAB_{t-1} + \beta_5 TR_{t-1} \\
& + \beta_6 INF_{t-1} + \beta_7 DCPS_{t-1}
\end{aligned}$$

$$+ \varepsilon_{1t} \tag{4.3}$$

4.5.2 Model Requirements

The Vector Error Correction Model (VECM) can be regarded as one of the models in the Multivariate Time Series. One of the requirements of VECM is that there must be stationarity in the time series. Not only that, but VECM can only be calculated if the variables are co-integrated. Co-integration transactions are built into the requirements of a vector error correction model to restrict the long-run behaviour of endogenous variables to their co-integration connections while short-run dynamic modification is allowed. According to Brooks (2002), the Vector Error Correction Model (VECM) provides a constraint for endogenous variables' long-run behavior and trends to congregate into their co-integrating relationship, making it interrelated with co-integration while also providing an opportunity and availing itself for short-run modification dynamics.

The weakness of this model, however, is that if the data fluctuation is at an increased level, the result of the model prediction will not be stationary, white noise, bias, or residuals not normally distributed. Because it allows for long-run equilibrium to be rectified over time by a succession of short-run adjustments, co-integration is also known as the corrective error. This, therefore, gives support to the existence of the vector error correction model.

Brooks (2008) explained that a vector error correction model is carried out if it is discovered that the variables are co-integrated. However, if the variables are found not to be co-integrated, according to Abdalla and Murinde (1997), the VAR model requests to be projected at the first difference. The vector error correction model is a multiple-time series model that measures how

quickly the dependent variable (X) returns to equilibrium following a change in an independent variable (Y).

Furthermore, by employing its long-run behavior, VECM may be used to integrate the short-run behavior of an economic variable. Exogenous variables, such as seasonal dummies or time trends, can also be included in a VAR system. As a result, by including two variables, X and Y, VAR can represent the following two equations:

$$y_t = \beta_{y0} + \beta_{yy1}y_{t-1} + \dots + \beta_{yyp}y_{t-p} + \dots + \beta_{yxp}x_{t-p} + v_t \quad (4.4)$$

$$x_t = \beta_{x0} + \beta_{xy1}y_{t-1} + \dots + \beta_{xyp}y_{t-p} + \beta_{xx1}x_{t-1} + \dots + \beta_{xxp}x_{t-p} + v_t \quad (4.5)$$

Chipaumire et al. (2014) used VECM in their study even though they only had twenty observations and their study also had two negative relationships among the variables. As a result, VECM can be used in this study. VECM stands for “co-integration correlation” and is a type of VAR that is useful for variables that are stationary at their differences, such as I (1). However, the VECM equation for two variables is:

$$\begin{aligned} \Delta y_t = & \beta_{y0} + \beta_{y1}\Delta y_{t-1} + \dots + \beta_{yp}\Delta y_{t-p} + \gamma_{y1}\Delta x_{t-1} + \dots + \gamma_{yp}\Delta x_{t-p} \\ & - \lambda_y (y_{t-1} - \alpha_0 - \alpha_1 x_{t-1}) + v_t \end{aligned} \quad (4.6)$$

$$\begin{aligned} \Delta x_t = & \beta_{x0} + \beta_{x1}\Delta y_{t-1} + \dots + \beta_{xp}\Delta y_{t-p} + \gamma_{x1}\Delta x_{t-1} + \dots + \gamma_{xp}\Delta x_{t-p} \\ & - \lambda_x (x_{t-1} - \alpha_0 - \alpha_1 y_{t-1}) + v_t \end{aligned} \quad (4.7)$$

Where:

$y_t = \partial_0 + \partial_1 x_t$ is the long-run cointegrating correlation between the two variables, and they are, therefore, the error correction parameters that measure how y and x respond to the deviations from

long-run equilibrium. Furthermore, according to Hauser (2010), the implementation of VECM requires the presence of more than one co-integrating link between the two variables. As a result, after completing unit root testing, co-integration analysis, and VECM, the model must undergo diagnostic and stability testing.

4.6 Model diagnostics

The model is suitable just as a portion of the section for the regression survey because it is constructed on definite assumptions. According to Wooldridge (2010), basic assumptions such as stationarity, heteroscedasticity, and autocorrection are final tests that are carried out before the regression. Regression diagnostics are used to appraise the model assumptions and examine whether or not there is an observation with a large, undue influence on the analysis. All statistical models are arrays of assumptions about the data-creating process. The approximation will be pointless or even deceptive if these assumptions do not hold for the data. Model diagnostics is frequently recommended as a step in data analysis in texts on linear regression and analysis of variance (ANOVA). This methodology can instantaneously detect and recognize multiple experimental units that show an unusually large nonconformity between method repeats.

The study includes some particular text to VECM, such as a unit root test to establish the order of integration for the variables in the model. This test helps to discover if a specified time series is constant with a unit root method and this is expressed through this model:

$$Y_t = Y_{t-1} + u_t \quad (4.8)$$

where u_t is the stochastic error term. Unit root testing is useful not just for determining whether a time series is stationary, but also for determining whether the disruption term of cointegration has a unit root. Unit root testing aids in determining whether trending data should be differentiated first or regressed on predictable functions of time to build the data stationary. However, economic theory emphasizes the need for long term equilibrium among non-stationary time series variables regularly.

Furthermore, according to Ng and Perron (2001), cointegration approaches can help model the long-run relationship if the variables are I(1); otherwise, pre-testing for unit roots will be required as the first step in co-integration modeling. Furthermore, according to Kungl (2003), a time series is stationary when the mean, variance, and auto covariance all remain the same, regardless of what stage they are at. On the other hand, the speed of mean reversion for a stationary series is determined by the autocovariance. Furthermore, stable models make it easier to investigate and enhance asymptotic theories quantitatively. The rate of covariance in the middle of two time periods is determined by the lag between the two time periods rather than the actual moment when the covariance is calculated. As a result, a stationary series has a mean value that does not change with the sample period.

The reason for testing for stationarity is that in time series analysis, non-stationarity can only lead to misleading regression if there is only one co-integrating connection present. As a result, a unit root test is required in this study to avoid the creation of a misleading regression. According to Caner and Kilian (2001), the rule decision for unit root test is that “if the test statistics are less than the critical value, then the null hypothesis (H_0) on non-stationarity is rejected; if else, the alternative hypothesis (H_1) is accepted, and the level of significance is 0.05.”

The Augmented Dickey-Fuller test to detect the presence of a unit root in a time series sample is another test that must be performed in this part, and the ADF statistic utilized must be a negative integer. Dickey was the first to introduce unit root testing, and Fuller was instrumental in the development of the Augmented Dickey-Fuller test (Fuller, 1976; Dickey and Fuller, 1979). This test determines whether the time series is stationary or not. The more negative it is, the more the hypothesis is rejected (which will reveal that the unit root is present at some level of confidence). The ADF test arose from the Dickey-Fuller (DF) test to allow broad ARIMA and ARMA models to be used. Trend, intercept, or a mixture of both, trend and intercept, are used in the test. The regression test is thus:

$$\Delta y_{t-1} = \psi y_{t-1} + \beta_1 \Delta y_{t-1} + \beta_2 \Delta y_{t-2} + \dots + \beta_n \Delta y_{t-n} + u_t \quad (4.9)$$

The following is the hypothesis to test for unit root using ADF:

Null hypothesis (H₀): $\varphi = 0$: series comprises a unit root (not stationary)

Alternative hypothesis (H₁): $\varphi < 0$: series is stationary

The null hypothesis is rejected, indicating that there is no unit root and that the variable is stationary (Maphutha, 2018). Furthermore, “the ADF test extends the Dickey Fuller (DF) test to account for anticipated serial correlation in the error terms by adjoining the regressand's lagged difference terms.” The DF test, however, assists the error terms $(U)_t$ in being interdependently and identically disseminated. It also helps to test the null hypothesis that a time series y_t is I(1) against the alternative that it is I(1). The use of ADF aids in detecting stationarity, which is defined as "where the test statistics are less than critical levels, the null hypothesis of non-stationarity is rejected; otherwise, the null hypothesis is established" (Caner and Killian, 2001).

The following equation, therefore, explains the ADF test:

$$\Delta Y_t = \alpha_0 + \gamma Y_{t-1} + \alpha_2 t + \sum_{i=1}^p \beta_i \Delta Y_{t-1} + u_t \quad (4.10)$$

As a result, the test is carried out in three different ways:

Constant regression:

$$\Delta Y_t = \alpha + \delta Y_{t-1} + u_t \quad (4.11)$$

Regression with a constant and a trend over time:

$$\Delta Y_t = \alpha + \beta T + \delta Y_{t-1} + u_t \quad (4.12)$$

Without a constant and a time trend, regression:

$$\Delta Y_t = \delta Y_{t-1} + u_t \quad (4.13)$$

In the same way, the Philips-Perron Test will be used to confirm the null hypothesis that a time series is integrated in the order of (1). Though this test is similar to the ADF test, it adds an automatic rectification step to the DF approach to allow for auto-correlated residuals. This is apart from the fact that the test is more rigorous to the common method of heteroscedasticity in the error term (U_t). It can also be used to make a non-parametric modification to t-test statistics. This test also assists in correcting the test statistics to explain the serial correlation. This can be achieved, however, by employing non-parametric statistical approaches to deal with serial correlation in the error term without the need for lagged difference terms. Nonetheless, the test statistics are difficult to calculate, but according to Lee (2004), they are equivalent to the ADF test.

The purpose of this test is to test the null hypothesis that $\phi = 1$ in:

$$Y_t = \varphi Y_{t-1} + U_t \quad (4.14)$$

Where:

H_0 : A unit root can be found in a series.

Vs.

H_1 : The series is stationary.

are employed, and the following regression can be utilized as well:

$$\Delta Y_t = \Psi Y_{t-1} + U_t \quad (4.15)$$

If non-stationarity exists in the unit root, the null hypothesis that the unit root exists can be accepted. The fact that the variables are non-stationary is a clue. The null hypothesis will be rejected if the variable or variables are stationary.

According to Ozcicek and McMilling (2015), it is important when carrying out a time series analysis to select lag length criteria for more appropriate results. There are several traditional information criteria, including Hannan-Quinn (HQ), Schwarz (SC), Akaike (AIC), Sequential Modified LR Test Statistics (LR), and Final Prediction Error (FPE) (Lutkepohl, 1993). However, AIC was discovered to be more suitable, particularly when the observations are fewer than 60. Therefore, this research chose to apply the AIC lag length.

Because VECM is used as a model in this study, it is critical to understand that when the time series is non-stationary, co-integration analysis is used. Patterson (2000) defines cointegration as the long-run or equilibrium occurrence of a variable that can deviate from short-run relationships but returns to the association in the end. As Khumalo (2011) correctly stated, the purpose of

conducting a cointegration test is to check for the presence of long-run correlation among the variables as well as to determine whether the variables in the model are cointegrated or not. Nkoro and Uko (2016) ascertained that it would become imperative to work with the model in the event that the test fails to recognize the cointegration among the variables.

If the model has co-integration, it means there is a long-run connection, which allows the Error Correction Model (ECM) to be projected to examine the speed of adjustment of the causes to equilibrium and thus probe the short run vigorously.

Moreover, according to Chipamire et al. (2014), co-integration is grounded on the principle that even when two-time series seem to be independently non-stationary, their linear amalgamation can be stationary. Co-integration analysis functions to take care of the problem of the existence of non-stationary data to circumvent any problem connected with spurious regression (Sjo, 2008).

There are two methods commonly used to carry out co-integration, which are the Engle-Granger approach and the Johansen approach. However, this study will adhere to the Johansen approach. The Johansen method, instead of partly on least squares, builds directly on maximum likelihood estimation. One of the advantages of this strategy is that it allows for further cointegration relationships as long as the data set has two or more-time series. Not only that, it is considered better than the other co-integration tests because of its appropriate statistical properties (Erik and Par, 2007).

Virmani (2014), however, emphasized the importance of co-integration with a statistical theory for analysis for co-integration and the estimation parameter of a linear method with co-integration. Engle and Granger (1987) further extended the theory of co-integration where the Granger theorem

is meticulously demonstrated. Engle and Granger (1987) explored the challenge of testing the hypothesis of no co-integration between a collection of I(1) variables. Therefore, when the unit root null hypothesis is discarded, it then results in its being in favor of co-integration.

The equation is thus:

$$\times_{1,t} = \alpha_1 + \gamma_1 z_{1,t} + \gamma_2 z_{2,t} + \dots + \gamma_p z_{p,t} + \varepsilon_{1,t} \quad (4.16)$$

$$\times_{2,t} = \alpha_2 + \phi_1 z_{1,t} + \phi_2 z_{2,t} + \dots + \phi_p z_{p,t} + \varepsilon_{2,t} \quad (4.17)$$

The Johansen approach was based on two types of likelihood testing: trace and maximal Eigenvalue tests.

The following are the equations:

$$J \text{ trace} = -T \sum_{i=r+1}^n \ln(1 - \lambda_i) \quad (3.11) \quad (4.18)$$

$$J \text{ max} = -T \ln(1 - \lambda_{r+1}) \quad (3.12) \quad (4.19)$$

where T represent sample size and λ_i is the *ith* biggest chronicle correlation. The trace statistics test the null hypothesis of ‘there are at most ‘r’ co-integrating dealings contrary to the alternative hypothesis of a co-integrating relations’. The maximum eigenvalue tests for null hypothesis of ‘r’ co-integrating vectors contrary to the alternative hypothesis of r+1 cointegrating vectors. Apart from the fact that the Johansen trace test has been considered to be unsurpassed for the reason that it is robust to skewness and excess kurtosis, its approach is fundamentally used in a situation where all variables in the system are I (1). In addition, the test is suitable when it comes to fewer samples (Sjo, 2008).

Harris (1995) enumerates the stages that are involved in the Johansen cointegration method as follows:

- Testing the order of integration of each variable that enters the multivariate model;
- Selecting the correct lag length, K of the vector autoregression (VAR) model. This is to ensure that the (Vector) error correction model has Gaussian errors;
- Detecting if the system needs to be conditioned on any $I(0)$ variables, including dummy variables;
- Carrying out tests to reduce rank of the system. The Johansen cointegration test can be used to know whether $\pi (= \alpha\beta')$ has reduced rank and also to know the value of r with $r \leq (n - 1)$ the number of cointegration vectors present in β ;
- Knowing if the system is to be estimated with deterministic variables (constant and trend) or not;
- Testing for weak exogeneity;
- Testing for unique co-integrating vectors as well as a linear hypothesis on co-integrating relationships; and
- Imposing joint tests of restriction on the α leading matrix and the β co-integrating vector (Cuthbertson, 1992).

