South Africa's economic policies on unemployment: A historical analysis of two decades of transition

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Abstract

After twenty years of democracy, the most pressing problem facing South Africa is the absence of sustainable economic growth and job creation. Since 1994, major economic reforms and adjustments have been made, which were seen as a requirement for achieving economic growth and development. However, despite these efforts, unemployment in South Africa remains a challenging problem.

The main objectives of the study are, firstly, to examine South Africa's economic policy initiatives implemented since 1994. Secondly, to determine whether the issue of unemployment has improved under a review of the economic policies that have been implemented since 1994. Finally, this is achieved by examining the changes in employment and, more specifically, the changes in the cost-neutral change in the capital/labour (K/L) ratio between 1995 and 2013 by means of a historical Computable General Equilibrium (CGE) modelling approach.

The literature study focuses on employment, growth and human capital theories to reflect on the present state of knowledge and to contribute to evidence-based policy debates. It also provides an overview of South Africa's economic policy, programmes and strategy decisions and of the country's economic stance since the transition to democracy in 1994, with a specific focus on the labour market.

Historical CGE modelling, applied using the PEKGEM – a dynamic CGE model of the South African economy, was chosen to examine the relationship between growth and structural changes under the different economic and development policies in South Africa between 1995 and 2013. The primary aim was to determine how the dynamics and structure of South African employment changed during the period in which these policies were implemented, using the historical CGE modelling approach. The focus was primarily on changes in the capital and labour markets across all sectors over this period.

The results indicate an increase in capital relative to labour (K/L) over the period 1995 to 2013, despite the increase seen in the rental price of capital relative to wages (P_K/P_L). To better understand the structural shift, the theoretical specification of the capital/labour preference within PEKGEM was considered. The results suggests that at any given ratio of

real wages relative to the rental price of capital, industries would choose a K/L ratio 8.1 per cent higher in 2013 than it would have in 1995. Considering the fact that South Africa has a comparative advantage in unskilled labour-intensive goods, especially given the country's abundance of labour and high levels of unemployment, the shortcomings of South Africa's economic policies in addressing the pressing issue of unemployment is emphasised.

Keywords: Economic policy, South Africa, unemployment, CGE modelling, capital-labour ratio.

Opsomming

Na twintig jaar van demokrasie is van Suid-Afrika se grootste probleme die afwesigheid van volhoubare ekonomiese groei en werkskepping. Sedert 1994 het groot ekonomiese hervormings en aanpassings plaasgevind, wat gesien was as 'n vereiste vir die bereiking van ekonomiese groei en ontwikkeling. Ten spyte van die pogings om werkloosheid te verminder, bly dit egter 'n uitdagende probleem vir beleidmakers.

Die belangrikste doelwitte van die studie is eerstens om Suid-Afrika se ekonomiese beleids inisiatiewe wat sedert 1994 geïmplementeer is, te ondersoek. Tweedens, om te bepaal of die kwessie van werkloosheid verbeter het onder oorsig van die ekonomiese beleide wat sedert 1994 geïmplementeer is. Dit is bepaal deur die veranderinge in werkskepping, en meer spesifiek die veranderinge in die kapitaal-/arbeidsverhouding tussen 1995 en 2013 te ondersoek deur middel van ekonomies algemene ewewigsmodellering.

Die literatuurstudie fokus op werkskepping, ekonomiese groei en menslike kapitaalteorieë om te besin oor die huidige stand van kennis en om by te dra tot beleidsdebatte. Dit bied ook 'n oorsig van Suid-Afrika se ekonomiese beleidsprogramme, strategiese besluite en die land se ekonomiese posisie sedert die oorgang in 1994, met spesifieke fokus op die arbeidsmark.

Historiese ekonomies algemene ewewigsmodellering, meer spesifiek die PEKGEM, 'n dinamiese ekonomies algemene ewewigsmodel van die Suid-Afrikaanse ekonomie, is gekies om die verwantskap tussen groei en strukturele veranderinge onder die verskillende ekonomiese en ontwikkelingsbeleide in Suid-Afrika tussen 1995 en 2013 te bepaal. Die primêre doel was om die dinamika en struktuur van Suid-Afrika se werkskepping te bepaal oor die tydperk wat die beleid geïmplementeer was, met behulp van die historiese ekonomies algemene ewewigsmodellering. Die fokus was hoofsaaklik op die veranderinge in die kapitaal en arbeidsmarkte in alle sektore oor hierdie tydperk.

Die resultate dui op 'n toename in kapitaal relatief tot arbeid (K/A) oor die tydperk 1995-2013, ten spyte van die toename waargeneem in die prys van kapitaal relatief tot lone (PK/PA). Om die strukturele verskuiwing beter te verstaan, is die teoretiese spesifikasie van die kapitaal-/arbeidsvoorkeur binne PEKGEM-model beskou. Die resultate dui daarop

dat op enige gegewe verhouding van reële lone relatief tot die huur prys van kapitaal, industrieë 'n K/A verhouding 8.1 persent hoër sal kies in 2013 as in 1995. Met inagneming van die feit dat Suid-Afrika 'n vergelykende voordeel in ongeskoolde arbeids-intensiewe goedere het, veral gegewe die land se oorvloed aan arbeid en hoë vlakke van werkloosheid, is daar duidelike tekortkominge in Suid-Afrika se ekonomiese beleide se aanslag om die dringende kwessie van werkloosheid aan te spreek.

Sleutelwoorde: Ekonomiese beleid, Suid-Afrika, werkloosheid, ekonomies algemene ewewigsmodellering, kapitaal-/arbeidsverhouding.

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List of acronyms

ANA	Annual National Assessment
ANC	African National Congress
ASGISA	Accelerated and Shared Growth Initiative of South Africa
BEE	Black economic empowerment
CAPS	National Curriculum and Assessment Policy Statement
CGE	Computable General Equilibrium
COSATU	Congress of South African Trade Unions
CWP	Community Works Programme
DoE	Department of Education
DTI	Department of Trade and Industry
EED	Economic Development Department
EPWP	Extended Public Works Programme
EU	European Union
FDI	Foreign direct investment
GEAR	Growth, Employment and Redistribution
GDP	Gross Domestic Product
GNI	Gross national income
IDCGEM	Industrial Development Corporation General Equilibrium Model
ILO	International Labour Organization
IMF	International Monetary Fund
IPAP	Industrial Policy Action Plan
JIPSA	Joint Initiative of Priority Skills Acquisition
MTSF	Medium Term Strategic Framework
NGP	New Growth Path
RDP	Reconstruction and Development Programme

SADC	Southern African Development Community
SARB	South African Reserve Bank
SARS	South African Revenue Services
SMMEs	Small and medium enterprises
TFP	Total factor productivity
UNDP	United Nations Development Programme
WTO	World Trade Organization

Chapter 1: Introduction

1.1. Introduction

After twenty years of democracy, the most pressing problem facing South Africa is the absence of sustainable economic growth and job creation (Van den Berg, 2006). These are essential in the country's fight against poverty and in improving the living conditions of all South Africans (Van den Berg, 2006). South Africa's transition to democracy in 1994 posed difficult political, economic and social challenges and the country's noteworthy achievements in overcoming some of these challenges have been widely recognised (Naidoo *et al.*, 2008). However, the events of the past twenty years demonstrate that the challenge did not end with the transition of power to a new government. What lies ahead is the formidable task of ensuring that South Africa's human resources are employed, promoting sustainable livelihoods and improving social conditions to alleviate poverty.

1.2. Overview of South Africa's economic performance since 1994

Since the African National Congress (ANC) won the 1994 election with a majority vote of 62.6 per cent (Van den Berg, 2006), South Africa has been considered to be a better place for all. The country has been transformed in many aspects, with greater access to housing, sanitation, water, electricity and increased levels of education which is more inclusive than before the 1994 elections (Naidoo *et al.*, 2008). Other noticeable achievements include a 10 per cent decrease in the poverty rate, an increased number of hospitals and schools in rural and underserved areas, and more than half of all households in the country receiving social grants (Ngandu *et al.*, 2010). Furthermore, South Africa's per capita income grew significantly to push the country from lower-middle-income to upper-middle-income status. In 1994, the annual earnings per person averaged R12 281. In 2013, that share grew by 401 per cent to R62 676 per year, a compounded annual rise of 8.9 per cent per annum. Such statistics contradict a different reality: South Africa is among the world's most unequal societies with persistently high unemployment for the last twenty years (Lings, 2014). This mismatch points to other

structural and systemic issues within South Africa's political economy that define the nature of how wealth is distributed and used.

In this context, and in contrast to the political progress, the legacy of apartheid remains entrenched and with the massive loss of jobs in the past two decades, even appears to be worsening (Naidoo *et al*., 2008). With more than 15 million people dependent on the social security system for survival due to unemployment, government is under immense pressure to effectively address this issue (Visser, 2004).

Therefore, even though many South Africans have gained access to essential utilities, such as water and electricity, many cannot afford them and as a result nearly five million South Africans have been experiencing water and electricity cut-offs, owing to ongoing tariff increases (Murwirapachena *et al*., 2013). Consequently, more than a million workers go on strike every year, resulting in some of the biggest protests in the world, which results in South Africa being ranked in the top ten of the world's most unequal societies (Murwirapachena *et al*., 2013). This puts further pressure on Government to put in place effective economic policies for the country's fight against unemployment in the hope of creating high numbers of sustainable jobs in the near future.

1.3. Overview of economic policy and unemployment in South Africa

Knowledge of the environment in which South Africa's policies have been set is crucial in understanding the economic decisions made post-1994. At the time, South Africa was considered a hostile international economic environment (Reitzes, 2009). The economy was emerging from a severe recession, and endured drought and low levels of investment, together with drained fiscal accounts. South Africa did, however, have a leading mining sector, a small but sophisticated financial sector, and a manufacturing sector that provided ample opportunity for employment (Ngandu *et al*., 2010).

As a start, it was essential for Government to improve public finances, to enable them to address the deep legacy of apartheid. Some of the challenges Government faced included high levels of poverty, inequality, a poor education system, poor health indicators, high levels of violence and crime, increasing unemployment and

underdevelopment of rural and dysfunctional urban spaces (Murwirapachena *et al*, 2013).

However, since 1994, South Africa has improved its growth through the reintegration of the South African economy with the rest of the world. As a result, South Africa had unrestricted access to foreign capital for the first time since 1985, allowing a deficit on the current account of the balance of payments (Murwirapachena *et al*, 2013). Moreover, the increase in private sector investment from 8 per cent in 1992 to 14 per cent in 2008, contributed to further improvements in growth (IMF, 2013). Many other factors also contributed to this change, such as increased competition, new business opportunities, a stable and fairly predictable policy environment, and the development of new industries across various sectors, which supported the growth and expansion of the economy (Reitzes, 2009).

At the same time, South Africa's acceptance into the world economy created pressure for economic stability and the need for economic policy reform to address the challenges which the country faced post-1994. As such, South Africa adopted an economic policy in 1994, called the Reconstruction and Development Programme (RDP). Emphasis was placed on creating a strong, balanced and dynamic economy by focusing on education and training, literacy levels and the development of the youth. As such, the RDP policy framework focused mainly on addressing equity and poverty, but with little emphasis placed on fiscal constraints (Van der Berg, 2006).

This resulted in a strategic transition to the Growth, Employment and Redistribution (GEAR) strategy in 1996, which aimed at growing the economy by 4.2 per cent annually and creating 400 000 new job opportunities per year. However, according to Visser (2004), the GEAR strategy achieved very little success in increasing Gross Domestic Product (GDP) growth, job creation and distributing wealth.

While the GEAR was in place, Government realised that an annual growth rate of 3 per cent was not enough to address the widespread legacy of unemployment and poverty. Therefore, Government implemented the Accelerated and Shared Growth Initiative of South Africa (ASGISA) in 2006. The aim was to halve poverty and unemployment by 2014 and reach 6 per cent growth per annum by 2010 (Department of

Basic Education, 2013). With ASGISA, the country experienced four consecutive years of positive growth, increasing the growth of investment to over 20 per cent. Together with the increased growth, some jobs were created, as unemployment declined from 27.9 per cent in 2004 to 20.7 per cent in 2008 (Statistics South Africa, 2011). Due to the negative impact of the global financial crisis in 2008/2009, unemployment increased to 25.7 per cent at the end of 2009 (Statistics South Africa, 2011).