The VECM approach is used if co-integration is identified among the variables under investigation.

After explaining the previous models for the study, we move on to the VECM, which is the study's targeted model. The Vector Error Correction Model is a statistical model that is designed to be used with non-stationary time series that have been recognized as co-integrated. According to

Brooks (2002), the Vector Error Correction Model (VECM) imposes a constraint on the long-run behavior and trends of endogenous variables to congregate to their co-integrating associations, making them interrelated with co-integration while also allowing for short-run energetic modification. Because it allows a long-run equilibrium to be altered over time by a succession of short-run adjustments, co-integration is also known as a corrective error. As a result, the existence of the vector error correction model is formulated. If it is discovered that the variables are co-integrated, Brooks (2008) suggested that a vector error correction model be used. If, according to Abdalla and Murinde (1997), the variables are not co-integrated, the VAR model requests to be evaluated at the first difference. The vector error correction model is a multiple-time series model that evaluates how quickly the dependent variable (X) returns to equilibrium when an independent variable is changed (Y).

In addition, VECM can be used to combine the short-run behavior of an economic variable by applying its long-run behavior. Exogenous variables, such as seasonal dummies or time trends, can also be included in a VAR system. VAR would denote the two equations by including two variables, X and Y:

$$y_t = \beta_{y0} + \beta_{yy1}y_{t-1} + \dots + \beta_{yyp}y_{t-p} + \dots + \beta_{yxp}x_{t-p} + v_t \quad (4.20)$$

$$x_t = \beta_{x0} + \beta_{xy1}y_{t-1} + \dots + \beta_{xyp}y_{t-p} + \beta_{xx1}x_{t-1} + \dots + \beta_{xxp}x_{t-p} + v_t \quad (4.21)$$

Chipaumire et al. (2014) used VECM in their study even though they had only twenty observations, and their study had two negative relationships among the variables. It, therefore, means that this research can use VECM. VECM is a type of VAR that arises from cointegration correlation and is useful for variables that are stationary at their differences, such as I(1). The VECM equation for two variables, on the other hand, will be as follows:

$$\Delta y_t = \beta_{y0} + \beta_{y1} \Delta y_{t-1} + \dots + \beta_{yp} \Delta y_{t-p} + \gamma_{y1} \Delta x_{t-1} + \dots + \gamma_{yp} \Delta x_{t-p} - \lambda_y (y_{t-1} - \alpha_0 - \alpha_1 x_{t-1}) + v_t \quad (4.22)$$

$$\Delta x_t = \beta_{x0} + \beta_{x1} \Delta y_{t-1} + \dots + \beta_{xp} \Delta y_{t-p} + \gamma_{x1} \Delta x_{t-1} + \dots + \gamma_{xp} \Delta x_{t-p} - \lambda_x (x_{t-1} - \alpha_0 - \alpha_1 y_{t-1}) + v_t \quad (4.23)$$

Where:

$y_t = \partial_0 + \partial_1 x_t$ is the long run cointegrating correlation between the two variables and λ_y and λ_x are therefore the error correction parameters that ration how y and x respond to the deviations from long-run equilibrium. Moreover, according to Hauser (2010) there must be presence of an extra co-integrating relationship between the two variables to allow the presentation of VECM.

As a result, after completing unit root testing, co-integration analysis, and VECM, the model is then put through diagnostic and stability testing.

The study will also perform residual tests because most tests on null hypothesis on regression necessitate normality, and if abnormality is found, it may possibly prove challenging to carry out the hypothesis test. The residual should be zero throughout the range of fitted values; it should not be systematically low or high. At the same time, random errors in the OLS context are meant to hypothetically produce residuals that are normally distributed. Residuals must, therefore, have symmetrical patterns as well as constant speed throughout the range (Frost, 2012). Wheeler (2013) makes it clear that residuals need to be ordinarily disseminated because they have ordinarily disseminated data. Furthermore, the residual, which has a proportional relationship to software accessibility, must perform a lack-of-test even though some residuals may be pure noise.

Nevertheless, it cannot be regarded as an indicator that residuals lack extra associations with the independent variables.

Lucarelli (2013) ascertains that a residual need to be normal. Most tests on the null hypothesis of regression necessitate normality. If the residual is abnormal, it will prove difficult to carry out hypothesis tests. However, there are also some useful techniques for carrying out statistical tests on ordinary linear regression in the case where a residual is not normal. Notwithstanding, Lucarelli puts emphasis on the consequences of violating the normality assumption. This is so, most importantly, in the area of unemployment, which may make the violation lead to erroneous outcomes of the investigation. In addition, the results of the normality test will be unreliable if the presumption of joint individuality of the sample is violated. However, the effect of the violation supposition hinges on the magnitude of the violation. This study can, however, be decided by inspecting the probability of the Jarque-Bera statistic. As a result, if the Jarque-Bera in the model is greater than the significant level of 5%, the error term will be distributed regularly.

Heteroscedasticity is important in the presentation of regression analysis because its presence might invalidate the statistical test of significance, which assumes that modeling errors and variance do not diverge from the modeled effect. The downside is that it can result in a wide range of meanings when carried out. Heteroscedasticity impacts the estimated coefficients' distribution, aggregating the variance of dissemination and underestimating the variance of estimators, resulting in larger "t" and "F" statistics. (Asteriou and Hall, 2014). Wooldridge (2009), however, emphasizes that in the nonexistence of constant variation, that is, the existence of heteroscedasticity, it can be affirmed if the error term does not have constant variance, which means it can be described as the absence of homoscedasticity. Measurement can be cited as one example that can cause

heteroscedasticity. The Breusch-Pagan LM test, the Glesjer LM test, the Harvey-Godfrey LM test, the Park LM test, the Goldfeld-Quandt test, and the White test are all instances of heteroscedasticity tests. However, the most common heteroscedasticity test is the White's test because it is straightforward and simple to carry out (Gujarati, 2003).

Furthermore, the goal of this research is to provide a sample technique for generating asymptotically t distributed t statistics in order to determine whether or not heteroscedasticity exists and whether or not the variance error is dependent on independent factors. As a result, the White test will be used to determine whether heteroscedasticity exists in this study.

The following are the hypotheses tests for heteroscedasticity:

Null hypothesis (H_0): Homoscedasticity

Alternative hypothesis (H_1): Heteroscedasticity

In the same way, the serial correlation test is used to confirm the null hypothesis that errors are not serially connected. When the error associated with a specific time period is moved into an upcoming period in time series studies, serial correlation can arise. For example, anticipating stock disbursement increases, which can lead to an overestimation in one year, can lead to an overestimation in succeeding years. One of the implications of serial correlation is that neither the unbiasedness nor the stability of OLS estimators are affected, but only their proficiency. The OLS estimations will only be smaller than the accurate usual errors in the case of positive serial correlation. This indicates that the parameter estimates are more exact than what they really are, which may lead to rejection of the null hypothesis when it should not (Gau, 2002).

However, according to Gau (2002), it is important to carry out serial correlation to avoid omissions of variables in order to give rise to non-linearities. Furthermore, even when there is no fundamental mis-specification of the model, static and finite-distributed lag models can have serial correlated errors, hence the serial correlation test can help uncover such dynamic mis-specification.

As a result, the VEC Residual Serial Correlation LM test will be used for this study to determine whether or not serial correlation exists in the residuals. The VEC test can also be used to determine whether lagged reliant variables are complex.

In order to carry out the normality of distribution test, the Jarque-Bera test will be introduced. The test will enable the study to make more elaborated advances while simultaneously testing for homoscedasticity, normality, and the nonexistence of autocorrelation in residuals sample skewness and sample kurtosis. The model is given thus:

$$JB = \frac{n}{6} \left(s^2 + \frac{(k-3)}{4} \right)$$

The letters S, K, and N stand for sample skewness, sample kurtosis, and sample size, respectively. The test function equates to how much the asymmetry and kurtosis ration diverge from typical dispersion value features. Jarque-Bera asymptotically has a chi-square distribution with two degrees of freedom, according to Domanski (2010), which enables the premise that the data is from a typical dispersal. More specifically, Jarque-Bera probability information is used to either reject or admit the hypothesis that the true coefficient is zero, with a probability of less than 0.05 seen as proof of dismissal (Givology, 2015).

Finally, the study will use the Impulse Response Function (IRF) to describe the reaction of endogenous macroeconomic variables, including GDP, investment, and public investment, during the shock phase and over time.

4.7 Conclusion

This chapter explains the methodology employed for this study. The chapter also provides the research design, the setting and sample period for the research, as well as the basis of the data that was used for the study. The chapter described the chosen model, the VECM, which was used to examine the impact of private investment on economic growth in South Africa between 1975 and 2019. The multivariate model was used to determine the relationship between the variables, with GDP as the dependent variable and the other variables as independent variables. Two models were used in the research. The first model was based on the importance of private investment in South Africa's growth, while the second model was based on the factors that influence investment in the country's economy. As a result, the models were projected to capture any changes in the variables. It also contained the definitions of the variables utilized in the study. It is probable that the exploration of private investment will generate a positive relationship with the economy of South Africa. In the chapter that follows, the results will be presented and discussed.

Chapter Five.

Results and Discussions.

5.1 Introduction

In the previous chapter, an explanation of the study method, sources of data, choice of variables, and econometric techniques used for this study were presented. This chapter presents and discusses the results of the econometric estimations and their interpretation and analysis. The chapter thus presents the unit root tests carried out as well as the Johansen co-integration test conducted, and the actual VECM model and results. It also presents other diagnostics tests such as residual tests, stability tests, as well as IRF analysis and long-run regression analysis, which were used to determine the importance of private investment to economic growth in South Africa. Accordingly, the chapter is divided into various subsections. Section 5.2 explains the estimation method that is used for the study, which is sub-divided into 5.2.1 and 5.2.2, which present tests for endogeneity and stationarity that are used for the study. Section 5.3 presents the results of the diagnostics and the graphical representations of the data. This section also includes the presentation of empirical results and analysis such as ADF and Phillips-Perron unit root. The next section presents testing for co-integration to see if the variables are co-integrated. Under this section, the VAR Lag Selection Criteria are displayed to find which lag is suitable for the variables. The next section presents VECM for both the short-run and long-run to see whether the variables have an equilibrium relationship. In addition, regression analysis is presented with all the diagnostic tests such as residual serial correlation, normality test, heteroskedasticity test, and Ramsey reset test. The last section presents the impulse response function.

5.2 Estimation Method

The model for this study was evaluated using co-integration and the Vector Error Correction Model (VECM). According to Harris (2000), the co-integration technique should be used to explore the possibility of a plausible long-run relationship between private investment and other explanatory factors. The short-run dynamics will be estimated through VECM to capture the possible lagged reaction of private investment. According to Harris (2000), there are four steps to VECM analysis. First, the order of integration for each variable must be defined. Second, co-integration should be presented using variables that have the same order of integration. The unit root of the residuals of the co-integrating regressions should be examined in the third phase. The estimation of VECM is the fourth.

5.2.1 Test for Endogeneity and Stationarity

All of the variables included in the investigation must be stationary in order to use OLS to analyze the contributions of investment (Harris, 2000). According to Gujarati (2003), a time series is stationary if its mean and variance remain constant throughout time, and the rate of covariance between two time periods is determined solely by the space or lag between the two time periods rather than the true time at which the covariance is calculated. Therefore, to avoid spurious OLS in the existence of unit root, there is a need to examine the time series structures to be certain of the stationarity of the data. This is a common misunderstanding.

However, according to Agenor, Mc Dermott and Prasad (2000), the ideal of econometric techniques applied to eliminate long-term trends from the data determines the estimation of the

results. For example, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests are commonly used in applied studies to check for stationarity in data series. Therefore, both methods can be applied to test for stationarity either at level or at first differences. In this study, however, both methods are applied to each variable used in the study. Moreover, the ADF test allows heteroskedasticity and gives room for serial correlation in the error terms. The R^2 and t-statistic of spurious regression are significant, but the results are sparingly useless.

Because regression is only effective for data without a trend, data with a trend must first be detrended. The ADF test is typically applied to time-series models that are larger and more complex. To produce white noise residuals, this can be done by showing two or more lags of the dependent variable. Because the ADF is negative, the more negative it is, the stronger the denial of the evidence that the unit root is present.

5.3 Results of the diagnostic procedure

Figures 5.1 to 5.16 reveal the graphical study of a series to determine whether it is stationary.

5.3.1 Data Representation in Graphics

Figure 5.1: Panel A of GDP at level

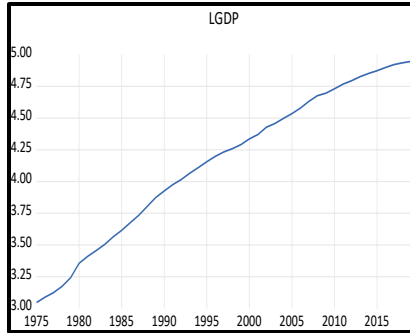


Figure 5.2: Panel B of GDP at first Difference

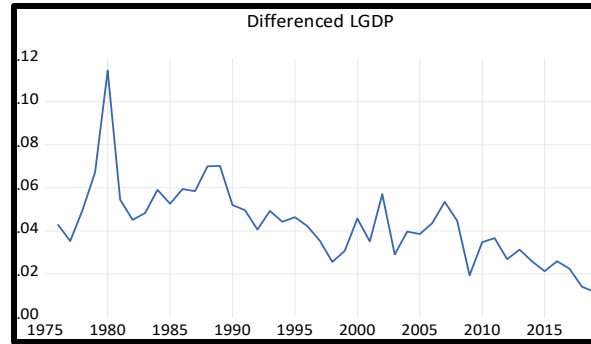


Figure 5.1 depicts straight trending, which indicates non-stationarity as a result of rising all the way through. Figure 5.2, on the other hand, displays stationarity using the same variable at the first difference. This means that at initial difference, GDP is stagnant.

Figure 5.3: Panel A of private investment at Level

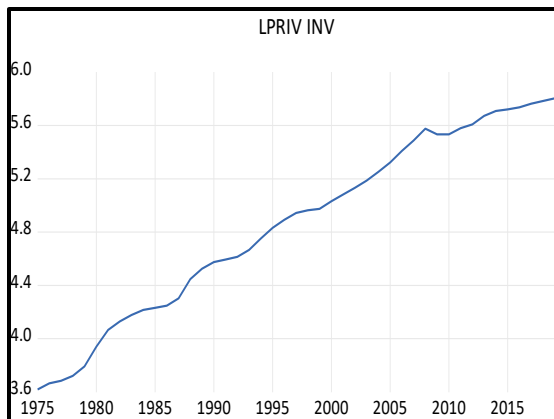


Figure 5.4: Panel B of Private Investment at First Difference

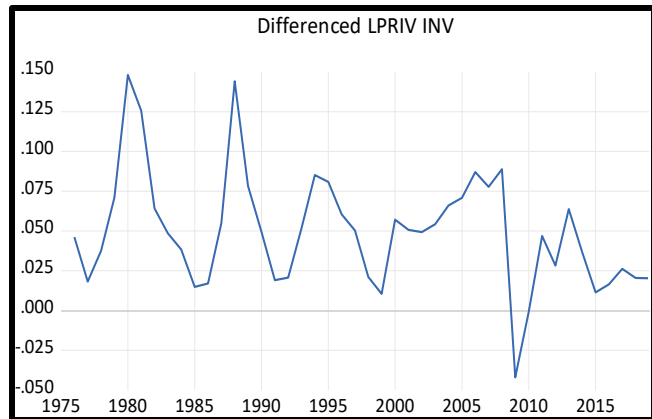


Figure 5.3 shows the graph of private investment at level which displays an upward trending movement which reveals that the series is non-stationary. However, after differencing it at first

difference, it reveals more constancy, which indicates that the means and variance are more constant.

Figure 5.5 Panel A of public investment at level

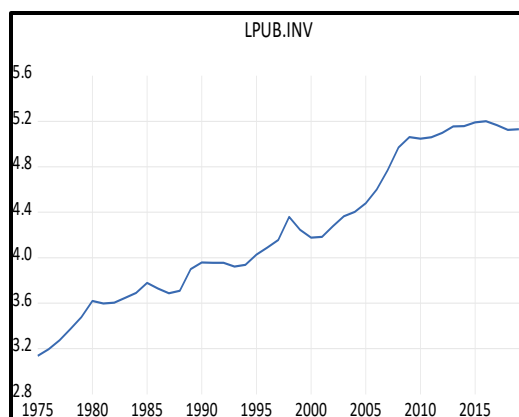


Figure 5.6: Panel B of public investment at first difference

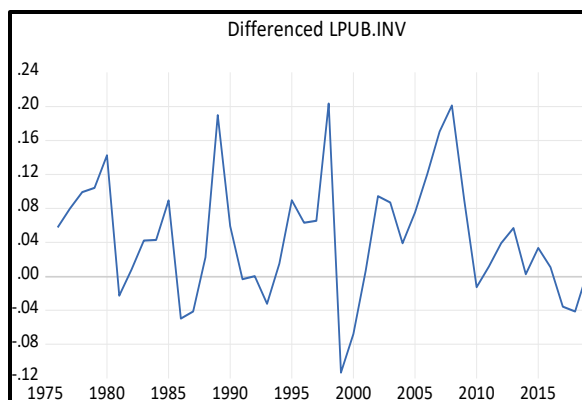


Figure 5.5 indicates public investment at level, and the trend movement is upward which means that the series is non-stationary. Figure 5.6 shows stability, which suggest stationarity.

Figure 5.7: Panel A of NEER

At Level

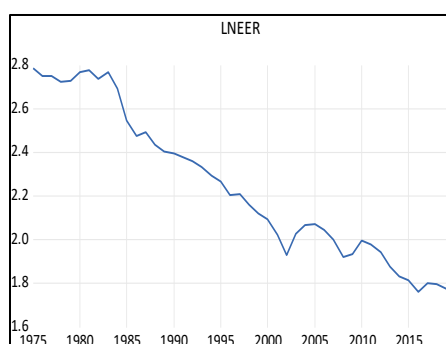
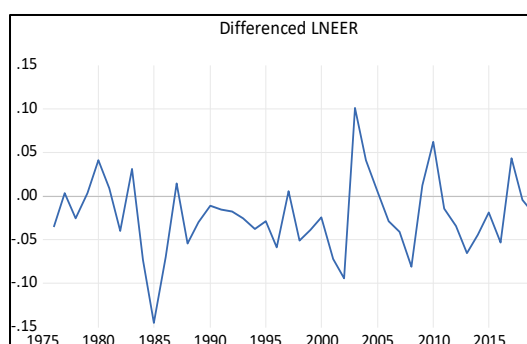


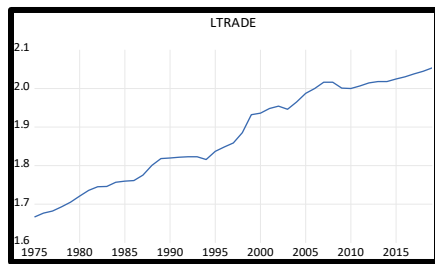
Figure 5.8: Panel B of

NEER at First Difference

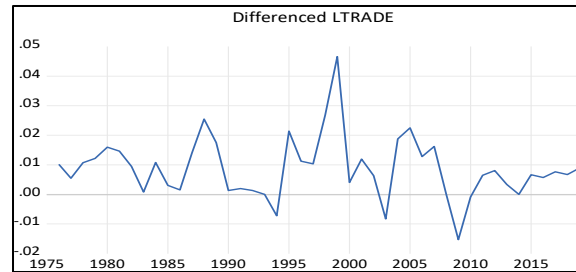


Graph 5.7 represents nominal exchange rate at level. The trend, however, remains unstable, which means it is not stationary. However, graph 5.8 shows the result at first difference, which indicates a level of stationarity of the time series.

Figure 5.9: Panel A of Trade at level



5.10: Panel A of Trade at first level



Graph 5.9 presents trade at level, which indicates non-stationarity because of the instability of the trend series. However, graph 5.10 indicates stationarity after differencing at first difference.

Figure 5.11: Panel A of Pri_con at Level

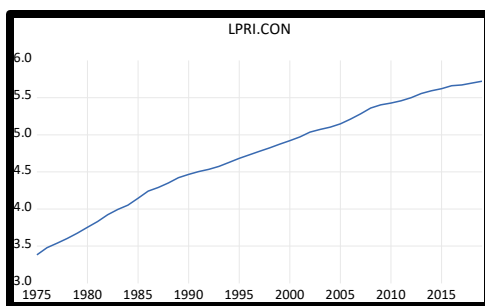
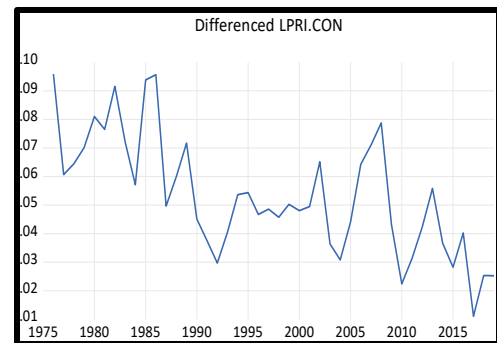


Figure 5.12: Panel B of Pri_Con at First Difference



Graph 5.11: represents private consumption at level, which shows non-stationarity, but when it was difference in graph 5.12, it indicated stationarity.

FIGURE 5.13: Panel A of Inflation at Level

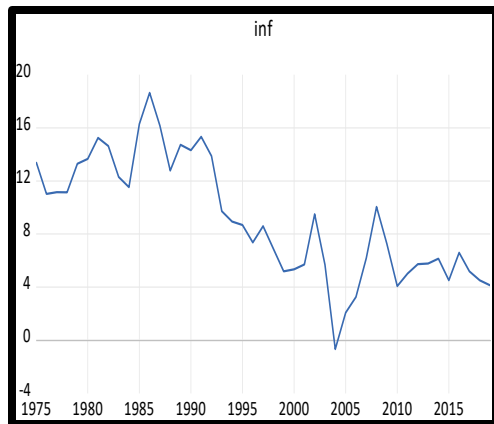
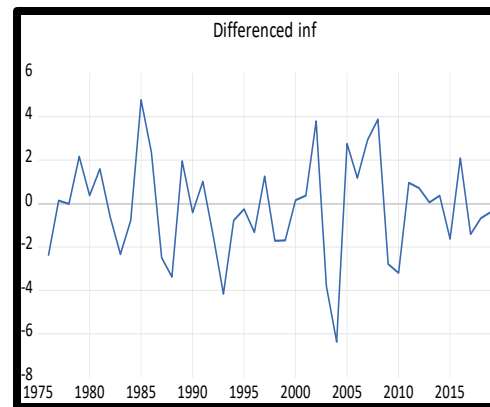


Figure 5.14: Panel B of Inflation at First

Difference



Graph 5.13: shows inflation at level. Though this graph is not stationary at level it has to be repeated in figure 5.14 to show stationarity.

Figure 5.15: Panel A of DCPS at Level

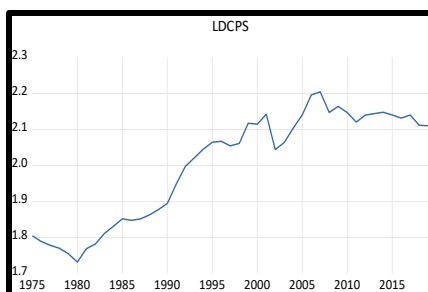


Figure 5.16: Panel B of DCPS at First

Difference

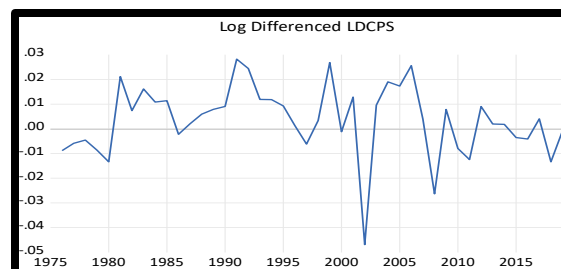


Figure 5.15: show domestic credit to private sector (DCPS), just as the previous graphs, it shows level of non-stationarity at level, but for it to be stationary, figure 5.16 has to be presented.

5.3.2 Empirical Results and Analysis

Table 5.1 shows the results of the ADF Unit Root Tests used to establish the integration order.

Variables	Model Specification	Level	First Difference	Probability at Levels	Probability at First Difference	Order of Integration
Log GDP	Trend & Intercept	[0.6353] (-3.5155)	[-4.9917] ** (-3.5181)	0.9994	0.0011	I(1)
Log Pri.inv	Trend & Intercept	[-2.0399] (-3.5181)	[-5.2676] ** (-3.5208)	0.5635	0.0005	I(1)
Log Pub.inv	Trend & Intercept	[-2.6167] (-3.5181)	[-4.5433]** (-3.5181)	0.2753	0.0039	I(1)
Log NEER	Trend & Intercept	[-1.9905] (-3.5155)	[-5.3141]** (-3.5181)	0.5902	0.0004	I(1)
Log Trade	Trend & Intercept	[-2.1576] (-3.5181)	[-4.6660]** (-3.5181)	0.5002	0.0028	I(1)
Log Pri.Con	Trend & Intercept	[-8.8181] (-3.5181)	[-4.4632]** (-3.5208)	0.9558	0.0049	I(1)
Infation	Trend & Intercept	[-2.8379] (-3.5155)	[-5.5348]** (-3.5266)	0.1922	0.0003	I(1)
Log DCPS	Trend & Intercept	[-0.9318] (-3.5155)	[-5.8594]** (-3.5181)	0.9430	0.0001	I(1)

*At 10% level, statistically significant

**At 5% level, statistically significant

***At 1% level statistically significant

() Stands for test critical value

[] Stands for test statistics

Significance at 5%

Source: Writer's own calculation Using E-View 11

Table 5.1 displays the test for unit root. It becomes indispensable in order to account for the stationarity of the respective macroeconomic variables, thus avoiding spurious regression.

The outcomes of the unit root test showed non-stationary after carrying out the analysis at level. At the first difference, the variables are stationary at 5%. This means that the variables are integrated at the order of I(1) at trend and intercept. As a result, the unit root test is used to analyze the contribution of private investment to economic growth in South Africa over the sample period, with the significance of the results confirmed by a t-test. The results show that the null hypothesis that the series has a unit root is rejected; implying that stationarity exists because the t-statistics are significant and the p-values of all variables are less than the critical value.

5.3.3 Phillip Perron Unit Root

Table 5.2: Results of PP unit root test

Variables	Model Specification	Level	First Difference	Probability At Level	Probability At First Difference	Order of Integration
Log GDP	Trend & Intercept	[0.8716] (-3.5155)	[-7.7888]** (-3.5181)	0.9997	0.0000	I(1)
Log Pri. Inv.	Trend & Intercept	[-0.0496] (-3.5155)	[-4.0292]** (-3.5181)	0.9942	0.0149	I(1)
Log Pub. Inv.	Trend & Intercept	[-1.9952] (-3.5155)	[-4.3110]** (-3.5181)	0.5877	0.0072	I(1)
Log NEER	Trend & Intercept	[-2.2309] (-3.5155)	[-5.2221]** (-3.5181)	0.4614	0.0006	I(1)
Log Trade	Trend & Intercept	[-7.7062] (-3.5155)	[-4.7045]** (-3.5181)	0.7317	0.0025	I(1)
Log Priv. Con	Trend & Intercept	[-1.1902] (-3.5155)	[-4.4521]** (-3.5181)	0.9002	0.0050	I(1)
Inflation.	Trend & Intercept	[-2.8151] (-3.5155)	[-10.2626]** (-3.5181)	0.1998	0.0000	I(1)
Log DCPS	Trend & Intercept	[-0.9318] (-3.5155)	[-5.8340]** (-3.5181)	0.9430	0.0001	I(1)

*At 10% level statistically significant

**At 5% level statistically significant

***At 1% level statistically significant

() Stands for test critical value

[] Stands for test statistics

Significance at 5%

Table 5.2 displays the outcomes of unit root using the Phillips-Perron method. None of the variables are stationary at all levels, but when the difference is made, they all become stationary. Therefore, the null hypothesis can be rejected. The variables are statistically stationary at a 5% level, respectively, with their probability values being less than 5%. Therefore, the entire unit root test shows stationarity in both the two methods of unit root tests that were used, which means that the null hypothesis cannot be accepted. Using Johansen co-integration techniques, the study can now proceed to determine if there is a long-run co-integrating relationship between the variables.