In consequence of the 2008/2009 global financial crisis, South Africa, together with the rest of the world, was led into recession. In response to the stagnation that resulted from the crisis, the New Growth Path (NGP) framework was implemented in 2010 and succeeded ASGISA. Similar to the ASGISA policy, the NGP places emphasis on large investments in social development, training and education, and aims to create five million jobs by 2020 (Economic Development Department, 2010).

Despite the various policies formulated by the South African Government since 1994, the Government has identified the need for a new and effective growth path to help overcome structural unemployment, inequalities, poverty and low growth (Van der Berg, 2006). Accordingly, and in addition to the NGP policy, the 5th iteration of the Industrial Policy Action Plan (IPAP) was adopted in 2013, which sets out Government's broad approach to industrialisation. IPAP forms part of a larger set of interrelated strategies and policies, emphasising that sectors have different characteristics and their importance to economic growth and job creation (Department of Basic Education, 2013).

IPAP thus has a certain role to play in boosting economic growth and employment in the economy, as it is embedded in the objectives of all policy frameworks. IPAP therefore aims to promote more labour absorbing industrialisation to create employment and contribute to sustainable industrial development (Department of Basic Education, 2013).

Resulting from the legacies of apartheid, inequality, poverty and unemployment have been the driving force behind the formulation of these policies. However, results show that these policies have achieved little success in these specific areas, as poverty and unemployment are on the rise, while inequality continues to be widespread (Ocran, 2009).

Furthermore, trends indicate that South Africa's economy has lost momentum over the past five years. Government is becoming increasingly concerned about the low growth and employment figures, especially when compared with the country's peers (Fourie, 2013). Firstly, with an increase of 33 per cent in nominal GDP per capita since 1994, South Africa lags far behind other emerging markets and developing countries with an average increase of 115 per cent. Secondly, inequality remains a big challenge for the South African Government since not all South Africans shared to the same extent in the increase in GDP per capita. Thirdly, unemployment has worsened since 1994, with the unemployment rate at approximately 24 per cent and 40 per cent in terms of the broader definition (Statistics South Africa, 2013).

Currently, the economy is creating jobs, but not enough for the growing labour force. Therefore, Government's national policy framework should be seen as a blueprint for the structural reforms required to facilitate high and inclusive growth, address unemployment and lower poverty, with the emphasis being on the correlation between growth and employment to eventually address poverty (Black *et al*., 2011).

1.4. Motivation

The primary objective of economic policy is to provide growth and development in order to create new job opportunities, sustain employment and reduce poverty and inequality (Ocran, 2009). Since 1994, the South African Government has introduced six economic policy programmes. Recent debates have therefore focused more on South Africa's economic policy direction after 1994. This is because the seemingly steady growth that has been recorded over the past two decades has delivered a low number of new employment opportunities, and political change is an empty phrase if it is not accompanied by changes in the socio-economic field, leading to meaningful changes in the quality of life of all South African citizens (Ocran, 2009).

1.5. Problem statement

From previous research carried out by researchers such as Visser (2004), Van der Berg (2006) and Ocran (2009), it is evident that measurable progress has been made in education, health care, housing and providing basic services. However, poverty continues to be widespread, income disparities remain, unemployment is still high and many people still lack necessities (Mmatshepo, 2012). Until now, the debate on the efficiency of economic policy in South Africa to create new jobs and stimulate growth has received little attention. This dissertation seeks to contribute to the debate by analysing these political dynamics and trends in South Africa, to determine how the dynamics and structure of South Africa's employment changed during the period in which these policies were implemented. This will help to inform policymakers on the historical performance under these various policies and to assist them in making better-informed decisions in the future.

Thus, has the South African economy been able to create more job opportunities under review of the economic policies that have been implemented since 1994?

1.6. Research objectives

Given the importance of employment in the growth and development of South Africa, the main objective of this dissertation is to determine whether the issue of unemployment has improved under review of the economic policies that have been implemented since 1994. This can be done by examining the changes in employment and more specifically, the change in the capital/labour (K/L) ratio between 1995 and 2013. Moreover, this dissertation will review South Africa's economic and social development performance over the period 1994 to 2014, by:

1) examining the country's national economic policies during the first twenty years of democracy;
2) determining, as these policies have changed, whether there has been a shift in their focus on the issue of unemployment during the period under review;

3) determine whether these policies and the shifts in focus of these policies truly addressed the unemployment problem in South Africa. This will be determined empirically by measuring changes in the capital-labour (K/L) ratio in all sectors by means of a historical Computable General Equilibrium (CGE) modelling approach.

The following secondary objectives are identified:

1) determine, from a theoretical point of view, how effective South African economic policies have been and whether they have met the goals set by the South African Government;
2) determine, from theory, to what extent these policies have contributed to economic and social development in South Africa;
3) make policy recommendations based on the findings of the analysis and results.

1.7. Research method

The research methods include a literature and empirical study.

1.7.1. Literature study

The research problem stated above will be addressed firstly by a thorough literature study on South Africa's economic policies and the important role these can play in creating new job opportunities and promoting economic growth. This literature study will focus on research regarding economic policies over the past two decades.

The economic policy documents that will be discussed and analysed include the following:

- The Research and Development Programme (RDP)
- Growth, Employment and Redistribution Programme (GEAR)
- Accelerated and Shared Growth Initiative of South Africa (ASGISA)
- The Medium Term Strategic Framework (MTSF)
- New Growth Path (NGP)
- Industrial Policy Action Plan (IPAP).

1.7.2. Empirical study

South Africa's unemployment and growth problems have been well documented in the literature, and therefore this dissertation will make use of evidence-based analysis to reveal the ramifications of economic policies and events in the economy. More specifically, a dynamic computable general equilibrium (CGE) model will be used to perform such analysis.

The PEKGEM will be used to examine the relationship between growth and structural changes under the different economic and development strategies in South Africa since 1994. CGE analysis captures a wider set of economic impacts derived from the implementation of policy reforms and can be used to consolidate a base for future modelling efforts.

Therefore, the primary role of historical simulations is to uncover the unobservable structural change characteristics in historical data. By investigating past economic outcomes, evidence can be produced that would allow policy decision makers to make more informed decisions going forward, and the PEKGEM provides modellers with the flexibility in the choice of closure to do this (Boratyriski, 2012).

Thus:

- A first point of departure will be to consider historical CGE analysis designed to uncover the economic causes underlying relative economic performance.
- Next, the dissertation will discuss (dynamic) CGE modelling, highlighting the model's analytical capabilities in revealing the economic consequences of a wide range of socio-economic development policies.
- Using a dynamic CGE model, the dissertation will also determine whether there was a positive or negative change in the capital-labour (K/L) ratio in different sectors under review of the various economic policies implemented since 1994. This will help to determine the structural change in the economy of whether South African firms are becoming more capital or labour intensive. This will give a good indication of whether the policies implemented since 1994 have been addressing the issue of unemployment effectively.

1.8. Outline of the chapters

This study will be presented in five chapters, which will be structured as follows:

Chapter Two provides a summary of the theoretical perspectives on economic policy in South Africa, with a focus on the underlying theory of unemployment and slow economic growth.

Chapter Three provides a comprehensive overview of the economic policies that have been implemented since 1994, together with an outline of South Africa's economic performance, labour market and unemployment situation since the transition to democracy in 1994.

Chapter Four consist of a description of the empirical methods applied to analyse the question under review. This includes details of the research methodology, and discussion on the data collected and analysed, as well as detail on the theory and concepts used. Chapter Four also includes the results and discussion from the empirical analysis to establish whether there was a change in the K/L ratio in different sectors of the economy under review of the various economic policies implemented since 1994.

Chapter Five concludes the study, presents the limitations, outlines some recommendations to policy decision makers based on the results, and determine gaps in the study that may be addressed by further research.

Chapter 2: Literature review

2.1. Introduction

When South Africa became a democracy in 1994, part of the expectation was that this would create the possibility of a more stable and peaceful future, while also changing investor sentiment about South Africa's future possibilities. To achieve this, economic vision was critical and this reflected the need to incorporate previously disadvantaged groups from the apartheid era of exclusion and informality. From an economy-wide perspective, this was thought to expand domestic demand and supply as the economy was slowly recovering from stagnation in the 1980s and early 1990s. From the range of possible ways to expand the South African economy, economic policy was used to put in place the basics for sustainable economic growth and development post-1994.

A central objective of macroeconomic policy has been to reintegrate South Africa with the world economy in order to increase foreign demand for South African exports and enable increased inflow of capital (Burger and Woolard, 2005). Underlying the macroeconomic aspects of addressing globalisation has been a range of microeconomic issues that affected economic growth in a more direct manner. Some of the most important microeconomic challenges South Africa faces include productivity, market structure and competitiveness, pricing and tariff issues and raising the economic growth rate above five per cent per annum. These macroeconomic and microeconomic policy challenges have all had an impact on sustainable job creation since 1994. Therefore, policy makers continue to try to address the shortcomings as more rapid growth in productivity with greater use of labour remains one of South Africa's biggest growth challenges. The focus of these policies should be on developing human capital to ensure productive and sustainable employment creation, through structural change to more productive sectors that can absorb labour (Burger and Woolard, 2005).

However, despite South Africa's rapid economic growth over the past 20 years, there is still concern that this growth has not created sufficient productive employment to lift the large population out of poverty (Kapsos, 2005). Therefore, spillovers to employment opportunities for the poor are essential, not only for a higher income, but to stimulate

learning and skills acquisition in the long run (Adams *et al*., 2013). More rapid growth in productivity with a much greater use of labour remains one of the biggest growth challenges facing South Africa's economy.

Accordingly, this chapter provides a brief overview of current research and knowledge on employment, economic growth and human capital theories, to provide some insight into South Africa's employment circumstances since 1994. The aim is to reflect on the present state of knowledge and contribute to evidence-based policy debates.

2.2. Economic growth and human capital theories

South Africa's labour market structure is continually changing by increasing the level of competitiveness and creating the need for a more flexible and productive workforce. When South Africa became a democracy in 1994, firms began to compete in the global market place. However, global product competition and technological innovation have resulted in lower job security for many (Edwards, 2001). According to McConnell and Brue (1995), to keep the workforce fully employed, education, training and retraining is crucial. The reason for this is that education and training drives economic growth and development and increases the overall skill level of the labour force. However, improving educational quality is challenging, and therefore government needs to focus on politically feasible investments to yield large changes (Edwards, 2001). To do this, it is important to understand economic growth and human capital theories, and how economic policy can play a role in improving economic growth and human capital development.

2.2.1. Human capital

At the centre of economic growth theory is the concept of human capital. Pearce (1992:188) defines human capital as the investment made in human resources to improve productivity. In accordance with Pearce, Woratz (1997:11) defines investment in human capital as saving from current consumption to increase productivity in the long

run. He found that education and training should not be viewed as a consumption variable, but rather as a production variable.

According to McConnell and Brue (1995:82), firms and individuals will invest in their level of training and education when it is anticipated that additional knowledge and skill accumulation will improve future earning potential. Training and education should therefore be considered as an investment in human capital, just as expenditure on equipment and machinery is an investment in physical capital.

Human capital has also been recognised as an important component in the development process, resulting in an increase in the demand for education and labour-related disciplines (UNDP, 1997). Mincer (1993:70) stated that human capital can be understood as the traits of the workforce that are able to improve through skill development, training and education, thus encouraging total factor productivity (TFP) growth to further accelerate growth of a country.

TFP is the proportion of output that is not explained by the amount of inputs used in production, and results from spillovers and learning by doing that is associated with investment in human capital or physical capital (Romer, 1986).

Grossman and Helpman (1989) argued that the devotion of resources to the advancement of skills and knowledge creation enables the economy to produce with increasing returns to scale and achieve higher sustainable growth. Thus, a well-educated and healthy workforce is essential for economic growth and development of a country.

2.2.2. Economic growth theory

Long-run economic growth can be achieved by increasing income per capita, which is possible by increasing the amount of output produced per worker through increased labour productivity. From this, the key to economic growth and success is productivity. The differences in the South African economy's productive potentials can be classified into two broad groups (Altman and Mayer, 2003):

- The efficiency of labour, that is, how technology and capital is used to increase the amount of output per worker; and
- Capital intensity, that is, how machinery, buildings and infrastructure have been put to use in order to boost the productivity of labourers.

This indicates that both capital intensity and the efficiency of labour have an important role to play in how an economy performs (Hardwick *et al.*, 1986). In the classical era, economic growth theory was subjected to the role of investment to increase labour productivity. However, economic growth could not fully be explained by investment and was explained by neo-classical economists as technical advancements. In response to the neo-classical model, new growth theories were developed. These theories incorporated technological progress and focused on endogenous resources, such as idea formulation and investment in human capital, which might result in improved productivity and economic growth.

2.2.3. Growth theories and human capital

In 1776, Adam Smith formed the basis for economic growth theories by studying the question of economic growth and development through the exploration of population growth, labour productivity and capital accumulation (Adelman, 1964:26).

Smith argued that an improvement in the division of both physical and human capital would result in economies of scale and that growth would be self-reinforcing (Adelman, 1964:26). According to Smith, progress can only be introduced to the extent that there is adequate capital available for further growth.

David Ricardo further modified Smith's model by including diminishing marginal productivity of land, as land is considered to be fixed in supply and variable in quantity (Brenner, 1996: 36). According to Ricardo, economic growth starts with population growth and high food prices. The rise in population growth will result in increased demand for food, coupled with an increase in wages. The increase in wages will result in a greater demand for capital – relative to labour – as a factor input. Ricardo also

found that capital and labour are in constant competition, and capital can normally not be employed unless there is an increase in labour (Brenner, 1996:37).

Furthermore, John Stuart Mill's (Mill, 1848) findings were greatly influenced by the work of Adam Smith. Both agreed that government plays an important role in boosting economic growth and acknowledged the importance of labour in achieving growth (O'Brien, 1975). Mill saw capital as a means of future production that was previously accumulated by labour. According to Mill, the division of labour meant that capital could be used more effectively to gather returns more quickly (Mill, 1848).

2.2.4. Neo-classical growth theories

Neo-classical growth theory considers the economy as fundamentally stable and also leans towards full employment. These theories consider factor prices to be flexible in the long run, making factor substitution easy. This results in changes in factor proportions used in production, more specifically, changes in the capital-to-output ratio (Pearce, 1992:179).

In order to avoid instability caused by fixed capital-to-labour coefficients, as found in Harrod-Domar's growth model, the emphasis of the neo-classical growth theory is placed on the substitution between capital and labour in the production function to ensure that steady state growth is achieved (Pearce, 1992:179).

In the early 20th century, Joseph Schumpeter demonstrated that human resources are far more important as a factor of production than natural resources are. Schumpeter started modern growth theory by emphasising the important role of the businessman and entrepreneur, by determining whether capital would grow rapidly or slowly and whether growth would involve change and innovation (Pearce, 1992:386).

To help describe how an economy grows and changes over time, Robert Solow's model, named the *Solow growth model*, can be used (Snowdon & Vane, 2005). The model describes how the economy changes and grows over time as savings and investment, labour force growth and advancing technology raise an economy's output per worker and standard of living. The key variable in the Solow growth model is labour

productivity, which includes output per worker (Snowdon & Vane, 2005). Economists use this model to find an equilibrium point of balance, which helps to indicate how the economy will react. In theory, economists look for an equilibrium in which an economy's capital per worker, efficiency of labour and the level of real GDP per worker grows at the same proportional rate.

Fagerberg *et al*. (1994:3) stated that Solow's model makes empirical predictions that countries with capital-to-labour ratios higher than the steady state will tend to grow slower than countries with capital-to-labour ratios lower than the steady state.

Kenneth Arrow, on the other hand, sought to associate learning to the level of knowledge already accumulated, and not with the rate of growth. It was Arrow that introduced the concept of 'learning by doing', where labour productivity will increase as a result of people getting better at a specific job, the more they practice doing it (Arrow, 1962).

In accordance with Arrow, Grossman and Helpman (1997:35) pointed out that new knowledge might be accumulated as firms take part in new undertakings. However, firms cannot prevent knowledge gained from production from flowing freely to the public domain. This knowledge then contributes to the productivity of resources and is known as the 'spillover effect'.

The approach of the 'spillover effect' and 'learning by doing' was further studied by Paul Romer (Romer, 1986). In contrast to Arrow, Romer focuses on knowledge and the investment in new knowledge as the basic form of capital and does not consider physical capital in his model. Accumulating new knowledge can benefit firms through the positive spillover effect, positively affecting their production possibilities.

Therefore, given the positive external effect of investment in education, training, knowledge and human capital, it becomes clear that economic policies can play an important role (Burger & Woolard, 2005). Romer stated that "*as soon as you think about technology, you have to confront the fact that there is a built in form of increasing returns – technically a non-convexity*" (as quoted in Snowdon & Vane, 1994:4).Thus, in order for countries to increase economic growth and develop successfully, they need to

be open to new ideas and technologies. Without technology as a fundamental input in production, growth would come to a near standstill.

Fukuda-Parr *et al*. (1996:50) state that human capital shows how education and knowledge allow the whole production process to benefit from positive externalities, since workers with an education use capital more efficiently and become more productive. Educated workers spread these benefits to their co-workers, rendering them more productive. This rising level of education will result in a rise in efficiency of all factors of production. The spillover benefits of knowledge and education also help to account for important aspects of the relationship between physical capital and growth.

In conclusion, the new growth theories emphasise the importance of improving skills and investing in human capital that will yield returns for both the employer and the employee. These theories show that human capital is interdependent on technological advancements and can be considered as the driving force of economic growth.

It can therefore be argued that one of the reasons why South Africa is unable to create more job opportunities or compete efficiently in the emerging global market is because of the shortage of skills required. In order for the labour force to be fully featured, education, training and retraining are crucial. Studies done by Edwards (2001), Kapsos (2005) and Adams *et al*. (2013) have all found that investing in human capital enables countries to perform better in terms of employment, growth, and reduced poverty and inequality. In the end, there is a very close link between human capital, physical capital and technological change, indicating the interdependence between these variables. However, it is important to take into consideration the various constraints that need to be addressed to enable an environment where higher growth will lead to increased employment creation.

2.3. Constraints on growth and employment creation

The causes underlying South Africa's high unemployment rate are numerous and diverse. However, researchers such as Lingens (2003), Herwartz and Niebuhr (2011) have pointed out that a key factor influencing employment in the long run is economic

growth. In 2011, Herwartz and Niebuhr developed an econometric model to study the link between unemployment and growth. They used Okun's law (Okun, 1962) as a starting pointing, which is an empirically observed relationship between losses in production and unemployment of a country. Using Okun's law, they found that the relationship between unemployment and growth depends on the labour market structure and framework. In an earlier study, and in concordance with Herwartz and Niebuhr (2011), Lingens (2003) developed a model based on the relationship between unemployment and growth. He found that it is possible to have a positive or negative relationship between the two variables, depending on the value of the elasticity of substitution between high- and low-skilled workers.

As a result, a strong focus has been placed on identifying the constraints to growth in South Africa over the past decade. While various studies have made recommendations on macroeconomic issues such as fiscal and monetary policy, they have placed more emphasis on microeconomic and structural reforms in areas such as education, skills development, industrial policy, labour market policy and black empowerment, which are required to enable a microeconomic environment where there is higher growth that will allow increased employment, resulting in reduced inequality and poverty.

In addition, South Africa's low level of growth and employment in part reflects a skills mismatch in the economy. According to Bosworth and Collins (2003), the structure of the economy has evolved in response to technological advancements and the changing demands of production, together with the growing need for higher-level skills. Furthermore, Fields and Kanbur (2007) found that the skill-biased demand for labour, together with the substantial increase in the supply of a relatively well-educated young workforce, has resulted in a sharp increase in unemployment since 1994.

Yet, Banerjee *et al*. (2008) found that many skilled sectors in South Africa are having difficulty filling certain positions due to the structural nature of South Africa's unemployment. In addition, Banerjee *et al.* (2008) stated that there have also been sectoral changes in unemployment; attributable to the structural shifts in production from the employment-intensive primary sector to the tertiary sector, resulting in a decrease in the demand for labour, particularly unskilled labour. Banerjee *et al.* (2008)

further emphasise that because of the structural nature of South Africa's unemployment, it is unlikely to improve in the future without policy interventions.

Available evidence from Statistics South Africa's (StatsSA) Labour Force Survey (LFS) and Household Survey indicates that between 1995 and 2002, a particularly high unemployment growth was experienced in South Africa. During this period, it was recorded that growth in unemployment was significantly higher than growth of the working age population, suggesting that labour force growth might just be responsible for growing unemployment (Burger & Woolard, 2005).

In addition to the growing labour force, the rising cost of labour and labour market rigidities are also posited as an explanation for growing unemployment. According to Fedderke and Bogetic (2006), the structural change in the economy, combined with labour militancy, favours skilled works, resulting in increasing labour costs that exceed labour productivity improvements. Sectors, such as mining and agriculture, with strong negative elasticities of labour demand that typically rely on semi-skilled and unskilled labour, were affected negatively by these trends.

However, in 2008 Banerjee *et al.* found no evidence to support the findings of Fedderke and Bogetic (2006) that unemployment had increased due to upward wage pressure. Banerjee *et al.* (2008) argued that the increase in the wage union premium between 1995 and 2005 for skilled and semi-skilled labour only prevented wages from falling as fast as global wages did.

As a result, evidence presented by Bhorat *et al*. (2002) indicates that employers have turned to casual or part-time labour to avoid high wages, labour legislation and the inflexibility of the labour market. The most noticeable increase in part-time work was post-1997, after the implementation of the Labour Relations Act of 1995, together with the Employment Equity Act of 1998. This has also contributed to increased unemployment, resulting in fewer workers being protected by legislation who are thus likely to fall into unemployment more easily.

According to Schultz and Mwabu (1998), the reduction in working hours may also be a direct result of an increase in the cost of labour. They further point out that this may

encourage workers to seek employment in sectors that are not covered by collective bargaining agreements, resulting in reduced wages in uncovered sectors.

Standing (1997), on the other hand, found that the preferred method of avoiding increasing labour costs was to implement technological change. This not only results in a decreasing demand for labour overall, but also increases the demand for skilled labour relative to unskilled labour.

South Africa has an abundant supply of low- and medium-skilled workers, with relatively few high-skilled workers, a situation which is aggravated by the emigration of skilled labour. Introducing technological change across various sectors of the economy shifts the demand away from the labour pool in which South Africa is abundant. Aron *et al*. (2008) argue that South Africa's labour legislation is far too severe for a country with this type of unemployment conditions. As such, they argue that the lack of flexibility in labour market legislation is contributing to increasing unemployment and inequalities in the economy.

Considering the extent of South Africa's unemployment problem, together with the abundant supply of low-skilled labour, the informal sector would be expected to be fairly large; however, in reality it is relatively small compared with international standards. Furthermore, if unemployment rates are so high and workers are still not entering the informal sector, it might imply that there are certain barriers to entry into the informal sector.

2.4. South Africa's informal sector and employment

With South Africa's growing workforce and insufficient number of formal jobs being created, job seekers have turned to the informal sector for employment. The biggest segment of South Africa's informal sector is involved in a wide range of services, including food service, repairs, and street vending (Fox and Sekkel, 2008). According to Adams *et al* (2013), globalisation has contributed to the growth in informal activities, while putting formal employment under tremendous pressure. In the last two decades,

South Africa has experienced a shift away from agriculture to other sectors, such as services, but with little expansion in manufacturing.