5.4 Testing for Co-integration

Even if some of the variables are stationary on their own, their grouping could be co-integrated. If their linear combination is stationary, non-stationarity might be said to be co-integrated. For instance, $I(0)$. As a result, co-integration requires that non-stationary series be regressed in the same order. However, now that it has been discovered that all of the variables are integrated in sequence, the study is ready to go on " $I(1)$ ". As a result, it is crucial to figure out whether there is a long-term relationship between private investment and economic growth. This indicates that co-integration must be estimated for the variables. However, before going to Johansen co-integration, the lag length must be determined. The lag length can be evaluated using various criteria, such as the Akaike Information Criterion (AIC) and the Hannan-Quinn Criterion (HQ). Different functions are performed by different criteria. When carrying out time-series, it is necessary to choose a proper criterion as displayed below. However, based on the data in table 5.3, it is determined that

optimal lag length 2 is the appropriate lag length to utilize. Therefore, the study selects the AIC criterion. The co-integration test is therefore based on this lag length.

5.4.1 VAR Lag Order Selection Criteria

Table 5.3: Results of VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	330.4185	NA	4.24e-17	-14.99621	-14.66855	-14.87538
1	724.6450	623.4278	9.52e-24	-30.35558	-27.40659*	-29.26808
2	818.9146	114.0005*	3.19e-24*	-31.76347*	-26.19316	-29.70931*

As a result of the data in table 5.3, it can be stated that lag duration is determined by AIC.

Therefore, the long-run equation can be approximated using Johansen co-integration.

5.5 Analysis of Co-integration

Table 5.4 Results of long-run co-integration (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.923874	334.8878	159.5297	0.0000
At most 1*	0.794204	226.7223	125.6154	0.0000
At most 2*	0.666800	160.3258	95.75366	0.0000
At most 3*	0.590731	114.1673	69.81889	0.0000
At most 4*	0.495349	76.64525	47.85613	0.0000
At most 5*	0.463696	47.92192	29.79707	0.0002

At most 6*	0.289408	21.75367	15.49471	0.0050
At most 7*	0.161623	7.404090	3.841465	0.0065

Trace test indicates 8 cointegrating eqn(s) at the 0.05 level

*denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The findings of the Johansen co-integration analysis of the unconstrained co-integration rank test are shown in Table 5.4. The test can be used to see if the variables have reached a long-run equilibrium. Because it integrates a parametric amendment, the Johansen approach produces asymptotically optimal evaluations, and the method nature of the estimator indicates that the evaluations are robust to simultaneity bias. The results show that all of the variables are co-integrated. Because the likelihood is less than 5%, the null hypothesis is to be rejected. Furthermore, the table shows that trace statistics are greater than critical values, indicating that the null hypothesis can be rejected. Furthermore, with no exception, all of the variables are statistically and significantly co-integrated, implying that the variables have a long-run relationship and that VECM may be computed (Hjalmarsson and Osterholm, 2007).

Table 5.5: Unrestricted Co-Integration Test Results (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.923874	108.1656	52.36261	0.0000
At most 1*	0.794204	66.39645	46.23142	0.0001
At most 2*	0.666800	46.15848	40.07757	0.0092
At most 3*	0.590731	37.52210	33.87687	0.0175
At most 4*	0.495349	28.72333	27.58434	0.0356
At most 5	0.463696	26.16824	21.13162	0.0090
At most 6*	0.289408	14.34958	14.26460	0.0485
At most 7*	0.161623	7.404090	3.841465	0.0065

Max-eigenvalue test indicates 8 cointegrating eqn(s) at the 0.05 level

*denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Based on the results in table 5.5, it is clear that the variables are co-integrated. The equation contains eight co-integrations. From the results, however, the probability is less than 5% and the maximum statistics are greater than the critical values. All the variables' co-integrations are indicated statistically, as well as a p-value, indicating that the variables are co-integrated, so the null hypothesis can be rejected. As a result, both the trace test and the max-test indicate that the variables are co-integrated, implying that there is a long-term relationship between them. At the 5% level of significance, both results imply the existence of a co-integrating relationship between GDP and its drivers (Tables 5.4 & 5.5). As a result, the conclusion is that GDP, private investment, public investment, private consumption, inflation, domestic credit to the private sector (DCPS), nominal exchange rate (NEER), and trade openness have an equilibrium convergence relationship. As shown in Table 5.6, the long-run link between private investment and GDP can be determined by normalizing the estimates of the unconstrained co-integrating vector. After estimating long-run co-integrating, the next step is to describe the Johansen normalization equation. The AIC is used to determine the lag. In the short term, the coefficient of private investment has a theorized positive impact on GDP in the normalized equation, which is consistent with the long-run results. The coefficient is significant statistically. However, the study would like to interpret the Johansen normalization equation in order to provide more explanations for the Johansen co-integration test:

In the Johansen normalization equation, the signs of the co-efficients are reversed in the long run:

Table 5.6: The Johansen Normalization Equation

Normalized cointegrating coefficients (standard error in parentheses)

LGDP	LPRIV INV	LPUB INVE	LPRI CON	LTRADE	LNEER	LDCPS	INF
1.000000	-0.417942 (0.08295)	0.037810 (0.01393)	-0.326335 (0.08670)	-0.791403 (0.11068)	-0.280530 (0.05502)	-0.341334 (0.05017)	0.002599 (0.00105)

LGDP	LPRIV_INV	LPUB_INV	LPRI_CON	LTRADE	LNEER	LDCPS	INF
1.000000	-0.417942 (0.08295)	0.037810 (0.01393)	-0.326335 (0.08670)	-0.791403 (0.11068)	-0.280530 (0.05502)	-0.341334 (0.05017)	0.002599 (0.00105)

This can however be written as:

$$\begin{aligned} \text{LGDP} &+ 0.417942\text{LPRI.INV} - 0.037810\text{LPUB.INV} + 0.326335\text{LPRIV.CON.} + \\ &0.791403\text{LTRADE} + 0.280530\text{LNEER} + 0.341334\text{LDCPS} - 0.002599 \text{ INF} \end{aligned} \quad (1)$$

In the long run, the signs of the coefficients in the Johansen normalization equation are reversed, as previously stated. Private investment, on average, ceteris paribus, has a positive impact on GDP in the long run. Private consumption has a positive impact on GDP, as does trade, the exchange rate, and domestic credit to the private sector. Public investment and inflation have a negative impact on GDP. At 1%, the coefficients are statistically significant. As a result, the null hypothesis of no co-integration in the model is rejected in favour of the alternative of a co-integrating relationship. The findings demonstrate that the variables in South Africa have a unique co-integration relationship. For the explanation of real private investment in South Africa, the private investment model is normalized, and both the dependent and independent variables are treated as the "long run." The study, on the other hand, can move forward with the VECM estimate.

5.6 Vector Error Correction Model (VECM)

The VECM analysis is only evident when the series are co-integrated; this merely indicates that they are in long-run equilibrium. It can also be used to estimate the co-integrated series' short-run properties. Table 5.7 explains how a negative and significant VECM coefficient indicates that any short-term instability between the dependent and independent variables will increase the long-run relationship between them. The results show that private investment, public investment, and inflation all have a positive impact on GDP, but private consumption, the exchange rate, trade openness, and credit to the private sector (DCPS) all have a negative but significant impact on GDP over time. The coefficient is likewise significant, according to the results.

5.6.1 Long Run Equilibrium

Table 5.7: Vector Error Correction Model

Variables	LGDP(-1)	LPRIV_INV(-1)	LPUB_INV(1)	LPRI_CON(-1)	LNEER(-1)	LDCPS(-1)	INF(-1)	LTRADE(-1)
Coefficient	1.000000	0.524904 (0.27349) [1.91925]	0.103051 (0.06032) [1.70827]	-1.502320 (0.27146) [-5.53431]	-1.095845 (0.17433) [-6.28592]	-0.397096 (0.20964) [-1.89419]	0.017111 (0.00355) [4.82481]	-1.258786 (0.44510) [-2.82811]

$$\begin{aligned}
 ECT_{t-1} = & [1.000000LGDP_{t-1} + 0.524904LPRIV.INV_{t-1} + 0.103051LPUB.INV_{t-1} - \\
 & 1.502320LPRI.CON_{t-1} - 1.095845LNEER_{t-1} - 0.397096LDCPS_{t-1} + 0.017111INF_{t-1} - \\
 & 1.258786LTRADE_{t-1} + 5.434469]
 \end{aligned}
 \tag{2}$$

The above equation signifies a co-integrating error correction term model in the long-run relationship among the variables. The empirical findings show that private investment is positive, as expected, and has a relationship with economic growth. A 1% increase in private investment

leads to a 0.52% increase in economic growth. This should be the case, because a contribution from private investment is intended to add to a rise in GDP, according to the Keynesian approach. However, it is found to be statistically insignificant.

Furthermore, a 1% rise in public investment resulted in a 0.10% increase in GDP, though this was found to be statistically insignificant given its t-value (test statistic). Also, a unit rise in private consumption results in a 1.50 decrease in GDP and is found to be significant. It was also established from the empirical results that the exchange rate exerts a significant impact on economic growth. A 1% increase in the exchange rate results in a decline of GDP by 1.09%. The remaining variables of LDCPS, INF, and LTRADE describe varying effects on South Africa's economic growth. While INF and LTRADE were found to be statistically significant, it is, however, contrary in respect of LDCPS. A 1% increase in the coefficient of trade openness results in a 1.25% decrease in GDP. In addition, a unit increase in domestic credit to the private sector (DCPS) leads to a 0.39 decrease in GDP. It is expected that domestic credit extended to the private sector stimulates GDP. However, this is contradicted in the current study, which could be due to the possibility of fund misuse arising from asymmetric information, which could be moral hazard or adverse selection. Finally, empirical findings show that a one-percentage-point increase in inflation raises GDP by 0.01%.

5.6.2 Equilibrium in the Short Run

Table 5.8: Equilibrium in the Short Run

Error Correction:	D(LGDP)	D(LPRIV_INVE)	D(LPUB_INVE)	D(LPRI_CON)	D(LNEER)	D(LDCPS)	D(INF)	D(LTRADE)
CointEq1	-0.076616 (0.03282) [-2.33466]	-0.089484 (0.08036) [-1.11355]	0.011076 (0.03238) [0.34213]	0.017741 (0.17120) [0.10363]	-0.020427 (0.06526) [-0.31302]	0.102509 (0.08316) [1.23275]	0.000315 (0.00117) [0.26830]	-0.011993 (0.22216) [-0.05398]
$R^2 = 0.588465$ Adj. $R^2 = 0.476229$								

The Short Run equilibrium can be re-written thus:

$$\begin{aligned}
\Delta GDP_t = & -0.076616 ECT_{t-1} + 0.596099 LGDP_{t-1} - 0.089484 \Delta LPRI.INV_{t-1} + \\
& 0.011076 \Delta LPUB.INV_{t-1} + 0.017741 \Delta LPRI.CON_{t-1} - 0.020427 \Delta LNEER_{t-1} \\
& + 0.102509 \Delta LDCPS_{t-1} - 0.000315 \Delta LINF_{t-1} - 0.011993 \Delta LTRADE_{t-1} + 0.019020 \quad (3)
\end{aligned}$$

Table 5.8 displays the short run VECM results, showing that all the explanatory variables are not statistically significant in the short run. A 1% rise in private investment is associated with a 0.08% decrease in GDP. Furthermore, a 0.01% increase in GDP is related to a one-percent increase in public investment, ceteris paribus. According to the findings, LPRI_CON, LDCPS, and the inflation rate all had a positive impact on economic growth. A unit increase in private consumption, domestic credit to the private sector, and the inflation rate, in particular, increase GDP by 0.01,

0.10, and 0.0003, respectively. Also stemming from the results is the observation that a one percent rise in the exchange rate reduces GDP by 0.02%.

Of crucial consideration is the error correction term, which shows the speed of adjustment of all the variables in the long run. Its coefficient in this study was found to be statistically significant. This implies that a long-run equilibrium convergence exists among all the variables characterized by an annual speed of seven percent whenever the system deviates from the long-run equilibrium path. The error correction term also provides information that, though the respective variables are individually not statistically significant in the short run, they do, however, jointly influence GDP.

5.7 The Interpretation and the Discussion of the Empirical Results

The foregoing result is in line with the study by Molocwa *et al.* (2018) that analyzed the determinants of private investment in South Africa from 1994–2015. The results show that there is a positive relationship between private investment and economic growth. In addition, the study of Sesele 2017 corroborates the current empirical findings. The author examined the determinants of private investment in South Africa over the period 1980–2014. The study established evidence of a positive relationship between private investment and economic growth.

The coefficient results of public investment in the long-run equilibrium as well as the short-run indicate a positive relationship with respect to GDP. Such an insignificant but positive effect of public investment on GDP can be attributed to the inefficient use of earmarked public resources by various governments' investment plans. Other factors include the embezzlement of public funds and the inappropriate lodgment of public funds in banks domiciled in developed economies in order to earn undue returns, thus constraining the expected positive and desirable impacts of public

investment on GDP. In line with the foregoing explanation is the study by Suhendra and Anwar (2014). The authors carried out research on the determinants of private investment on economic growth from 1990–2011 and confirmed the evidence of positive impacts of public investment on economic growth in Indonesia. In another vein, the study by Ghani and Din for the period 1973–2004 analyzed the impact of public investment on economic growth in Pakistan and found evidence of the insignificance of public investment on economic growth.

The result of private consumption in the long run shows a negative but significant effect on GDP. The negative impact of private consumption on economic growth can be explained within the context of what constitutes the consumption style of citizens. For instance, an increase in demand for foreign goods at the expense of locally produced goods will tend to stimulate foreign GDP while dampening domestic economic activity, discouraging private sector investment and consequently restricting economic growth. These empirical results can be supported by Kalu and Mgbemena (2015) in their study on domestic private investment and economic growth in Nigeria during the period 1970 to 2012, which concluded the importance of private consumption to the economic growth of Nigeria.

The exchange rate under study exerts a statistically significant but negative impact on economic growth. Investors who rely heavily on the importation of certain inputs, such as equipment, raw materials, and foreign expertise, may be sensitive to changes in the exchange rate. Therefore, appreciation of a foreign currency against the South African Rand will result in the high cost of importing certain raw materials, which may invariably constrain the level of productivity and eventually decrease GDP. Thus, the Keynesian model hypothesizes that a rise in imports, likened to exports, will have a negative effect on real GDP via the trade balance. The result is similar to

the work of Matsila (2013) in his research on the impact of the exchange rate on economic growth during the period 1980–2012 in South Africa, who arrived at the conclusion that the exchange rate has a negative impact on the economy of that country.