However, employment in the service sector is characterised by high informality, and therefore by high degrees of job vulnerability. However, despite the fact that South Africa's informal sector suffers from low wage vulnerability, it presents numerous opportunities, and according to Staatz and Dembele (2007), it is part of the solution to the problem of unemployment. In addition, Lavopa and Szirmai (2012) have stated that the focus of government is placed more on job creation, rather than on the creation of productive employment.

Maloney (2002) found that experience and capital are common barriers to entrepreneurship, which is specifically problematic for the unemployed. Kingdon and Knight (2008) restated the findings of Bhorat *et al.* (2002) to the effect that small firms cannot afford the rising labour costs caused by rigid labour laws that create a barrier to entry into entrepreneurship activities.

Consequently, growing unemployment among semi-skilled and unskilled workers presents something of a challenge for policy makers, owing to the fact that industries and sectors that have become internationally competitive and grown during the 1990s, have done so by shedding labour and increasing capital and skill intensity of production. However, the domestic economy's shortage of skilled labour will constrain future growth of these sectors. Therefore, the development of human resources in policy development is crucial in helping to address the unemployment problem among semi-skilled and unskilled workers, so as to enable them to move from the informal sector to the formal sector.

In addition, researchers such as Bell and Gattaneo (1997) and Bhorat and Hodge (1999), argue that South Africa's rising unemployment can be attributed to globalisation and the increasing openness of the economy, resulting in the shifts in skill composition of labour demand. The unintended consequence, from an employment perspective, has been the importance of industrial policy in changing the structure of the economy to one that is more capital- and skill-intensive, worsening structural unemployment.

2.5. Trade and trade liberalisation's impact on employment

When South Africa became a democracy in 1994, the objective was to restructure the manufacturing sector to make the economy more competitive in the international arena. The objective was to reverse the high level of unemployment that prevailed after 1994, and was expected to drive higher growth rates and create sufficient employment opportunities. However, only some of these objectives have been met since 1994.

The industrial policy was successful in enhancing international competitiveness, as was evident in a substantial increase in exports in the manufacturing sector. However, because international competitiveness requires technological change that is biased towards capital- and skill-intensive manufacturing, the sector's contribution to growth and employment creation has been disappointing (Du Plessis & Smith, 2007).

An analysis by Edwards (2001) of the factors that drive export growth and labour demand revealed that these factors are consistent with increasing unemployment. He further identified two distinct impacts that trade liberalisation has on employment levels:

- structural changes at firm level to increase international competitiveness, and
- access for imports into previously protected sectors.

As a consequence of technological change and improvement, Edwards (2001) found that there had been a significant increase in the capital intensity of exports between 1993 and 1997, once again resulting in rising skill intensity in the manufacturing sector.

Lewis (2001), on the other hand, found that between 1992 and 1999, unskilled labour intensive exports declined by 2.1 per cent, while human capital-intensive exports increased by 9 per cent during the same period. However, Lewis (2002) does agree with Edwards that South Africa has a remarkably low and declining share of exports that use unskilled labour, compared with the relatively high share of exports that use more skilled labour. This explains why despite the rapid growth in exports, the manufacturing sector is still not creating jobs.

The Department of Trade and Industry (DTI) (2002) has also acknowledged the correlation between the high rates of investment in capital, skill-intensive technology and export-orientated industries, as a necessary structural change for increasing

international competitiveness. Therefore, trade liberalisation has transformed the structure of the South African economy. As a result, the nature of the demand for labour has been altered, resulting in a growing unemployment rate.

From the literature, it is clear that unless the pool of skilled labour increases rapidly, further growth of manufactured exports will be constrained by skill shortages, resulting in even higher unemployment, and will have implications for labour demand.

2.6. Implications for labour demand

South African policy makers are constantly faced with the challenge of high and growing unemployment. Moreover, policy makers believe that the future of labour demand depends on South Africa's manufacturing sector and its potential for growth. However, unless the skills of the South African labour force rapidly improve, the development path that government has chosen will be unattainable.

According to Altman and Mayer (2003), increasing unemployment can also be ascribed to the loss of jobs in traditional resource-based industries in mining and agriculture, without a simultaneous increase in employment in more advanced industrial sectors, as would be expected in a process of development and structural change. They continue by explaining the loss of jobs in the primary resource-based industries as being caused by technical conditions and the commodity price trends in the case of mining. In agriculture, the fear of potential land tenure claims and labour market laws and rigidities have contributed to the strain on labour demand.

As identified in the theory, employment growth not only depends on economic growth, but also on a strong human-capital formation, and according to Altman and Mayer (2003:80-81), South Africa has weak human-capital formation. They identified the following as possible causes for the weak formation and falling employment: slow growth of the secondary and tertiary sectors owing to restricted international interaction, limited entry of small businesses, constrained demand, and a vulnerable labour market structure. These conditions were created before 1994 in the efforts to boost import substitution, combat sanctions, and control the labour market and access to education.

From a literature review of studies done by Banerjee *et al* (2008), Adams *et al* (2013) and Du Plessis and Smit (2007), it seems that the legacy of apartheid has left South Africa with a severe gap in skills attainment. Because of South Africa's sophisticated cost structure and domestic market production sectors, South Africa is considered to be a middle-income economy. However, Klasen and Woolard (2009) stated that the skill level of the country is more associated with that of a less-developed country.

In reality, the potential for mass employment through labour-intensive exports in a middle-income economy like South Africa is quite limited. According to Altman (2001), the reliance on a labour-intensive export strategy is unrealistic in a middle-income economy since the firms depend on low wages to remain competitive. To maintain low wages, the cost of living will have to be reduced through social wages as proportion of income, or reduce real wages through exchange rate deviations or wage controls. If low wages are not maintained, it is highly unlikely that firms will continue to be competitive in international markets. Therefore, in an economy where there are small and slow-growing domestic markets, it can be assumed that foreign markets are an important source for labour demand and employment expansion.

Ultimately, the means by which the South African economy can absorb more labour depend on the expansion of two interconnected activities: higher-value tradables and low-productivity, non-traded subsectors (Kapsos, 2005). In the past, economic thinking in South Africa has tended to separate these two activities. On the one hand, the South African Foundation (1996) placed emphasis on the importance of a stable macroeconomic environment, together with labour market flexibility, to boost the expansion of low-productivity tradables through Foreign Direct Investment (FDI).

On the other hand, MERG (1993) placed emphasis on state-financed opportunities, such as mass housing, public work programmes and more equal income distribution, to increase demand for domestic labour. However, these approaches do not reflect on the source of income to finance the expansion of local labour demand, and underestimate South Africa's structural constraints on the road to macroeconomic stability.

Altman (2001) and Kapsos (2005) stated that one of the most effective ways to create employment opportunities is by increasing domestic demand for labour-absorbing, non-

traded goods and services. Although most goods and services can be traded, some are orientated towards the local market, such as social services and construction.

Promoting non-traded goods and services, such as public work programmes and housing construction, is given in recommendations to boost the economy and has long been a part of a Keynesian employment programme. Housing construction, in particular, was seen as a feasible strategy for providing the necessity of housing to households and so stimulates construction, while providing the basis for small business development.

Most of South Africa's national growth policies that have been implemented since 1994, such as the RDP, GEAR, ASGISA and NGP (together with the IPAP), have included this strategy, which has been a central part of the ANC's programme since entering government in 1994. According to Altman and Mayer (2003), non-traded sectors offer many opportunities. These include meeting citizens' basic needs, promoting small and medium enterprises (SMMEs), together with strategic attention to obtaining state-owned enterprises and large firms.

In addition, Berry *et al*. (2002) found that SMMEs are generally more labour intensive than large firms are, and have higher labour absorption capacities, and that the majority of SMMEs operate in the non-traded sector. Given the central role of SMMEs in employment creation, government needs to consider more effective policy instruments to promote the expansion of the non-traded sector. According to Bigsten and Gebreeyesus (2007) and Shiferaw (2009), job creation is mainly constrained by a lack of supply of job opportunities, and because South Africa's private sector is dominated by SMMEs, policy makers should address the issue of firm growth.

2.7. Policies for productive employment

From the literature, it is evident that there is lively debate about the nature of South Africa's economic policies in government's quest to address unemployment. Two interesting positions are provided in this debate by Hausmann and Rodrik (2003) and Lin and Monga (2011).

According to Rodrik (2006), structural change can be interpreted as a process of self-discovery where innovative firms determine what a country's competitive edge is. They argue that policy should support such firms, since they bear more cost and risk than the firms who imitate them do. In addition, Lin and Monga (2011) found that firms could find a country's comparative advantage by comparing its sector structure with those in countries with a similar structure at higher stages of development. According to their framework, the first step is to industrialise a sector and compare its list of tradable goods and sectors that had been produced in the last twenty years with those in growing countries with similar resource endowments, together with a per capita income of about 100 per cent higher than their own. They further stated that countries should give preference to industries where local firms have already entered the market.

On the other hand, authors such as Lin and Chang (2009) and Amsden (2011) argue that government should take the lead and play an active role in structural change by identifying the country's comparative advantage. However, Altenburg (2013) argues that South Africa is lacking in the capabilities for selective state interventions. He found that selective state intervention can be a serious obstacle to the effective implementation of industrial and economic policies in South Africa.

Considering the literature, policy intervention should include government-funded active labour market programmes, aimed at employment creation in the private and public sector, education and training incentives, and job search assistance to address the skill mismatch, together with reforms of labour legislation.

According to the Heckscher-Ohlin theory (1919), South Africa has a comparative advantage in unskilled labour-intensive goods, which could explain the country's high level of unemployment. The Heckscher-Ohlin theory predicts that liberalising the economy would lead to an increase in the demand for unskilled labour commodities, increasing wages and possibly employment of unskilled labourers (Adelman, 1964). This will in turn result in decreased inequality and poverty (Adelman, 1964). Unfortunately, this has not been the case for South Africa.

2.8. Summary

This chapter has highlighted a number of key theories and literature, as they relate to and characterise South Africa's labour market, to better understand the issue of persistent unemployment.

Adam Smith, David Ricardo and John Stuart Mill, as founders of economic growth theories, placed emphasis on the role of investing in human capital and increasing labour productivity. To Smith, economic growth would be the result of division of labour and the improvement in both physical and human capital that would result in economies of scale. Smith also believed that government had an obligation to provide education for workers. Ricardo further modified Smith's model by adding that capital and labour are in constant competition, and that capital can normally not be employed unless there is an increase in labour. Mill, with Smith, agreed on the importance of the division of labour and the role of government in stimulating economic growth. In addition, Mill saw capital as a means of future production that was previously accumulated by labour. According to Mill, the division of labour meant that capital could be used more effectively to gather returns more quickly.

To Schumpeter, technical innovation was the key to economic growth and job creation, and he demonstrated that human resources are far more important as a factor of production than natural resources are. He argued that entrepreneurs will be induced to innovate, once profits start to decline.

Solow saw the continually rising capital-to-labour ratio as a requirement for continuous growth, and in order for the capital-to-output ratio to improve, technology has to improve. The key variable in the Solow growth model is labour productivity, and technology which increases the productivity of labour.

Kenneth Arrow, on the other hand, sought to associate learning with the level of knowledge already accumulated, and not with the rate of growth. It was Arrow that introduced the concept of 'learning by doing', where labour productivity will increase as a result of people getting better at doing a specific job, the more they practice doing it.

The approach of ‘learning by doing’ and the ‘spillover effect’ was further studied by Paul Romer. In contrast to Arrow, Romer focuses on knowledge and the investment in new knowledge as the basic form of capital and does not consider physical capital in his model.

These different theories all have different models and views on economic growth and job creation. Several factors were stated, including human capital, education, labour, and technological change. These theories emphasise the importance of improving skills and investing in human capital that will yield returns for both the employer and the employee. These theories show that human capital is interdependent on technological advancements and can be considered as the driving force of economic growth.

It can therefore be argued that one of the reasons why South Africa is unable to create more job opportunities or compete efficiently in the emerging global market is because of the shortage of skills required. In order for the labour force to be fully featured, education, training and retraining is crucial. Studies done by Edwards, Kapsos and Adams *et al*. have all found that investing in human capital enables countries to perform better in terms of employment, growth, and reduced poverty and inequality. In the end, there is a very close link between human capital, physical capital and technological change, indicating the interdependence between these variables.