Moreover, a negative but significant relationship exists between trade openness and economic growth in both periods. The possible reason for the negativity is traceable to the reality that citizens in the South African economy may give preference to foreign-produced goods at the expense of locally manufactured goods. This will thus widen the gap between import and export, which invariably may depress domestic economic activity and consequently result in a decline in GDP. This result can also be confirmed by Attefah and Enning (2016), who conducted research on the determinants of private investment in Ghana for the period 1980–2010 and concluded that trade openness has a significant relationship with private investment.

The inflation rate generates a statistically significant positive effect on economic growth. A period of moderate inflation, particularly if the prices of raw materials and other factor inputs remain low, is expected to encourage more investment and, as a result, stimulate GDP.

This is in line with the results found by Naa-Ida et al. (2012), who conducted research on time series analysis of determinants of private investment in Ghana from 1960 to 2010. The results show that inflation was significant. Furthermore, the R^2 and adjusted R^2 are both greater than 5%, indicating that independent variables account for the majority of the variance in the dependent variable.

Furthermore, Asiri, Baharuddin, Jusoh, Mohamad, Shamsudin, and Jusaff (2011) concluded that a negative and significant coefficient of VECM indicates that any short-term fluctuation between

the dependent and independent variables will result in long-run stability. In addition, the coefficient of the error terms, as shown above, reveals the speed of adjustment. The coefficients of the error correction terms are read as the speed of adjustment to long-run equilibrium, as Chipaumire et al. (2014) correctly stated. However, diagnostic tests and stability tests will be used to confirm the model and to see if GDP as a dependent variable has any statistical error. These tests will allow the time series to be modelled accurately. In addition, the study will use OLS regression analysis to estimate the degree of private investment's effect on economic growth in South Africa.

5.8 Regression analysis

Table 5.9: Model 1 Regression Analysis

Variable	Coefficient	Std.Error	t-Statistic	Prob.
LPRIV_INVE(-2)	0.276571	0.040987	6.747725	0.0000
LPUB_INVE	-0.024091	0.013426	-1.794356	0.0817
LPRI_CON(-3)	0.551210	0.033709	16.35215	0.0000
LNEER	-0.039909	0.032360	-1.233277	0.2259
LTRADE(-2)	-0.274287	0.085526	-3.207057	0.0029
LDCPS(-1)	0.271230	0.041821	6.485459	0.0000
INF	-0.003651	0.000593	-6.158346	0.0000
C	0.380465	0.207067	1.837400	0.0749
R-squared	0.999768	Mean dependent var		4.091604
Adjusted R-squared	0.999720	S.D. dependent var		0.566458
S.E. of regression	0.009481	Akaike info criterion		-6.309453

Sum squared resid	0.003056	Schwarz criterion	-5.978468
Log likelihood	140.4985	Hannan-Quinn criter.	-6.188134
F-statistic	20904.04	Durbin-Watson stat	2.199708
Prob(F-statistic)	0.000000		

In model 1, GDP is employed as a proxy for economic growth, while the explanatory variables are private investment, public investment, private consumption, exchange rate, trade openness, domestic credit to the private sector (DCPS), and inflation. From the results, the (R^2) of the projected model reveals that about 99% of the variability in the GDP is accounted for by PRIV.INV, PRI.CON, DCPS, INF AND TRADE for the period 1975-2019.

The F-Statistic of 20904.04 is an indication that the regression is significant at the 1% and 5% levels. This also demonstrates that private investment accounts for nearly all of the changes in South Africa's economic growth. The Durbin-Watson value is 2.199708, which indicates that there is no serial correlation. Furthermore, the regression coefficient demonstrates that some of the variables have a positive relationship with real GDP, which is consistent with theoretical assumptions. Nonetheless, according to the theoretical basis exchange rate, public investment and inflation have a negative correlation with GDP, while inflation and trade openness have a statistically significant relationship with GDP. If all other factors remain constant, a unit increase in private investment, private consumption, and domestic credit to the private sector (DCPS) will result in GDP increases of 0.276571, 0.551210, and 0.123397, respectively. Regression results, on the other hand, can be rewritten as:

$$GDP_t = LPRIV_INV_t - LPUB_INV_t + LPRI_CON_t - LNEER_t - LTRADE_t + LDCPS_INF_t + C$$

This can also be understood as a 1% rise in private investment will result in a 0.27% increase in GDP, while a 1% increase in private consumption would result in a 0.02% increase in GDP. On the other hand, a 1% increase in trade will result in a -0.27% decrease in GDP, while a 1% increase in inflation will result in a -3.6% decrease in GDP.

Table 5.10: Model 2: Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPUB_INVE(-1)	0.150398	0.038642	3.892102	0.0004
LPRI_CON(-2)	1.260798	0.173825	7.253242	0.0000
LTRADE(-3)	0.542575	0.259897	2.087654	0.0444
LGDP	-0.712983	0.227754	-3.130492	0.0036
LDCPS(-1)	0.693465	0.138687	5.000226	0.0000
LNEER(-3)	0.172417	0.093915	1.835880	0.0751
INF	-0.004578	0.002213	-2.068352	0.0463
C	-1.538827	0.517269	-2.974908	0.0054
R-squared	0.998389	Mean dependent var		4.789054
Adjusted R-squared	0.998058	S.D. dependent var		0.659766
S.E. of regression	0.029078	Akaike info criterion		-4.068019
Sum squared resid	0.028748	Schwarz criterion		-3.737035
Log likelihood	93.42841	Hannan-Quinn criter.		-3.946700
F-statistic	3010.464	Durbin-Watson stat		1.576974
Prob(F-statistic)	0.000000			

The study's major goal was to determine the contribution of private investment to South Africa's economic growth. Furthermore, the study examined another goal for this research, which is the determinants of private investment for economic growth in South Africa, from which MODEL 2 came into existence. In certain cases, private investment is used as a proxy for economic growth. Independent variables include public investment, private consumption, inflation, DCPS, GDP, exchange rate, and trade. Investment, which is a powerful tool for alleviating poverty, is a driving force behind South Africa's economic growth. Private investment, on the other hand, is one of the most important investment apparatuses. However, various factors, particularly in the long run, influence the performance of private investment. As a result, the relationship between private investment and other explanatory factors was explained by model 2 above. According to Castillo (2021), using lagged value in an analysis may provide a stronger or significant effect, and this was exactly what was introduced in the regression models above. The results of model 2 reveal that there is a significant and positive relationship between private investments and GDP. The labor, inflation, private consumption, and DCPS coefficients are all positive. In South Africa, domestic credit to the private sector, labour and private consumption have a considerable and positive impact on private investment. Not only that, the (R^2) is evidence of the relationship of private investment as a proxy of determinants to economic growth, which stands at 99%. The F-Statistics is also evidence that private investment is significant, which is 3010.464, and more so, Durbin-Watson stands as proof that there is no existence of serial correlation, which is 1.576974. According to Field (2009), values of under 1 or more than 3 are a definite cause for concern. The rule of thumb is that Durbin-Watson statistic values in the range of 1.5 to 2.5 are relatively normal. This means that the Durbin-Watson statistic for model 2 is normal. The study will therefore proceed to estimate diagnostic and stability tests for more accuracy in the results.

5.9 Results of Diagnostic and Stability Tests

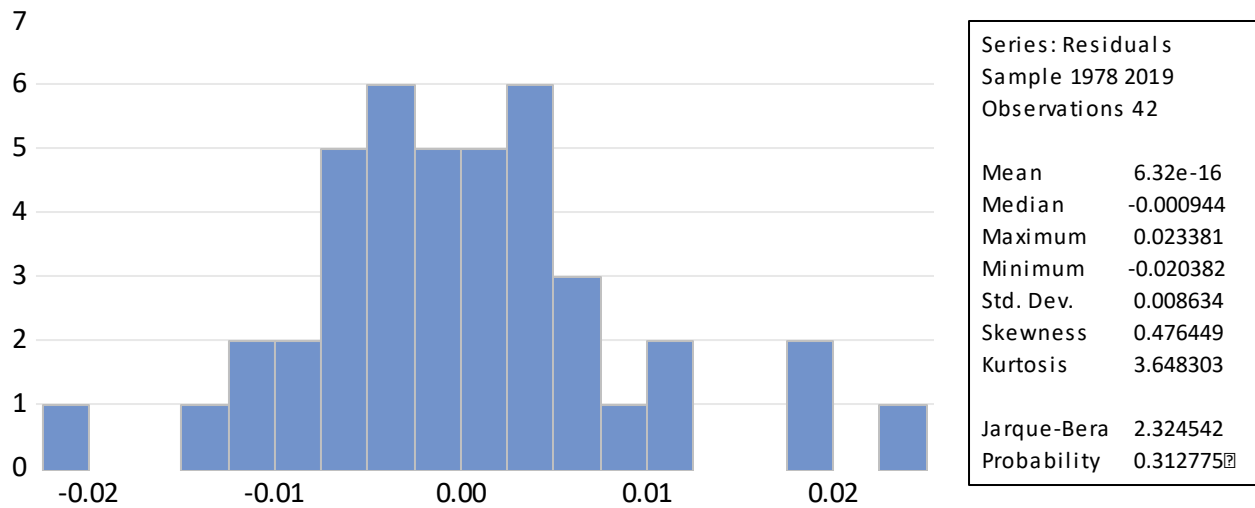
Table 5.11: VEC Residual Serial Correlation LM Tests

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob,
1	84.28335	64	0.0455	1.405846	(64,110.3)	0.0585
2	72.55347	64	0.2168	1.156568	(64, 110.3)	0.2494

The VECM residual serial correlation test was used to test for the null hypothesis of no serial correlation of order one. The Akaike and Schwartz information criteria were used to determine the arrangement. According to the results of the VEC serial correlation, there is no serial relationship. Because the likelihood value is greater than 5%, this is important. As a result, the null hypothesis that no serial correlation exists is accepted. The research will continue with a normality test to examine if the variables are normally distributed.

Figure 5.17: Residual Normality Tests



The Jarque-Bera test can be used to determine whether or not the variables are normally distributed. According to the rule of thumb, the null hypothesis is accepted if the p-value is less than the 0.05 threshold of significance. However, because the p-value is significant and satisfactory, the null hypothesis can be rejected because the probability is greater than 5%. Therefore, the residual is normally distributed as shown above. There are no instances of multicollinearity among regressors, and the data is normally distributed. The study will also carry out a heteroscedasticity test.

Table 5.13: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoskedasticity

F-statistic	0.958943	Prob. F(7,34)	0.4760
Obs*R-squared	6.924867	Prob. Chi-Squared(7)	0.4367
Scaled explained SS	6.009084	Prob. Chi-Squared(7)	0.5387

The results of heteroscedasticity are shown in the table above; the probability values are also significant. The level of significance is greater than 5%, indicating homoscedasticity. This suggests that the null hypothesis, that there is no heteroscedasticity, can be rejected. As a result, the outcome is significant. The results indicated that the model passed all of the tests, indicating that there were no issues with heteroscedasticity or serial correlation. The impulse response function was further used in this work for greater variable stability. Furthermore, testing for model mis-specification is necessary to determine whether the model has omitted any variables or has an improper functional form, as well as to determine whether there is a relationship between explanatory variables and residuals. As a result, the Ramsey reset test was used to assess the variables' stability.

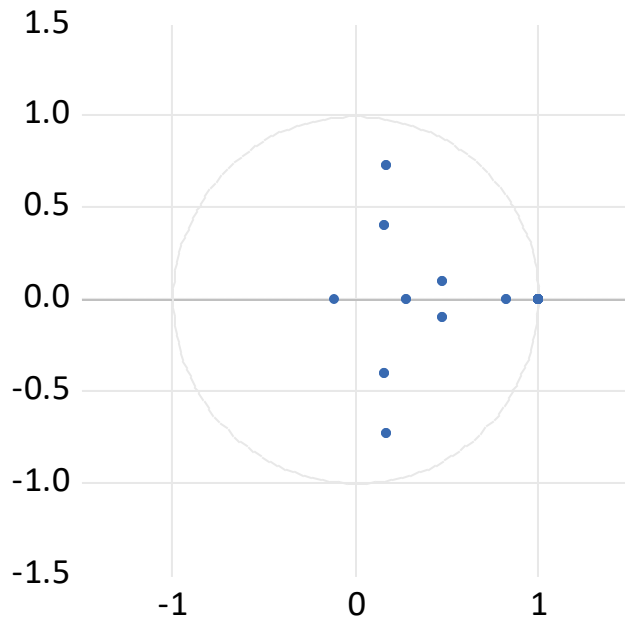
Table 5.14: Ramsey Reset Test.**Ramsey reset test**

	Value	Df	Probability
t-statistic	0.615566	33	0.5424
F-statistic	0.378921	(1, 33)	0.5424
Likelihood ratio	0.479516	1	0.4886

The regression specification error test is another name for this test. The probability is greater than 0.05. The null hypothesis of mis-specification can be rejected. The model is accurately specified.