However, the growing unemployment among semi-skilled and unskilled workers presents something of a challenge for policy makers, owing to the fact that industries and sectors that have become internationally competitive and grown during the 1990s, have done so by shedding labour and increasing capital and skill intensity of production.

Considering the literature, policy intervention should include government-funded active labour market programmes, aimed at employment creation in the private and public sector, education and training incentives, and job search assistance to address the skill mismatch, together with reforms of labour legislation.

Economic policy has its limitations, and cannot solve all of the problems facing South Africa. However, the implementation of economic growth policies since 1994 has

enabled government to devote increasing resources to improving the lives of South Africans and achieve faster economic growth.

The next chapter will give an overview of the economic performance of South Africa between 1994 and 2014 and discuss the various policies implemented since South Africa became a democracy in 1994.

Chapter 3: Economic performance of the South African economy between 1994 and 2014

3.1. Introduction

South Africa's transition to democracy in 1994 created expectations of a turnaround from the economic decline experienced under apartheid. It also fuelled expectations of progress in economic and social well-being, together with reduced inequality (Aron *et al*., 2008). In order to help foster economic growth and support redistribution, sound macroeconomic policies were expected to be implemented. In particular, it was hoped that access to education and skill development would increase, together with employment opportunities that would further help to alleviate poverty (Aron *et al.*, 2008).

However, the economic and social legacy of the apartheid era presented the South African Government with significant policy challenges. The South African economy had not only been experiencing a long-term growth decline relative to other market economies, but had fallen behind in the productive and effective employment of capital and labour (Banerjee *et al.*, 2008). Together with the high rates of unemployment and low wages, poverty and inequality are still on the rise.

Several economic policies have been unveiled since the democratic election in 1994, none of which have been fully effective in addressing the problem of unemployment (Aron *et al.*, 2008). The South African Government is still struggling to create jobs, mostly because they have failed to adequately address the area of education and skill development (Aron *et al.*, 2008).

This chapter will give an overview of South Africa's growth, labour market and unemployment traits since 1994, and sets out to identify, describe and explain South Africa's economic policy, programmes and strategy decisions and economic recovery experienced since the transition in 1994, with a specific focus on the labour market.

3.2. Overview of South Africa's growth path since 1994

An economy's growth rate is determined by the rate of increase in the use of capital and labour, together with other factors of production, as well as the efficiency with which these factors are used (Terreblanche, 2003). There is also a vast range of subsidiary factors that influence economic growth. Some of these include market structures, labour productivity, policies and regulations, and microeconomic management of the economy through the business cycle. More importantly, political factors, such as good governance and the formulation of feasible policies, play an especially important role in economic growth (Faulkner & Loewald, 2008).

According to Du Plessis and Smit (2007), South Africa's economic growth has improved significantly since the country's transition to democracy and has been reasonably stable throughout the democratic era.

Before 1994, South Africa's economic growth was conditioned on low productivity and low employment approaches to production, which took advantage of the limited competition and cheap intermediate inputs. During this period, there were separate and vastly unequal public services, especially in education, which contributed to the creation of large urban and semi-urban communities with low levels of education and very little means of self-generated economic development (Faulkner & Loewald, 2008). Moreover, a large urban African working class developed in the manufacturing and mining industries. By 1990, the geographical distance between urban, semi-urban and rural areas had increased the cost of labour supply, together with a lack in public transport, roads and housing to absorb migrants from rural industrial areas (Faulkner & Loewald, 2008).

However, post-1994 the economy has performed quite well, compared with global standards, even though the country has lagged behind other middle-income developing countries since 2008. From 1994 to 2008, South Africa's GDP growth of 3.6 per cent equalled the average for middle-income economies (StatsSA, 2013c). However, from 2009 to 2012, the economy grew by only 3.1 per cent annually, while other middle-income economies averaged at 4.3 per cent. Gross national income (GNI) has

increased even faster, with an average of 2.6 per cent, with a total increase of R48 001 from 1994 to 2013 (StatsSA, 2013c).

According South Africa's Economic Development Department (EDD, 2011), South Africa's improvement in its growth performance after 1994 lies in the country's reintegration with the global economy and the removal of economic sanctions. For the first time since 1985, South Africa had unrestricted access to foreign capital, allowing a deficit on the country's current account and balance of payments. South Africa's current account currently has a 6 per cent deficit, after being at a 1.6 per cent surplus until 1998.

The second marked feature of economic growth performance since 1994 was the increase in private sector investment. Investments increased from 8 per cent of GDP in 1992 to 14 per cent in 2008. Owing to the financial crisis in 2008/2009, investments levelled off at 13 per cent of GDP in 2009. Several factors have contributed to this trend, that is, increased competition, new business opportunities, and a fairly predictable policy environment up to 2007, together with a reduction in the cost of capital in response to lower inflation and government's financial position (EDD, 2011).

A third diverse feature of economic growth over the past two decades has been the shift in the relative importance of the various sectors in the economy. This has shown the difference that new industries can make, such as the telecommunication industry with an annual average growth rate of 9 per cent from 1994 to 2013, followed by financial services at 7.5 per cent growth per annum (World Economic Forum, 2013). This also shows the importance of competitiveness, especially in sectors such as business services, financial services and property, which have all been highly rated in the global competitiveness comparisons and have constantly been improving on their performance. Mining and retail also showed promise with growth faster than GDP. Throughout the democratic era, mining has contributed to more than half of the country's exports owing to booming commodity prices contributing to its above-average growth (Gossel, 2013).

In contrast to these dynamic sectors, sectors such as manufacturing, agriculture and government services, revealed slower growth over the past two decades. In real terms,

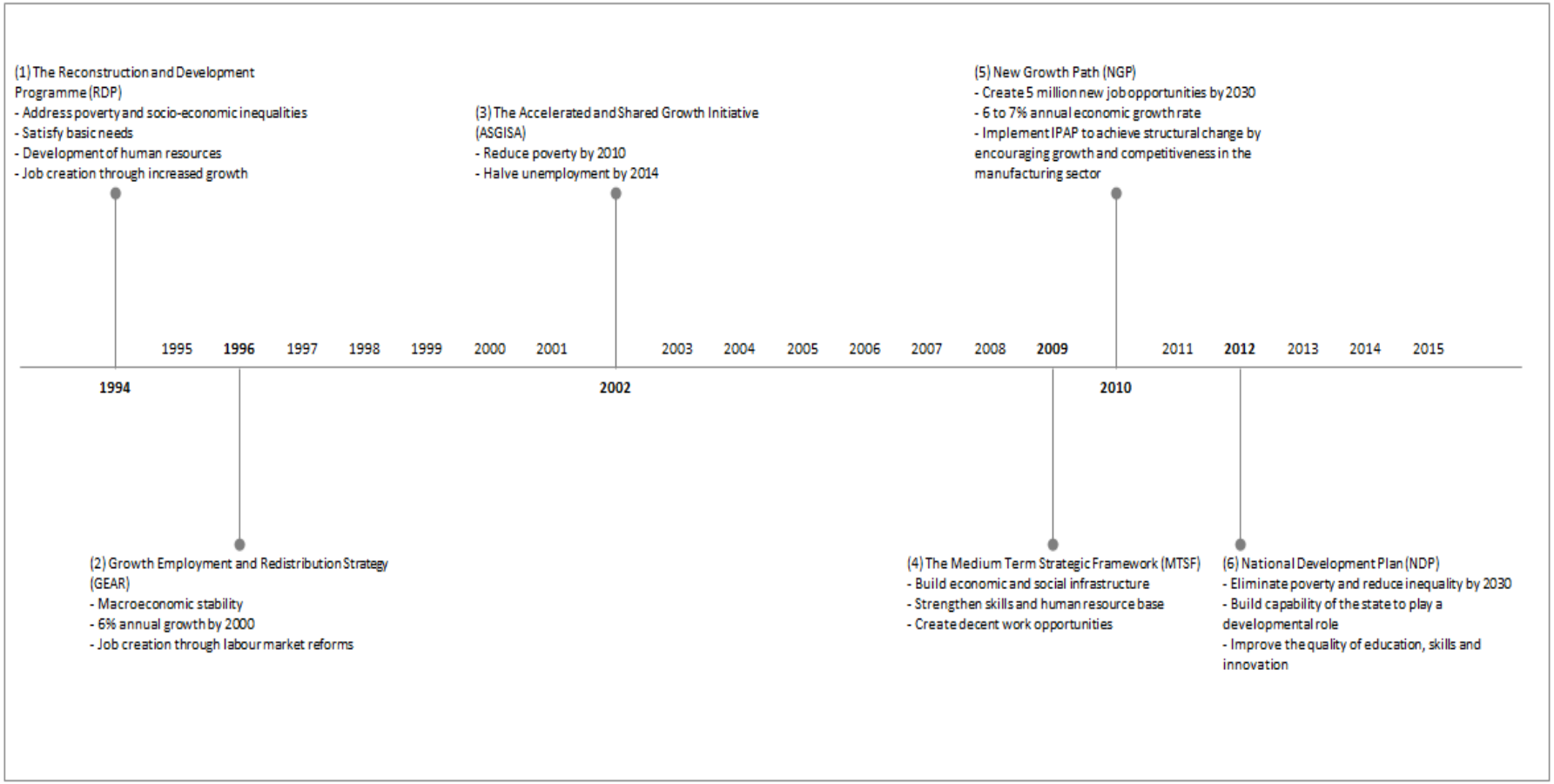
these sectors grew by 2.7 per cent, 1.4 per cent and 1.9 per cent, respectively, from 1994 to 2012. Manufacturing's contribution to GDP dropped from 21 per cent in 1994 to 10 per cent in 2012, and might be attributed to the impact of opening the economy to global competition after 1994, together with the uncompetitive nature of South African firms (DTI, 2013).

These changes were guided by the various policy interventions implemented after 1994. Government's aim with these policies is to achieve the economic and social well-being of all South Africans, with the main objectives being increased employment, higher economic growth and reduced poverty and inequality.

Figure 3.1 below sets out a timeline that illustrates the national economic policies that have been implemented since 1994, together with the main objectives of each policy. From the objectives shown on the timeline, reducing unemployment and poverty and increasing growth are the main objectives identified in all the policy initiatives since 1994. When comparing the statistics and growth figures with the broad objectives of these policies, it becomes clear that policy plays an important role in achieving growth and development. However, even in the broad definition of the objectives indicated on the timeline, it becomes evident that many of these objectives have not been met in the 20 years that South Africa has been a democracy.

Therefore, the low levels of economic growth and investment were insufficient to contribute to the reduction in unemployment, and policy has achieved very little success in distributing wealth and equality. Some of the policy programmes were successful in achieving macroeconomic objectives, but fell short with regard to the social challenges of the country, most notably job creation, poverty reduction and education. Figure 3.1 below gives an overview of the main objectives of the various economic policies implemented since 1994. A more detailed discussion on these policies, the objectives, challenges and outcomes will follow in the sections below, with the main focus being labour and unemployment since 1994.

Figure 3.1: Economic policies since 1994



Source: Author's own interpretation

3.3. The South African labour market: 1994-2014

The South African labour market has played a significant role in defining not only the economy, but the society as a whole. Prior to 1994, the labour market was used to separate the population along racial lines, resulting in limited education opportunities for non-whites, rendering them eligible for non-skilled and low-paying jobs only. However, since 1994, various legislative changes have been implemented to address the inequalities and wrongs of the past. These changes were delineated in the rights of labourers, encouraging the employment of non-white workers and providing them with minimum standards of working conditions to reduce the social inequalities.

Various studies have been conducted on South Africa's labour market and employment performance after 1994. The general findings of studies done by Yu (2008) and Hodge (2009) were that South Africa's labour market grew faster than employment take-up did, and that not all the new entrants could be employed. Furthermore, Burger and Woolard (2005) and Oosthuizen (2006) found that economic growth is not sufficient to reduce unemployment. In addition, Yu (2008) found that segments of the population with low skill levels, those that live in rural and under developed areas, and non-whites were most likely to be unemployed.

A study recently done by Lyle, Kasongo, Moses and Yu (Lyle *et al.*, 2015) finally pointed out that unemployment remains one of South Africa's biggest challenges and listed a host of reasons for this. Firstly, an education system that does not produce sufficiently educated workers, results in a large number of uneducated youth entering the labour market with no skills. Secondly, wage rigidity attributable to new legislation where the minimum wages are above market clearing level, makes it impossible for employers to employ all the labour they want to. Thirdly, unrealistic reservation-level wages where graduates are reluctant to work if their monthly income does not exceed their monthly income form social grants. Finally, they point out that South Africa has a small informal sector that is not easy to gain entry to. As a result, those who cannot find employment in the formal sector also struggle to become employed in the informal sector owing to poor access to the credit market and a lack of infrastructure. Therefore, job creation in the

South African economy has not been sufficient in absorbing new participants, resulting in the increase in unemployment, despite the small growth in employment since 1994.

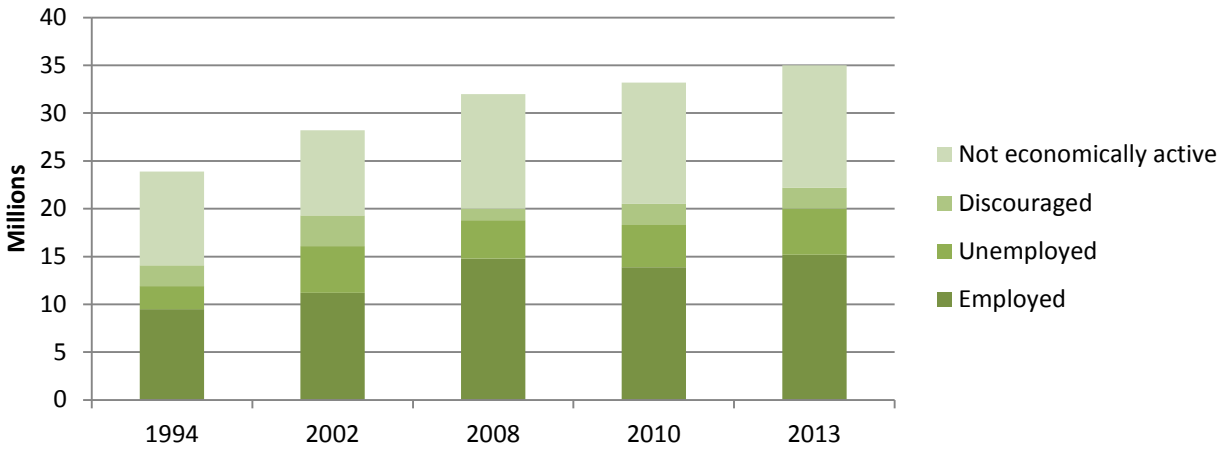
3.4. Employment overview: 1994–2014

Based on the overview of the South African labour market in section 3.3, the following section gives an overview of the structure of employment in South Africa over the past twenty years.

3.4.1. The working-age population

Figure 3.2 below shows the status of the working-age population since 1994. The working-age population measure is used to give an estimate of the total number of potential workers within the economy, differentiating between those that are actually working and those that are currently unemployed.

Figure3.2: Status of the working-age population: 1994–2013



Source: Statistics South Africa (2013c).

Since 1994, more than 3.5 million jobs have been created. In 1994, only 39.8 per cent of working age adults were employed. By the third quarter of 2013, 43.3 per cent of the working age adults were employed, improving the employment ratio slightly since 1994 (StatsSA, 2013d). Official data put the formal unemployment rate in 1994 at 20 per cent, although only 39.8 per cent of the workforce was employed, meaning that many of the

working age adults were not included in the official employment statistics. Consequently, the unemployment figures from pre-1994 were highly defective (StatsSA, 2013c). It was only in 2002, after the Labour Force Survey was conducted (by StatsSA), that more accurate labour statistics were established.

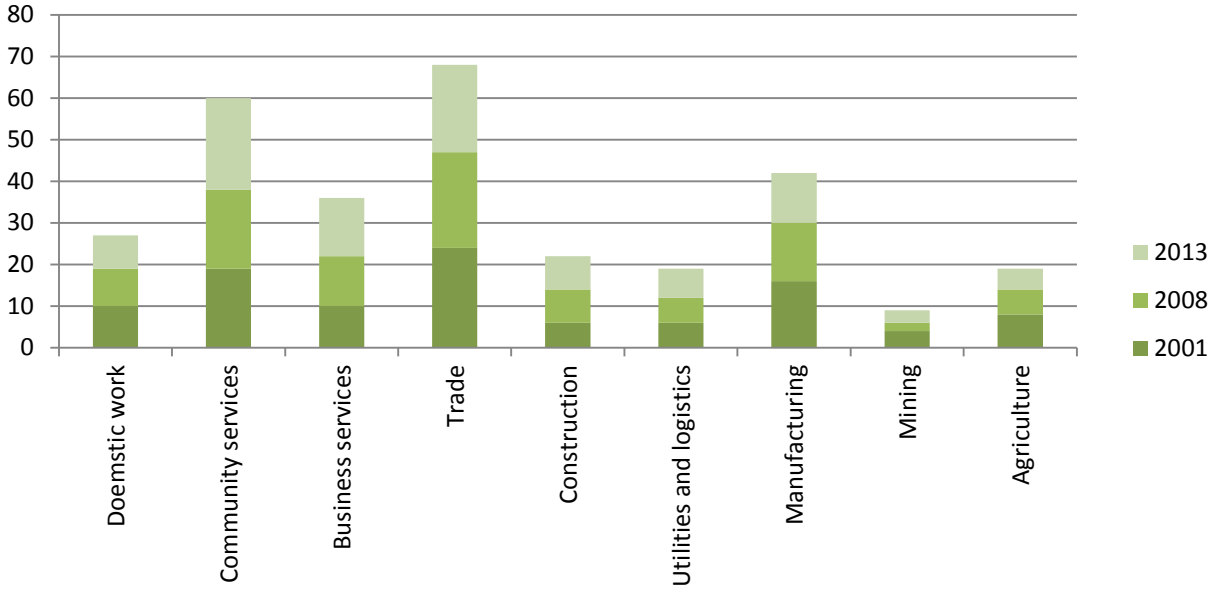
Since 1994, more and more people have been entering the labour market, actively seeking employment, particularly in urban areas. As a result, the share of working age adults who were not employed or looking for a job, known as the “economically inactive population”, fell from 41 per cent in 1994 to 37 per cent in 2013 (StatsSA, 2013c). Consequently, the number of people actively seeking work was estimated at 2.4 million in the mid-1990s, rising to 4.8 million in 2013 (StatsSA, 2013c).

However, one of government’s biggest concerns is unemployment among the youth. In 1994, 37 per cent of the youth aged 18 to 29 were not employed or in training or receiving education and this has increased to 44 per cent in 2013 (StatsSA, 2013d). The estimated unemployment rate among the youth between the ages of 18 and 29 increased by 10 per cent between 1994 and 2013, increasing the number of unemployed youth by 1.3 million (StatsSA, 2013c).

3.4.2. Employment overview of the different industries

Figure 3.3 below gives an overview of the broad industry classifications and the employment per industry to see whether the structure of employment per industry has shifted over the last couple of years.

Figure 3.3: Employment by industry [1]



Source: Statistics South Africa (2013a)

Between 1994 and 2013, the structure of employment by industry had shifted substantially. Figure 3.3 above indicates that a significant number of new job opportunities were created in the community service sector between 2001 and 2013. These job opportunities were primarily in education, health care and the South African Police Service (StatsSA, 2013a). The expansion of business services was largely the reason for employment growth in the private sector, together with increasing employment in transport, communication and construction.

In contrast, main productive sectors, such as manufacturing and mining, experienced much slower growth in employment and a decline as a percentage of total employment over the same period. Similarly, domestic or household service, which is a key employer among African women, experienced some growth, but also fell as a percentage of total employment in the economy. On the contrary, the agricultural sector saw a decline in both employment growth and a share of total employment between 2001 and 2012, despite some growth in 2013. From Figure 3.4 below, it is evident that trade (that is, wholesale and retail trade) has been one of the leading employment industries since 2001, followed by community and business services.

1 The industries used in Figure 3.3 are the 9 broad industry classifications used by StatsSA and the SARB.

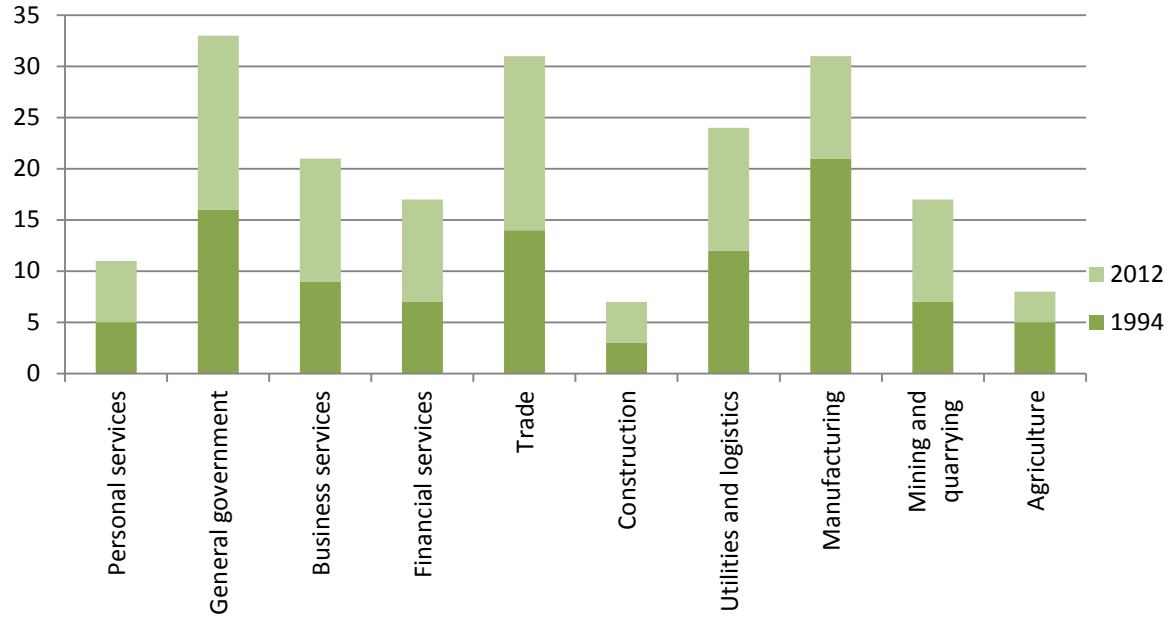
Changes in the trade sector have been mostly driven by internationalisation, consolidation and the increase in competition. Some of these changes have transformed the way in which business operates and the types of jobs for which there is a demand (Van Aardt & Van Tonder, 2011). South Africa's wholesale and retail sector is regarded as a major employer and a growth sector of the economy. However, to ensure the sector's competitiveness and its contribution to economic growth, skill development needs to be addressed urgently (Van Aardt & Van Tonder, 2011).

Owing to a substantial increase in government spending on labour-intensive projects, the community service sector is ranked as the second-largest employment sector since 2001.These labour-intensive projects are called the Extended Public Works Programme (EPWP), which has two major components: using labour-intensive methods to create new job opportunities, and teaching people new skills to find jobs after completing the EPWP (NGP, 2010). However, EPWP is not sustainable job creation in the long run.

Finally, the business sector is probably the sector that has benefited the most from technological advancements and has been the least disrupted by labour unrest, resulting in a sharp increase in employment (IMF, 2013). However, one of the reasons for the good performance of the business sector is attributable to the rise in debt levels, especially households, which is not sustainable in the long run.

Figure 3.4 below supports these findings and indicates that these major industries have also made the biggest contribution to GDP since 1994.