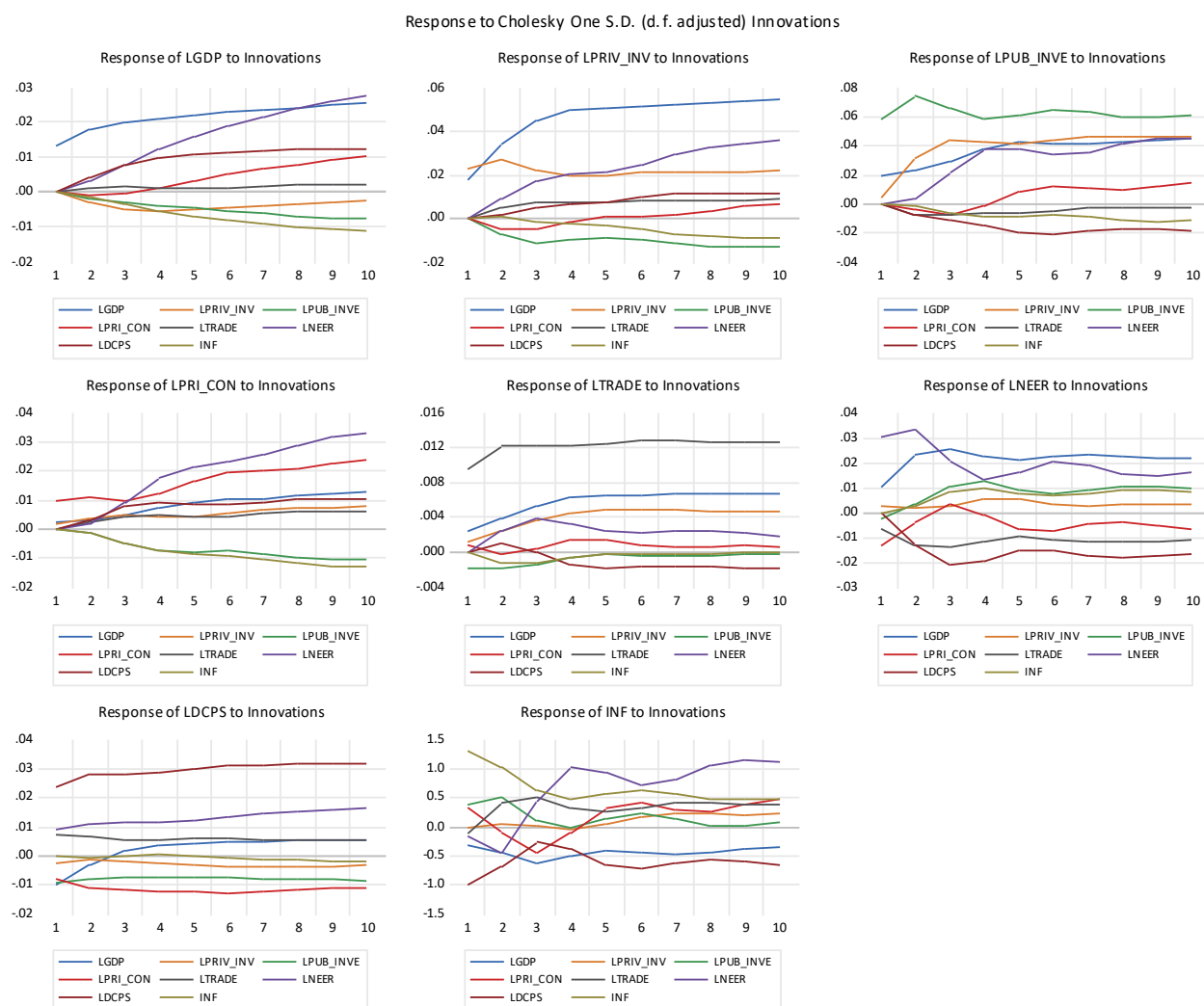
Figure 5.19: Inverse Root of AR

Inverse Roots of AR Characteristic Polynomial



The figure above shows the Inverse AR Roots Characteristics Polynomial. As observed from the figure, all the points lie within the circle, which implies that the model is stable for policy formulation.

Figure 5.19: Impulse Response Function



Author's own calculations using E-views.

For the period 1975–2019, the above table shows the response of private investment, public investment, private consumption, exchange rate, inflation, DCPS, and trade openness to GDP for ten periods using Cholesky methods, which Ronayne (2011) considers the simplest techniques to implement and understand. The graph shows that GDP responds positively to innovation. It is clear from the graph that private investment has a positive association with GDP. There has been an increase in the GDP for the last ten years. Private investment, though significant, fluctuates for the

first period and then drops to rise again. The reaction of public investment is also inconsistent at times, rising toward the conclusion of the period. Private consumption, like inflation, responds positively to shocks. However, the exchange rate's response was not particularly steady, and, towards the end of the period, it became stagnant. The DCPS's reaction to a shock is not promising, because rising credit levels sometimes deter investors from investing. According to Lu and Zin (2010), the response of independent variables to the dependent variable is positive. This suggests that a positive shock in private investment causes GDP to respond positively. Furthermore, the response of variables to shock can be concluded to be consistent.

5.10 Conclusion

Chapter 5 used VECM and OLS to determine the contribution of private investment to economic growth in South Africa. VECM and the Johansen co-integration model were also used to estimate co-integration between dependent and independent variables. Furthermore, ECT was used in the study to create a short-run relationship for VECM. As expected, the analysis found that private investment has a positive impact on South Africa's economic growth in the long run. This suggests that private investment has a long-run positive effect. The outcome of Johansen co-integration revealed that the variables had an equilibrium convergence relationship. Both the long-run and short-run equilibrium relationships were determined using both the trace and maximum Johansen methods. However, because the coefficient is significant and positive in the long run, the data confirmed the existence of a long-run relationship between the independent variables and the dependent variable. Furthermore, the short-run result is significant and positive, indicating that there is a relationship between the variables. In addition, the result of normalization co-integrating is yet another example of an equilibrium relationship between private investment and economic

growth. A positive sign was seen in private investment. Stability, serial correlation, normality, heteroscedasticity, and impulse response tests were all used to establish the relationship between private investment and economic growth in South Africa, and all of the results were significant and normal. Furthermore, when a shock was applied to the error term, the impulse response test revealed responsiveness. Finally, the study created two models, one based on the relevance of private investment to economic growth in South Africa and the other on the determinants of private investment in South Africa. The two models were statistically significant and positive, confirming the link between private investment and South African economic growth. In the next chapter, the study will describe the strategy needed to boost private investment's contribution to economic growth.

Chapter Six.

Conclusions and Recommendations

6.1 Introduction

Chapter six is the conclusion of the whole thesis as it summarizes the whole thesis from chapter one to chapter five. It actually concludes the impact of private investment on economic growth in South Africa. This chapter discusses the outcome of the results of the analysis carried out in Chapter Five. However, it explains the contribution of the study and the gaps that the study fills, thereby revealing the importance of the study. Chapter six is the summation of the policy implications and the recommendations.

6.2 Discussion of Results

The main objective of this research is to highlight the significance of private investment for economic growth in South Africa. Many studies have been carried out on the importance of investment, but this study was specifically based on private investment and also on the determinants of private investment to growth, and this is the gap that this study tried to fill. The study used VECM and Johansen co-integration to see if there is any relationship between private investment and economic growth in South Africa. After the estimation of the results, it was discovered that there was a co-integration relationship among the variables after using both the trace and maximum methods of Johansen techniques. The study went further to solidify the result by carrying out the Johansen Normalization Equation, and it was revealed that private investment has a positive and significant relationship with South Africa's economic growth. Moreover, the

results of the Vector Error Correction Model (VECM) revealed that it was positive and significant in the long-run as well as in the short-run. In addition, the study used regression analysis to discover the R^2 of the variables and their adjustment R^2 . The Durbin-Watson statistics were screened, which were favourable and significant. This study, as previously announced, dealt with 2 models. The first model was based on the contribution of private investment to economic growth, while the second model was based on the determinants of private investment to economic growth. All the diagnostic tests showed good results, including the impulse response function, which responded positively to economic growth.

6.3 Contribution of the Study

As previously mentioned in the preceding chapters, this study helped to fill the gaps by throwing more light on the contribution of private investment to the economic growth of South Africa. In particular, this study made an effort to understand the steps that have been taken by the government of South Africa to contribute to the improvement of private investment and how they can encourage investor behavior by making the environment conducive for investing. The study teaches us how to subdue challenges that are hindering private investment. Not only that, the results revealed that South Africa as a nation needs to wake up and give pre-eminent attention to the upliftment of private investment.

6.4 Chapter Summaries

6.4.1 Chapter One

The purpose of this study was to look into the role of private investment in South Africa's economic growth. It was divided into six sections. The first chapter of the report focused on the influence of

investment on South Africa's economy. Private, public, and foreign direct investment were all divided into three categories. According to Maryam and Nazima (2012), investment is an important component of aggregate demand and a source of lending for economic growth. The chapter discussed private investment as a crucial factor in economic growth as well. According to Sial, Hashmi, and Anwar (2010), countries that invest a large portion of their GDP expand faster economically than those that do not.

The chapter enumerated the problems that faced the development of economic growth, such as unemployment, poverty, and inequality. It was shown that declining investment has been one of the problems facing South Africa. Low real returns on capital may be to blame for the drop in investment, which is why one of the study's objectives was to assess the success prospects of ongoing investment recruitment activities and make recommendations for how they might be channeled to contribute to the economy's growth.

6.4.2 Chapter Two

The study's literature review was reported in Chapter 2, along with the research gaps. The chapter explains the relationship between private investment and economic growth in South Africa, as well as the fact that private investment in the country is relatively low when compared to other developing countries (Nwakoby and Bernard, 2016). The chapter compared and contrasted South Africa's economic growth during and after apartheid. The chapter also helped to identify the factors that influence private investment and economic growth. It demonstrates why, despite the participation of private investment, South Africa's economic growth has been weak. The chapter elaborated on empirical studies conducted by various scholars on private and economic growth in South Africa and other nations. It went into further detail about the factors that influence foreign

direct investment (FDI) and how FDI contributes to South Africa's economic growth. It was concluded that the most important aspects of FDI were macroeconomic, political, and policy consistency.

Moreover, the chapter presented a theoretical framework from which the method of analysis for this study was derived. It presented theories such as Keynesian and growth theories from which the study adopted its model. The chapter extensively presented some models that relate to investment, such as the neo-classical investment model, the McKinnon and Shaw model, the Harrod-Domar growth model, Adam Smith and the Wealth of Nations, the endogenous growth model, the model of economic growth, economic growth theories, investment theories, and also the theory of economic policy.

6.4.3 Chapter 3

Chapter 3 is heavily centered on an outline of South Africa's economic growth. The chapter described the economic realities before and after apartheid. Because of the Gini coefficient and income inequality, South Africa is regarded as one of the countries with unequal societies. The chapter focused on the sectoral contribution to GDP to understand the history of South Africa's economy. It reviewed the macroeconomic performance along with growth, exports, imports, and investment, including government spending on growth. It elaborated on South Africa's investment climate and business environment. According to Ndikumana (2005), the country was stable until the mid-1970s, after which it has been on a gradual slide, affecting the pace of capital accumulation. The chapter discussed South Africa's investment promotion activities. The promotion of private investment has been the government's lifeblood. It has been the duty of the DTIC to contribute relatively to the promotion of investment both in the nation and globally.

Investment promotion has been a subject of debate on macroeconomic policies such as the Growth Employment and Redistribution Strategy (GEAR) from many political perspectives. In addition, the chapter discussed the relationship between private investment, state investment, and foreign direct investment, as well as the role each plays in South Africa's economic growth.

6.4.4 Chapter 4

The study's methodologies and estimating strategies were discussed in Chapter 4. The study's research design was described in detail. The picture of private investment in South Africa was determined using quantitative research. The environment and samples used were described in Section 4.3. The study was described as being based in South Africa and including 45 observations from the SARB and World Development Indicators from 1975 to 2019. The variables employed in the investigation were defined in Section 4.4. The models estimated for the investigation and the methodology were the subjects of Section 4.5. In this chapter, two models were estimated. The first model used GDP as a dependent variable to reflect the contribution of private investment to economic growth in South Africa. The second model represented the determinants of private investment, using private investment as the dependent variable. Section 4.5.2 also elaborated on the model requirements for the study. VECM was used as a model for the study, and the chapter elaborated on the requirements needed for carrying out the model. Section 4.6 identified the model diagnostics used for the study. It explained the stationarity procedure while applying ADF, the co-integration procedure in the order of $I(1)$ using the Johansen techniques, and the VECM after the variables have been co-integrated. In conclusion, the chapter explained the expected normality and stability tests.

6.4.5 Chapter 5

The study's empirical findings are provided in Chapter 5. The estimation approach that was built is detailed in this chapter. The chapter was structured into different sections. The first section explained how the stationarity test was performed. It showed the graphical representation of each variable. Panel "A" stands for variables at all levels, while panel "B" represents variables at the first difference with their explanation. The goal of this chapter was to use modern time series econometric approaches like stationarity, co-integration, and the Vector Error Correction Model to empirically uncover the contribution of private investment to economic growth in South Africa. With no exception, the unit root test at this level provides indications of non-stationarity. However, at first difference $I(1)$, the variables reveal stationarity characteristics, leading to the conclusion that all variables are integrated at first order $I(1)$. The amount of integration among the variables was determined using the Johansen likelihood co-integration technique. In both the trace and maximum procedures, the co-integration results were significant and positive, indicating that a co-integration relationship existed, indicating the presence of a long-term relationship between the variables. As a result, at a 5% level of significance, the statistic is greater than the critical value. According to the study, improving and reinforcing private investment would help to raise the real GDP. According to the coefficient determination result, private investment may well direct roughly 99 percent of the difference in economic growth.

The study's econometric findings support the existence of a short-run dynamic adjustment and a long-run equilibrium relationship between all macroeconomic factors and private investment. Positive and substantial findings were obtained using the Johansen normalization co-integrating

coefficient. A long-run equilibrium was found in private investment, public investment, and private consumption, with positive results.

According to VECM, private investment, public investment, and inflation all have a positive relationship with GDP in the long run, but private consumption, the exchange rate, and trade openness all have a negative but statistically significant impact on economic growth. However, under normal circumstances, credit-giving to the private sector ought to have a positive influence on investment since the availability of credit to investors is supposed to encourage and motivate the investors to participate fully. Moreover, in the short-run, public investment, private consumption, credit to private investment (DCPS), and inflation coefficients were positive for economic growth, while trade openness and private investment coefficients were negative for economic growth. However, it may be inferred that trade openness is significant to economic growth in the long run. It is clear from the analysis that public investment outperforms private investment in terms of contributing to economic growth in South Africa positively. Public investment was considerable and positive both in the long run and the short run, while private investment, though positive in the long run, was negative in the short run. The diagnostic results are provided in section 5.8. It showed that there was no serial correlation and that the variables were normally distributed. There was no heteroscedasticity; there was stability among the variables; and there was also a presentation of an impulse response function, which showed that the reaction of variables to shock is consistent.

6.5 Policy Implications/Recommendations

- **Policy Prescriptions**

The findings of the study demonstrated the importance of private investment to economic growth. According to the study, macroeconomic variables such as private investment, private consumption, trade, the exchange rate, and public investment drive the majority of economic growth. However, several of these variables account for a large portion of the instability in the GDP. However, these findings point to a possible future policy framework in South Africa.

Private investment, for instance, was not statistically significant in either the long-run or short-run even though it was positive in the long-run. Therefore, private investment can be improved through the maintenance of macroeconomic and fiscal stability measures, which constitute significant preconditions for the success of any policy related to domestic private investment. There is a need for both political stability and monetary policy improvement. In addition, public private investment should be seen as an avenue for complementing private investment because private investment would contribute more to GDP than foreign investment.