Figure 3.4: Composition of GDP by major industries for 1994 and 2012



Source: Statistics South Africa (2013a)

From Figure 3.4 above, it is evident that all the major industries had made an increased contribution to GDP by 2012, from that in 1994. Trade, general government, utilities and logistics, together with business services, remained the biggest contributors to GDP over the same period, while construction, manufacturing and agriculture's contribution to GDP has declined. This decline may be attributed to the impact of opening the country's economy to global competition after 1994, together with the uncompetitive nature of many South African firms. The role of manufacturing and agriculture in stimulating the economy and employment, both directly and indirectly, is often complex and requires careful analysis. This is particularly so in the light of major changes that have occurred in the domestic economy over the past two decades, as well as the specific structural characteristics of the South African economy (Zalk, 2014). However, a number of interventions have been developed and included into the NGP and IPAP to stimulate development and reverse this trend in sectors such as these (Zarenda, 2013a).

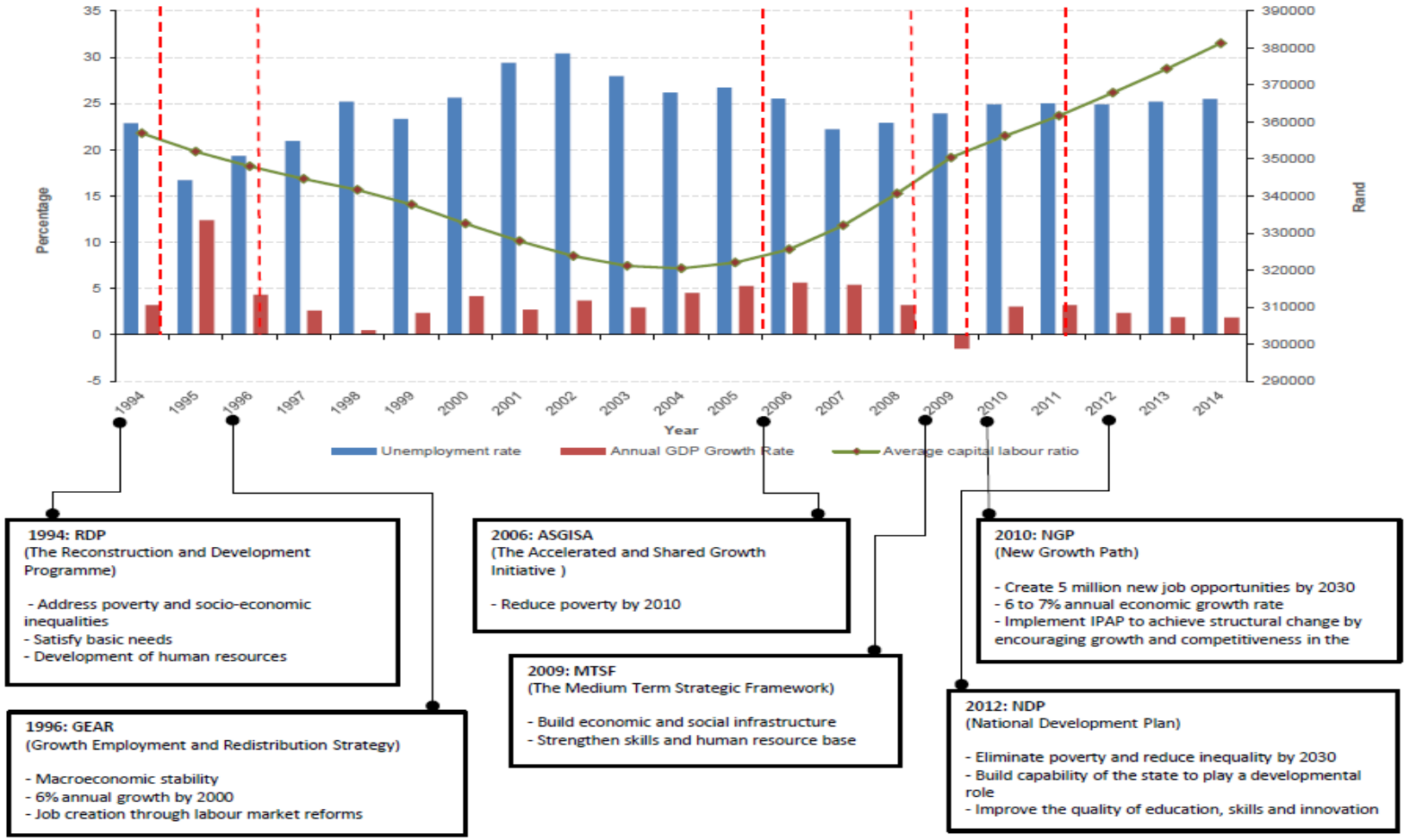
These interventions aim to use the manufacturing sector to transform inputs from the primary and service sectors into higher-value products to stimulate employment along the entire value chain, both directly and indirectly. Indirectly, manufacturing is also aimed at providing additional growth and employment through forward linkages to

downstream sectors, mainly services. Similarly, these policies use the agricultural sector to address spatial imbalances for improving incomes and including people in rural areas (DTI, 2013).

The rise of industries such as trade and manufacturing, and their increasing contribution to growth, shows a shift in demand towards more skilled labour and capital in production. Therefore, government policies play an important role in promoting education and skill development, but also in increasing employment of unskilled labour, since trends over the past two decades have shown increasing unemployment among unskilled workers (Van Aardt & Van Tonder, 2011).

This is evident in Figure 3.5 below, which presents a combined chart to illustrate the unemployment rate relative to the annual GDP growth rate and the average labour-to-capital ratio from 1994 to 2014. The figure is divided according to each policy period to show the relationship among these variables and how it changed as each new policy was implemented.

Figure 3.5: Unemployment rate, annual GDP and the average capital labour ratio:[2] 1994-2014



Source: SARB (2014a) and StatsSA (2013b)

2 According to the SARB, the average capital labour ratio measures the ratio of capital employed relative to the labour employed.

Figure 3.5 above illustrates that during the time the RDP was introduced, GDP increased significantly, together with a slight decrease in unemployment. According to Heymans (1995), building a stronger and more inclusive economy was seen as involving deeply interrelated policies, since growth without development will not bring about any structural transformation that would address South Africa's inequalities. While some of the objectives of the RDP were achieved, most fell short of their targets, especially in job creation. The failure of governmental efficiency and the lack of state capacity led to the implementation of the Growth, Employment and Redistribution Strategy (GEAR).

GEAR, however, had little success in reducing unemployment or increasing growth. During this time, South African unemployment breached the 30 per cent level of unemployment, making it one of the highest unemployment rates in the world. According to Visser (2004), the GEAR strategy restricted economic growth to a level that was likely to have an insignificant impact on the high levels of unemployment, poverty and inequality.

It was only in 2006 when ASGISA was introduced that unemployment started to show a slight decrease, together with a small improvement in GDP growth. ASGISA acknowledged the challenges of the jobless nature of economic growth and aimed to reduce poverty by 2010 and halve unemployment by 2014 to 14 per cent. However, in 2009 South Africa experienced negative growth and an increase in unemployment attributable to the global financial crisis; a big setback in the growth and employment creation ASGISA was aiming for.

In 2010 the NGP was introduced to help overcome the structural challenges identified in RDP, GEAR, ASGISA and the MTSF and to create 5 million new job opportunities by 2020 through increasing economic growth to a sustainable rate of between 6 and 7 per cent, annually. In the event that this might happen, unemployment would be reduced to 15 per cent (NGP, 2010). However, looking at Figure 3.5 above, it shows a decrease in GDP growth while unemployment stabilised at around the 25 per cent mark. One of the reasons for this is pointed out in a study by Van Aardt and Van Tonder (2011), which found that the economic conditions created by government do not favour the

achievements of the stated objectives. One of the biggest concerns is that, for higher economic growth to translate into increased employment opportunities, economic growth should be of a labour-absorbing nature (Van Aardt & Van Tonder, 2011). One of the reasons for the weak translation of economic growth into job creation can be attributed to employers' preference for using capital over labour in production. Therefore, economic growth of 7 per cent would not automatically translate into the creation of 5 million new job opportunities (Zarenda, 2013b).

This is evident in Figure 3.5 above, where the capital-to-labour ratio was initially declining during the first decade of democracy, but started to increase sharply in 2005 and continued to rise, indicating a further capital deepening. The capital-to-labour ratio clearly indicates that South Africa's economy has become more capital intensive over the past ten years. The International Labour Organisation (ILO) (1999) completed a study on causes that have contributed to increasing capital intensity that helps to explain the transition in South Africa. Firstly, trade liberalisation has shifted production away from labour-intensive sectors towards more capital-intensive ones. Second is the shortage of skilled labour. Labour-intensive sectors in South Africa have become more skill intensive and the shortage of skills undermines the growth and development of labour-intensive sectors. Thirdly, continuing to specialise in capital-intensive goods when facing high rates of unemployment suggests that the removal of industrial incentives that favour capital-intensive sectors might have been expected to shift exports in favour of labour-intensive sectors to increase employment. However, this has not happened.

In addition, Fourie (1997) characterised South Africa's trend in capital and labour use as typical of industrialised economies with far lower unemployment rates. He identified some possible causes, among them being consumer preferences that demanded more capital-intensive goods, the uncompetitive nature of large South African firms that undermine smaller labour-intensive enterprises, and the shortage of skilled labour in the labour market.

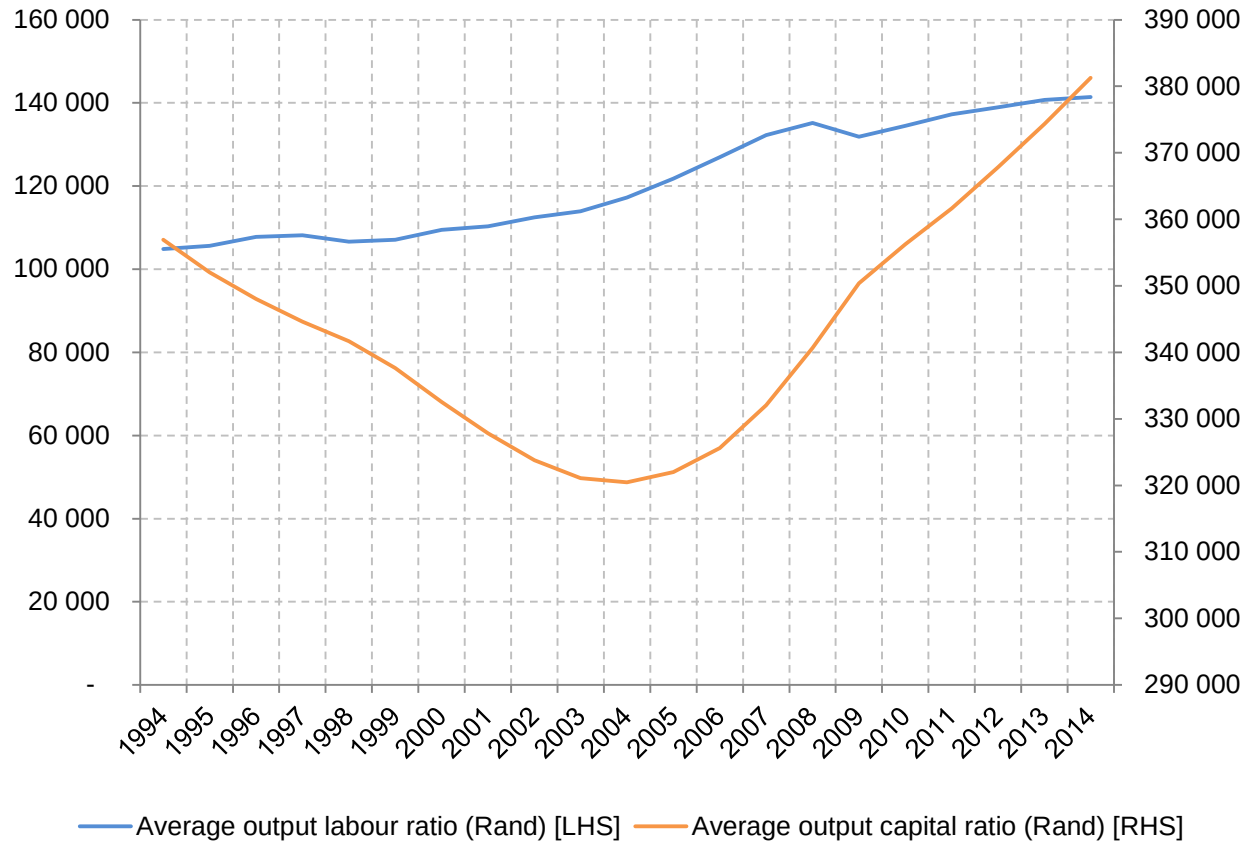
As a result, the rising capital intensity of the South African economy is in part responsible for the high unemployment, and appropriate policy responses depend

largely on why South Africa is becoming more and more capital intensive. The literature has pointed to increasing globalisation, the uncompetitive nature of firms and the low skill levels of workers as main contributors to the transition.