- **Improving the Investment Climate**

A favourable investment climate is required in the country. It provides a more stable economic environment, encouraging investors to take advantage of more lucrative opportunities (Serven and Solimano, 1993). Inflation and credit availability are two of the macroeconomic stability indicators. Inflation has a beneficial impact on economic growth in both the long and short run, which is why it is not a good indicator. High inflation rates have a negative impact on profitability, as evidenced by the study's findings in both the short and long term. When inflation is low, however, consumers and businesses are encouraged to make long-term plans

because they assume their money's purchasing power will hold and not decrease year after year. A lack of credit may deter investors from fully participating in investments. The analysis confirms that credit availability acts as a barrier to investors since the coefficient is negative in the long run but positive in the short run, as expected. There is a need, therefore, to take all these into proper consideration so as to enhance investor confidence.

- **Structural Reform Programme**

From the study, trade openness has a positive impact on growth in the long-run and a negative one in the short-run, even though it is significant. Structural improvements must be made in order to estimate the current and future profitability of private investments. The structural reform index, on the other hand, includes a trade policy component. As a result, policymakers should design policies that encourage exports while reducing imports.

- **Aggregate Donor Resources and Stimulating Economic Partnership**

As projected in Vision 2030, private investment can alleviate suffering and create jobs (Gok, 2007). Donor funding is especially needed in the areas of transportation, energy, and communication, as well as economic collaboration. However, precautions should be taken so as to use these aids appropriately, efficiently, and effectively.

- **Growing Output**

The impact of private investment on economic growth is beneficial. There is a need for more private investment to combat poverty. Therefore, there is a need for policy-makers to focus on improving the welfare of the masses by increasing their per capita incomes, education, and access to proper health care if output must improve.

Based on the preceding analysis, private investment may be improved by maintaining macroeconomic and fiscal stability measures, which are critical preconditions for the success of any private investment programme. For example, while the study's credit to the private sector is negative only in the near term, it is important to ensure that credit levels do not surpass the threshold of 30% of GDP, which is required for investment growth. Furthermore, public investment should be viewed as a means of supplementing private investment. This is because, in comparison to foreign investment, private investment would contribute to real GDP.

6.6 Limitation of the Study and Area for Further Research

The eight variables considered in the study were: private investment, public investment, private consumption, labor, trade openness, domestic credit to the private sector (DCPS), and inflation. Due to limitations such as lack of data, the study would have wanted to use quarterly data, which could have enhanced the results. However, this is a drawback. As a result, other researchers may use different methodologies to improve their findings in the future.

6.7 Conclusion

Chapter 6 concluded the whole thesis by bringing together what the study was all about. It comprises five sections. The first section explained the results of the presentation in chapter 5. The second section pointed to the importance of the study and what the study tried to accomplish. The next sections elaborated on the summary of the chapters, their objectives, and their accomplishments. The last section elaborated on the policy implementation and the limitations of the study. For example, how policies can help to boost private investment in South Africa by improving the investment climate, implementing structural reform programmes, aggregating donor resources and stimulating economic partnerships. In addition, it concluded with the fact that

there is a need for growing output. The policy-makers are to enhance the productivity outreach by encouraging the welfare of the masses to improve their per capita income, their educational levels, as well as their health. Policymakers need to improve the level of private investment by stimulating investor interest and improving the environment for investors. The policy recommendation that has been made has an impact and consequences on development.

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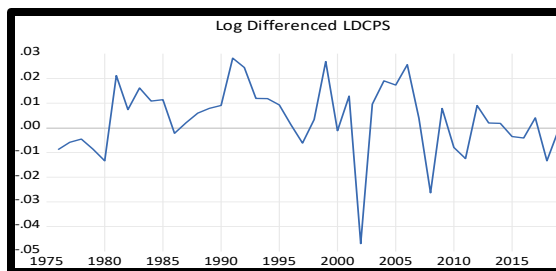
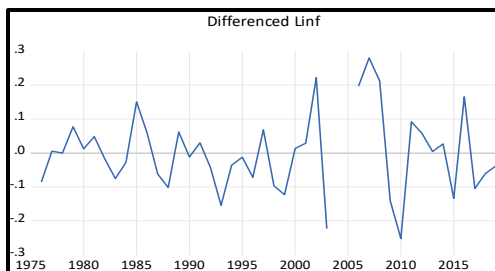
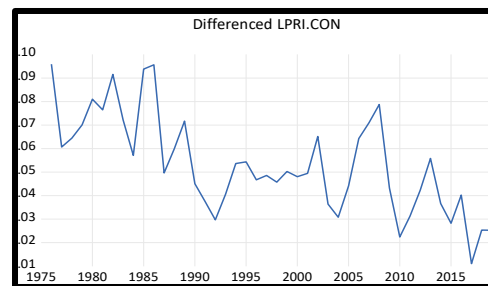
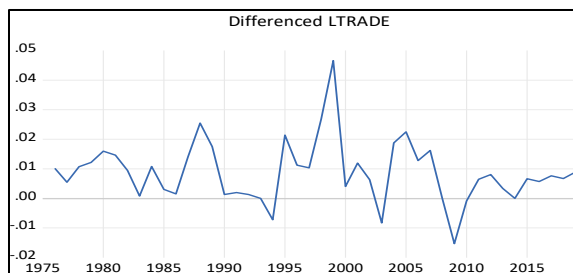
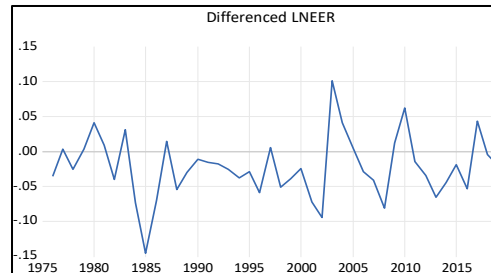
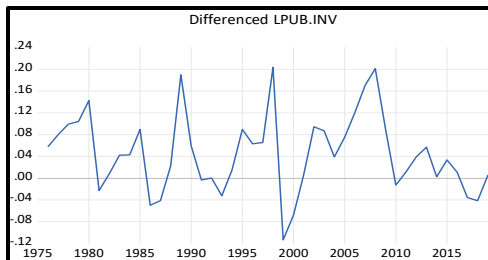
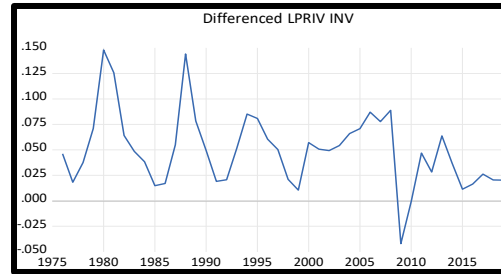
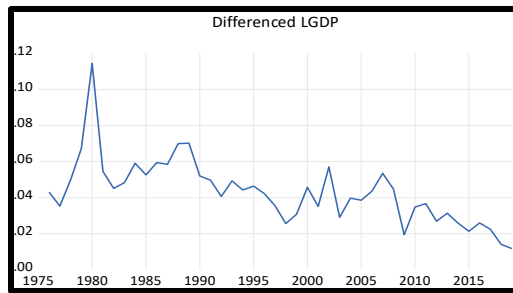
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APPENDICES

Appendix A: Data

	GDP	PRIV_INVE	PUB_INVE	PRI_CON	TRADE	NEER	INF	DCPS
	1113	4156	1370	2408	46.4	607.637484...	13.4259437...	63.8182076...
	1229	4622	1564	3003	47.5	558.779288...	11.0204015...	61.5319362...
	1333	4820	1879	3453	48.1	561.739040...	11.1519648...	60.0732693...
	1495	5255	2361	4005	49.3	528.533583...	11.1356079...	58.9693182...
	1745	6187	3000	4706	50.7	532.563653...	13.2936508...	56.9391623...
	2271	8700	4165	5671	52.6	584.045640...	13.6602471...	53.9671659...
	2575	11618	3951	6763	54.4	594.885585...	15.2542377...	58.7726854...
	2857	13465	4023	8350	55.6	542.104035...	14.6390372...	60.5695630...
	3193	15055	4432	9859	55.7	582.224824...	12.3032071...	64.7555190...
	3658	16445	4891	11244	57.1	491.619886...	11.5264804...	67.7691404...
	4129	17016	6007	13954	57.5	351.176654...	16.2942261...	71.1309198...
	4734	17696	5356	17390	57.7	298.738560...	18.6549268...	70.4604022...
	5416	20081	4867	19495	59.6	308.522590...	16.1605949...	71.0886441...
	6363	27987	5124	22380	63.2	271.914279...	12.7795442...	72.9254879...
	7479	33517	7931	26396	65.8	253.308033...	14.7308859...	75.4416384...
	8430	37556	9087	29281	66	246.554148...	14.3209758...	78.4724571...
	9451	39245	9013	31917	66.3	237.681330...	15.3347820...	88.924309
	10377	41157	9016	34173	66.5	227.597774...	13.8747028...	99.3761596...
	11623	46362	8366	37518	66.5	214.272622...	9.71744831...	105.022876...
	12870	56405	8658	42450	65.4	196.217069...	8.93854357...	111.008941...
	14320	67946	10639	48107	68.7	183.357119...	8.68042626...	116.000141...
	15782	78095	12302	53568	70.5	159.949005...	7.35412885...	116.718903...
	17122	87677	14300	59907	72.2	161.675509...	8.59777074...	113.361360...
	18162	92033	22842	66555	76.8	143.422982...	6.88055253...	115.167927...
	19493	94290	17588	74716	85.5	131.137189...	5.18148779...	131.048239...
	21657	107534	15036	83454	86.3	123.950764...	5.33895158...	130.312222...
	23481	120844	15262	93513	88.7	104.858185...	5.70190483...	138.792502...
	26778	135374	18964	108645	90	84.3610286...	9.49470667...	110.718367...
	28632	153384	23158	118135	88.3	106.249435...	5.67941806...	115.862201...
	31370	178552	25325	126807	92.2	116.544870...	-0.6920301...	126.932346...
	34281	210165	30111	140362	97.1	117.604098...	2.06285222...	138.159429...
	37899	256827	39734	162748	100	109.938555...	3.24390167...	156.976212...
	42863	307189	58832	191654	103.8	100	6.17781206...	160.124784...
	47512	376918	93479	229757	103.8	82.9537135...	10.0552820...	140.349876...
	49682	342142	115084	253768	100.2	85.2688181...	7.26456214...	145.941155...
	53823	341517	111710	267176	100	98.3223054...	4.06353897...	140.300062...
	58559	380411	114707	287110	101.5	94.9398241...	5.01715773...	131.966940...
	62297	406000	125515	316459	103.4	87.4846331...	5.72394366...	137.956479...
	66952	470178	143027	359861	104.2	75.0765298...	5.77640413...	139.299037...
	71064	511839	143803	391515	104.2	67.6118374...	6.13602015...	140.540922...
	74635	525404	155299	417787	105.8	64.6154486...	4.50920827...	138.131860...
	79225	545608	159136	458300	107.2	57.0805285...	6.59460441...	135.372252...
	83422	579589	146561	470111	109.1	62.9269893...	5.18108223...	138.109060...
	86170	607599	133199	498329	110.8	62.1290754...	4.50457749...	129.359600...
	88525	636640	134924	528132	113.1	59.0549201...	4.12435072...	128.966353...

Appendix B: Summary of stationary test



Appendix c: Augmented Dickey-Fuller test results

Null Hypothesis: D(LGDP) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.991708	0.0011
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LPRIV_INV) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.267588	0.0005
Test critical values: 1% level	-4.192337	
5% level	-3.520787	
10% level	-3.191277	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LPUB_INVE) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.543307	0.0039
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNEER) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
<u>Augmented Dickey-Fuller test statistic</u>	<u>-5.314102</u>	<u>0.0004</u>
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LTRADE) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
<u>Augmented Dickey-Fuller test statistic</u>	<u>-4.666005</u>	<u>0.0028</u>
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LPRI_CON) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 1 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
<u>Augmented Dickey-Fuller test statistic</u>	<u>-4.463179</u>	<u>0.0049</u>
Test critical values: 1% level	-4.192337	
5% level	-3.520787	
10% level	-3.191277	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(INF) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 3 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.534782	0.0003
Test critical values: 1% level	-4.205004	
5% level	-3.526609	
10% level	-3.194611	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LDCPS) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.859359	0.0001
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Appendix D: Phillip-Peron unit test results

Null Hypothesis: D(LGDP) has a unit root

Exogenous: Constant, Linear Trend

Bandwidth: 42 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-7.788777	0.0000
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LPRIV_INV) has a unit root

Exogenous: Constant, Linear Trend

Bandwidth: 19 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-4.029229	0.0149
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LPUB_INVE) has a unit root

Exogenous: Constant, Linear Trend

Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-4.310990	0.0072
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNEER) has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 6 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-5.222062	0.0006
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LTRADE) has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-4.704547	0.0025
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LPRI_CON) has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-4.452088	0.0050
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(INF) has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 42 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-10.26262	0.0000
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LDCPS) has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-5.833990	0.0001
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Appendix E: VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria

Endogenous variables: LGDP LPRIV_INV LPUB_INVE LPRI_CON LTRADE LNEER ...

Exogenous variables: C

Date: 11/09/21 Time: 18:45

Sample: 1975 2019

Included observations: 43

Lag	LogL	LR	FPE	AIC	SC	HQ
0	330.4185	NA	4.24e-17	-14.99621	-14.66855	-14.87538
1	724.6450	623.4278	9.52e-24	-30.35558	-27.40659*	-29.26808
2	818.9146	114.0005*	3.19e-24*	-31.76347*	-26.19316	-29.70931*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Appendix F: Johansen Cointegration test

Date: 11/09/21 Time: 19:10
Sample (adjusted): 1978 2019
Included observations: 42 after adjustments
Trend assumption: Linear deterministic trend
Series: LGDP LPRIV_INV LPUB_INVE LPRI_CON LTRADE LNEER LDCPS INF
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.923874	334.8878	159.5297	0.0000
At most 1 *	0.794204	226.7223	125.6154	0.0000
At most 2 *	0.666800	160.3258	95.75366	0.0000
At most 3 *	0.590731	114.1673	69.81889	0.0000
At most 4 *	0.495349	76.64525	47.85613	0.0000
At most 5 *	0.463696	47.92192	29.79707	0.0002
At most 6 *	0.289408	21.75367	15.49471	0.0050
At most 7 *	0.161623	7.404090	3.841465	0.0065

Trace test indicates 8 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.923874	108.1656	52.36261	0.0000
At most 1 *	0.794204	66.39645	46.23142	0.0001
At most 2 *	0.666800	46.15848	40.07757	0.0092
At most 3 *	0.590731	37.52210	33.87687	0.0175
At most 4 *	0.495349	28.72333	27.58434	0.0356
At most 5 *	0.463696	26.16824	21.13162	0.0090
At most 6 *	0.289408	14.34958	14.26460	0.0485
At most 7 *	0.161623	7.404090	3.841465	0.0065

Max-eigenvalue test indicates 8 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b*S11*b=I):

LGDP	LPRIV_INV	LPUB_INVE	LPRI_CON	LTRADE	LNEER	LDCPS	INF
-59.75824	24.97549	-2.259476	19.50119	47.29285	16.76400	20.39754	-0.155299
-11.33501	-9.455374	-5.991011	17.65062	49.81865	11.23991	21.29775	0.834846
91.37009	-10.76774	3.874180	-66.75276	60.89535	15.69465	-25.84488	0.367684
48.97892	-92.69400	2.578333	50.85316	71.11620	41.90037	4.977240	-0.391021
14.91169	-21.44029	10.24298	-10.23736	10.67380	-8.751987	30.92393	0.290783
22.62708	6.190409	6.723687	-43.47038	41.82819	-25.99735	-29.82487	0.180305
40.61353	-8.008158	2.627610	-33.42567	6.937767	-7.697853	-11.73073	-0.007933
35.46230	6.118499	-5.267672	-33.27079	32.60361	-3.092322	-21.88449	-0.167169

Unrestricted Adjustment Coefficients (alpha):

D(LGDP)	0.003654	0.002653	-0.004517	0.004104	7.36E-05	0.000292	0.002557	-0.001509
D(LPRIV_INV)	0.000233	-0.001448	-0.006976	0.012528	0.006057	-0.001416	0.004860	0.001798
D(LPUB_INVE)	0.026102	0.020857	-0.020603	0.006977	-0.003746	-0.016856	0.000834	0.004839
D(LPRI_CON)	0.007491	-0.004065	-0.000823	0.001560	-0.000108	-0.001947	0.001227	0.000757
D(LTRADE)	-0.003934	-0.002209	-0.002054	-0.000993	-0.001068	-0.002636	0.001478	-0.000467
D(LNEER)	-0.012154	0.010795	-0.006664	0.000224	0.000725	0.010293	0.009286	0.002325
D(LDCPS)	-0.014560	0.002443	0.010556	0.001630	-0.009585	-8.33E-05	0.002224	0.001612
D(INF)	0.749856	-0.721149	-0.643872	0.035383	-0.087380	-0.079873	-0.364761	-0.057627

1 Cointegrating Equation(s): Log likelihood 803.5662

Normalized cointegrating coefficients (standard error in parentheses)

LGDP	LPRIV_INV	LPUB_INVE	LPRI_CON	LTRADE	LNEER	LDCPS	INF
1.000000	-0.417942	0.037810	-0.326335	-0.791403	-0.280530	-0.341334	0.002599
	(0.08295)	(0.01393)	(0.08670)	(0.11068)	(0.05502)	(0.05017)	(0.00105)

Adjustment coefficients (standard error in parentheses)

D(LGDP) -0.218375

Appendix G: Vector Error Correction Model

Vector Error Correction Estimates
Date: 11/08/21 Time: 12:46
Sample (adjusted): 1977 2019
Included observations: 43 after adjustments
Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1							
LGDP(-1)	1.000000							
LPRIV_INV(-1)	0.524904 (0.27349) [1.91925]							
LPUB_INVE(-1)	0.103051 (0.06032) [1.70827]							
LPRI_CON(-1)	-1.502320 (0.27146) [-5.53431]							
LNEER(-1)	-1.095845 (0.17433) [-6.28592]							
LDCPS(-1)	-0.397096 (0.20964) [-1.89419]							
INF(-1)	0.017111 (0.00355) [4.82481]							
LTRADE(-1)	-1.258786 (0.44510) [-2.82811]							
C	5.434469							
Error Correction:	D(LGDP)	D(LPRIV_INV)	D(LPUB_INVE)	D(LPRI_CON)	D(LNEER)	D(LDCPS)	D(INF)	D(LTRADE)
CointEq1	-0.076616 (0.03282) [-2.33466]	-0.052560 (0.07282) [-0.72182]	-0.407685 (0.15465) [-2.63609]	-0.150688 (0.02492) [-6.04568]	0.326056 (0.08948) [3.64400]	0.038732 (0.07690) [0.50370]	-20.66582 (4.34004) [-4.76166]	-0.008057 (0.02524) [-0.31917]
D(LGDP(-1))	0.596099 (0.18371) [3.24485]	0.995198 (0.40761) [2.44153]	-1.603390 (0.86574) [-1.85204]	0.058393 (0.13953) [0.41850]	0.290328 (0.50089) [0.57963]	0.444233 (0.43045) [1.03201]	6.561929 (24.2952) [0.27009]	-0.084489 (0.14131) [-0.59789]
D(LPRIV_INV(-1))	-0.089484 (0.08036) [-1.11355]	0.161848 (0.17830) [0.90771]	1.329498 (0.37870) [3.51064]	0.149470 (0.06103) [2.44896]	-0.355328 (0.21910) [-1.62173]	0.052780 (0.18829) [0.28030]	15.39151 (10.6275) [1.44827]	0.023576 (0.06181) [0.38140]
D(LPUB_INVE(-1))	0.011076 (0.03238) [0.34213]	-0.084427 (0.07184) [-1.17529]	0.265758 (0.15257) [1.74183]	0.026318 (0.02459) [1.07028]	-0.020249 (0.08827) [-0.22939]	0.035899 (0.07586) [0.47323]	6.582003 (4.28163) [1.53726]	0.022908 (0.02490) [0.91987]
D(LPRI_CON(-1))	0.017741 (0.17120) [0.10363]	-0.231382 (0.37987) [-0.60911]	-0.916091 (0.80682) [-1.13544]	0.019835 (0.13003) [0.15254]	1.377520 (0.46680) [2.95101]	-0.104597 (0.40116) [-0.26074]	-85.08910 (22.6416) [-3.75810]	0.005881 (0.13169) [0.04466]
D(LNEER(-1))	-0.020427 (0.06526) [-0.31302]	0.216947 (0.14479) [1.49833]	-0.251820 (0.30753) [-0.81884]	-0.147155 (0.04956) [-2.96904]	0.580183 (0.17793) [3.26081]	0.066327 (0.15291) [0.43378]	-34.02085 (8.63017) [-3.94208]	0.060697 (0.05020) [1.20918]
D(LDCPS(-1))	0.102509 (0.08316) [1.23275]	0.056682 (0.18451) [0.30721]	-0.534463 (0.39188) [-1.36384]	0.028199 (0.06316) [0.44649]	-0.332707 (0.22673) [-1.46743]	0.158231 (0.19485) [0.81208]	-4.613226 (10.9973) [-0.41949]	0.005632 (0.06396) [0.08805]
D(INF(-1))	0.000315 (0.00117) [0.26830]	0.001283 (0.00261) [0.49214]	0.005428 (0.00554) [0.98037]	0.001504 (0.00089) [1.68537]	-0.003515 (0.00320) [-1.09727]	-0.001217 (0.00275) [-0.44208]	0.139458 (0.15536) [0.89764]	-0.000763 (0.00090) [-0.84488]
D(LTRADE(-1))	-0.011993 (0.22216) [-0.05398]	0.573381 (0.49294) [1.16319]	-0.923577 (1.04697) [-0.88215]	0.014628 (0.16873) [0.08669]	0.316922 (0.60574) [0.52320]	-0.107570 (0.52056) [-0.20664]	13.99232 (29.3807) [0.47624]	0.317558 (0.17089) [1.85826]
C	0.019020 (0.00890) [2.13639]	0.014063 (0.01975) [0.71192]	0.092828 (0.04196) [2.21251]	0.036431 (0.00676) [5.38783]	-0.078593 (0.02427) [-3.23773]	-0.009632 (0.02086) [-0.46173]	2.210147 (1.17739) [1.87716]	0.008318 (0.00685) [1.21468]
R-squared	0.588465	0.505029	0.415851	0.803033	0.488269	0.111226	0.552933	0.268074
Adj. R-squared	0.476229	0.370037	0.256538	0.749314	0.348706	-0.131167	0.431006	0.068458

Appendix H: Regression Model 1

Dependent Variable: LGDP(-3)

Method: Least Squares

Date: 11/08/21 Time: 13:34

Sample (adjusted): 1978 2019

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPRIV_INV(-2)	0.276571	0.040987	6.747725	0.0000
LPUB_INVE	-0.024091	0.013426	-1.794356	0.0817
LPRI_CON(-3)	0.551210	0.033709	16.35215	0.0000
LNEER	-0.039909	0.032360	-1.233277	0.2259
LTRADE(-2)	-0.274287	0.085526	-3.207057	0.0029
LDCPS(-1)	0.271230	0.041821	6.485459	0.0000
INF	-0.003651	0.000593	-6.158346	0.0000
C	0.380465	0.207067	1.837400	0.0749
R-squared	0.999768	Mean dependent var	4.091604	
Adjusted R-squared	0.999720	S.D. dependent var	0.566458	
S.E. of regression	0.009481	Akaike info criterion	-6.309453	
Sum squared resid	0.003056	Schwarz criterion	-5.978468	
Log likelihood	140.4985	Hannan-Quinn criter.	-6.188134	
F-statistic	20904.04	Durbin-Watson stat	2.199708	
Prob(F-statistic)	0.000000			

Appendix I: Regression Model 2

Dependent Variable: LPRIV_INV(-3)

Method: Least Squares

Date: 11/10/21 Time: 15:51

Sample (adjusted): 1978 2019

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPUB_INVE(-1)	0.150398	0.038642	3.892102	0.0004
LPRI_CON(-2)	1.260798	0.173825	7.253242	0.0000
LTRADE(-3)	0.542575	0.259897	2.087654	0.0444
LGDP	-0.712983	0.227754	-3.130492	0.0036
LDCPS(-1)	0.693465	0.138687	5.000226	0.0000
LNEER(-3)	0.172417	0.093915	1.835880	0.0751
INF	-0.004578	0.002213	-2.068352	0.0463
C	-1.538827	0.517269	-2.974908	0.0054
R-squared	0.998389	Mean dependent var	4.789054	
Adjusted R-squared	0.998058	S.D. dependent var	0.659766	
S.E. of regression	0.029078	Akaike info criterion	-4.068019	
Sum squared resid	0.028748	Schwarz criterion	-3.737035	
Log likelihood	93.42841	Hannan-Quinn criter.	-3.946700	
F-statistic	3010.464	Durbin-Watson stat	1.576974	
Prob(F-statistic)	0.000000			

Appendix J: Serial Correlation

VEC Residual Serial Correlation LM Tests

Date: 11/08/21 Time: 12:48

Sample: 1975 2019

Included observations: 43

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	84.28335	64	0.0455	1.405846	(64, 110.3)	0.0585
2	72.55347	64	0.2168	1.156568	(64, 110.3)	0.2494

Null hypothesis: No serial correlation at lags 1 to h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	84.28335	64	0.0455	1.405846	(64, 110.3)	0.0585
2	164.3634	128	0.0167	1.351942	(128, 84.8)	0.0684

*Edgeworth expansion corrected likelihood ratio statistic.

AppendixK: Heteroscedasticity: White

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null Hypothesis: Homoskedasticity

F-statistic	0.958943	Prob. F(7,34)	0.4760
Obs*R-squared	6.924867	Prob. Chi-Square(7)	0.4367
Scaled explained SS	6.009084	Prob. Chi-Square(7)	0.5387

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 11/08/21 Time: 13:36

Sample: 1978 2019

Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001741	0.002627	-0.662706	0.5120
LPRIV_INV(-2)	0.000643	0.000520	1.236003	0.2249
LPUB_INVE	-0.000253	0.000170	-1.485808	0.1465
LPRI_CON(-3)	-0.000432	0.000428	-1.010783	0.3193
LNEER	0.000193	0.000411	0.469531	0.6417
LTRADE(-2)	0.001499	0.001085	1.381202	0.1762
LDCPS(-1)	-0.000710	0.000531	-1.339073	0.1894
INF	-3.43E-07	7.52E-06	-0.045593	0.9639
R-squared	0.164878	Mean dependent var	7.28E-05	
Adjusted R-squared	-0.007059	S.D. dependent var	0.000120	
S.E. of regression	0.000120	Akaike info criterion	-15.04399	
Sum squared resid	4.92E-07	Schwarz criterion	-14.71301	
Log likelihood	323.9239	Hannan-Quinn criter.	-14.92267	
F-statistic	0.958943	Durbin-Watson stat	2.318318	
Prob(F-statistic)	0.476033			

Appendix L: Ramsey reset test

Ramsey RESET Test

Equation: UNTITLED

Omitted Variables: Squares of fitted values

Specification: LGDP(-3) LPRIV_INV(-2) LPUB_INVE LPRI_CON(-3)

LNEER LTRADE(-2) LDCPS(-1) INF C

	Value	df	Probability
t-statistic	0.615566	33	0.5424
F-statistic	0.378921	(1, 33)	0.5424
Likelihood ratio	0.479516	1	0.4886

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	3.47E-05	1	3.47E-05
Restricted SSR	0.003056	34	8.99E-05
Unrestricted SSR	0.003021	33	9.16E-05

LR test summary:

	Value
Restricted LogL	140.4985
Unrestricted LogL	140.7383

Unrestricted Test Equation:

Dependent Variable: LGDP(-3)

Method: Least Squares

Date: 11/08/21 Time: 13:40

Sample: 1978 2019

Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPRIV_INV(-2)	0.284910	0.043529	6.545327	0.0000
LPUB_INVE	-0.016195	0.018659	-0.867929	0.3917
LPRI_CON(-3)	0.575687	0.052332	11.00070	0.0000
LNEER	-0.049211	0.035986	-1.367491	0.1807
LTRADE(-2)	-0.283038	0.087481	-3.235425	0.0028
LDCPS(-1)	0.268693	0.042409	6.335726	0.0000
INF	-0.004057	0.000891	-4.555112	0.0001
C	0.347937	0.215562	1.614090	0.1160
FITTED^2	-0.006459	0.010493	-0.615566	0.5424
R-squared	0.999770	Mean dependent var	4.091604	
Adjusted R-squared	0.999715	S.D. dependent var	0.566458	
S.E. of regression	0.009569	Akaike info criterion	-6.273251	
Sum squared resid	0.003021	Schwarz criterion	-5.900893	
Log likelihood	140.7383	Hannan-Quinn criter.	-6.136767	
F-statistic	17956.96	Durbin-Watson stat	2.176432	
Prob(F-statistic)	0.000000			