The combined picture shown in Figure 3.5 above does not at all reflect the ambitious objectives set in the various policy initiatives. In addition, Figure 3.6 below illustrates the average output labour ratio and the average output capital ratio, measured as output per one unit of input. Since South Africa is a developing country with an abundance of labour, Figure 3.6 shows that over the past twenty years the share of labour output relative to capital output has been higher and relatively constant. However, despite the fact that the average labour share of output has not been on a falling trend, it has not matched the sharp rise in the average output of capital.

South Africa has always been considered to be a capital-poor country who could not manufacture heavy or specialised machinery and equipment on a profitable basis. However, in recent years, South Africa has been experiencing an increase in the capital intensity of production as seen in Figure 3.5 and 3.6 between 2005 and 2014 where the capital required to produce each unit of output has increased. This increase in the capital intensity of production is a worrying phenomenon for a country like South Africa where there is an abundant supply of labour. The required trend should be more towards labour intensive production, rather than capital intensive production.

Figure 3.6: Average output labour ratio vs. average output capital ratio



Source: SARB (2015)

However, despite the disappointing trends in employment and growth, government has made some contribution by implementing public employment programmes, focusing more on education and skill development and opening the economy to global competition to increase growth.

3.4.3. Public employment programmes

Given South Africa's high levels of unemployment since 1994, the public employment programmes have become an essential part of policy interventions in government's quest to reduce poverty and unemployment. South Africa's Expanded Public Works Programme (EPWP) is involved in various sectors across the economy, with both an urban and a rural focus. The EPWP provides short-term job opportunities to the

unemployed, particularly the unskilled, to provide them with basic-level training (NGP, 2010).

The NGP (2010) indicates that by increasing economic growth, coupled with improved education and skills development, South Africa will be able to address its structural unemployment problem. The EPWP is just one of the many programmes that are aimed at supporting employment creation.

Between 2004 and 2009 when the EPWP was launched, a target of 1 million work opportunities was set across various social and economic sectors. By the end of 2009 this target was exceeded, with a total of 1.6 million job opportunities being created. Between 2009 and the first quarter of 2013, the EPWP almost doubled its previous target by creating more than 3 million new job opportunities (NGP, 2010).

Compared with the number of unskilled unemployed people in South Africa, the opportunities created through this programme is still small. Nevertheless, these public employment programmes are crucial in supporting job creation, especially in reaching unskilled women, youth and people with disabilities. These programmes play a crucial role in providing a temporary solution to unemployment and in helping government to facilitate the process of job creation and skill development in the future, since it is one of the few success stories in the attempts at employment creation in South Africa.

3.4.4. Education

Since 1994, the South African Government has implemented key policy reforms to address the lingering inequalities of apartheid in the education system. Democratic South Africa inherited a racially differentiated education system with a matriculation pass rate of 53.4 per cent, an adult literacy rate below 70 per cent, and only 7.1 per cent of the population having received tertiary education (DoE, 2012a).

With more than 5 per cent of the country's GDP allocated towards education, South Africa is considered to have a high-cost, low-performance education system that does not compare favourably with the education systems of similar developing countries (DoE, 2009b).

There is a multitude of well-published problems in South Africa's education system including: under-qualified teachers, poor performance by both students and teachers, poor learner standards, and insufficient resources, together with inadequate infrastructure. These are just some of the challenges that Government have had to overcome since 1994 (DoE, 2001).

However, since South Africa became a democracy, education has been on the rise. In 1994, 36 per cent of South Africa's workforce had a matric or higher qualification, while 8 per cent had no education background, and only 5 per cent had a university degree (DoE, 2001). However, by the third quarter of 2013, the share of workers with no education had fallen by 6 per cent, while the share with matric or higher reached 52 per cent and university graduates reached 12 per cent (StatsSA, 2013c).

After 1994, the South African Government emphasised in various policies the important role that education can and should play in the transformation of the country's economy and have achieved the following results since 1994:

Basic education: Between 1994 and 2012, gross secondary school enrolment has increased by 38 per cent and was recorded at approximately 98 per cent in 2012 (DoE, 2012b). The improvements in access to basic education have resulted from a number of actions. By introducing no-fee schools, the burden of school fees for poor households has been lifted, and by 2012, 78 per cent of learners had benefited from this policy (DoE, 2012a). The National School Nutrition Programme has also contributed to regular and punctual attendance by learners, resulting in nearly 9 million learners receiving a school lunch in 2012.

In 2011 the National Curriculum and Assessment Policy Statement (CAPS) was launched to guide teachers on how teaching should take place in order to address the gaps identified in previous curriculums. To strengthen teaching and learning, CAPS was accompanied by the Annual National Assessment (ANA) system to enable the assessment of the education system below Grade 12 (DoE, 2012b).

The number of students obtaining university entry qualifications has also increased from 70 000 students between 2000 and 2002, to 128 000 between 2010 and 2012.

However, the number of Grade 12 students passing mathematics with an average of 50 per cent or higher has not been improving. This restricts a student's access to programmes such as engineering, which is a vital skill shortage in South Africa (South African Institute of Race Relations, 2013).

Post-school education and training: Since 1994, the national government has focused on increasing access to tertiary institutions. In their efforts, university enrolment has almost doubled, increasing from nearly half a million students in 1994 to almost 1 million in 2012 (DoE, 2012b). This includes universities, technikons and training colleges. To make this happen, bursaries from the National Student Funding Assistance Scheme worth R30 million were paid out to nearly 1 million university beneficiaries between 1994 and 2012 (DoE, 2012b).

Higher levels of education have contributed significantly to the changes in the structure of employment and there needs to be ongoing effort to ensure more enrolment in higher-level education institutions to address the skill shortage among the South African workforce, and also to contribute to a more competitive economy, especially since 1994.

3.4.5. Fiscal policy

In 1994, the new South African Government inherited a high budget deficit, resulting in increasing borrowing costs and less funding for government programmes and policies. However, by 2005 government had managed to improve the budget dramatically, from a deficit of 8 per cent of GDP in 1994 to a 0.5 per cent surplus in 2005 (SARB, 2014a). This allowed government to increase their expenditure, without having to increase their borrowing. This was mainly attributable to the increase in tax revenue collected after 1994. In 2008/2009, the budget ran into a deficit once again owing to the global financial crisis, resulting in the debt-to-GDP ratio reaching 36.3 per cent by 2012/2013 (SARB, 2014b).

In the early 2000s, the South African Government adopted a counter-cyclical stance. This counter-cyclical stance works against the cyclical tendencies in the economy. These counter-cyclical policies prevent massive spending when the economy is in

upswing, and stimulate the economy with stabilised spending when it is in downturn to support employment creation and growth (SARB, 2014b).

Since South Africa has adopted a counter-cyclical stance, the country has seen improved education and healthcare services, investment in infrastructure, together with growing attainment of local inputs, which are crucial for stimulating growth and bringing about more inclusive economic outcomes. This means that government will continue to run a higher budget deficit (Aron *et al.*, 2008). With that said, pressure on spending will continue for the foreseeable future, because of the deep inequalities that remain from apartheid. Currently, debt levels remain stable, with ongoing measures in place to ensure that the debt-to-GDP ratio remains steady (SARB, 2014a).

3.4.6. Trade policy

The transition to democracy and the opening of the South African economy to global competition led to a rapid increase in both imports and exports as a percentage of GDP. The country's economy has become more open, productive and outward orientated over the last two decades (NGP, 2010). This is partially in response to trade liberalisation and the end of the country's trade and political isolation after 1994.

Unfortunately, trade liberalisation gains are not equally distributed. Some consumers and industries have benefited from lower prices and higher output, while others have lost their jobs while losing out to more competitive international firms. This is a trend that is likely to continue as there will be further adjustments to costs and trade protection that will come down to ensure increased trade in the future (Van Aardt & Van Tonder, 2011).

During the mid-1990s, South Africa began with ambitious tariff and trade policy reforms. These included multilateral liberalisation through the World Trade Organisation (WTO), the elimination of quotas and the replacement of specific and mixed tariffs with ad valorem duties. New liberal agreements were also concluded with the European Union (EU) and the Southern African Development Community (SADC) (Rangasamy & Harmse, 2003).

During the early 2000s, South Africa's economy experienced increased trade, with a particularly sharp increase in imports, outperforming exports. However, owing to the global financial crisis in 2008, both exports and imports started to decline in volume terms. Thereafter, imports started to increase much faster than exports, worsening the current account balance (Gossel, 2013).

Between 1985 and 1994, exports as a percentage of GDP fell by 10 per cent. Owing to the commodity boom, exports started to increase again, opening up the economy in general. Half of the exports were contributed by the mining value chain, which later shifted from gold to platinum and iron ore, and in 2008 exports again reached 31 per cent of GDP (Gossel, 2013). However, owing to the financial crisis in 2008/2009, export volumes fell by 23 per cent. In 2013, exports were still recorded to be below the 2008 peak and were vulnerable to falling world mineral prices from 2011, the rising cost of electricity, and the striking actions of mineworkers (Gossel, 2013).

All through the 1980s, imports were at around 20 per cent of GDP. After 1994, South Africa's imports rose fairly steeply, increasing from 19 per cent in 1994 to 41 per cent in 2008. Like exports, imports were also affected by the financial crisis and fell from 41 per cent in 2008 to 18 per cent in 2009 (Nedbank, 2011). After the crisis, imports recovered strongly, growing by 47 per cent, contributing to 36 per cent of GDP. Accounting for almost a quarter of the total increase in imports was petroleum, which climbed from 10 per cent of imports in 1995 to 22 per cent in 2013, resulting in an 4 per cent increase in GDP (Gossel, 2013). Other important imports that contributed to growth in GDP were machinery and equipment, automotive vehicles, medical equipment and medicines, together with fuels.

However, a commonly expressed fear about trade liberalisation is that it will result in unemployment as low-cost imports replace domestic products in local markets. During the 1990s, over 700 000 jobs were lost in the tradable goods sector, while the manufacturing sector had lost nearly 11 per cent of jobs since 1994 (Dunne & Edwards, 2006). These job losses were mainly recorded in the primary sectors, namely mining, agriculture and resource manufacturing, and together, these three sectors accounted for

83 per cent of job losses. Although increased imports in the 1990s led to a rise in job losses, greater export growth resulted in employment gains (Flatters & Stern, 2007).

There are, however, some causes for concern about employment in the trading sector. Firstly, the net effect of employment in trade is small, and secondly, the employment gains appear to be larger for skilled labour than for semi and unskilled labour. Lastly, the changing trade orientation in South Africa over the last two decades appears to be for capital rather than labour (Gossel, 2013).

South Africa's ability to keep up with these changes is essential for the country to be successful in its integration with the global economy. It is also essential for policy makers to take into account some of the questions regarding South Africa's trade activities, and to also try ascertain why the skill and capital bias has become apparent in the manufacturing sector since 1994, and what can be done to avoid further job loss in this sector.

The following section will discuss South Africa's economic policies in more detail to see what the objectives were, what government wanted to address, and also to establish the outcomes and challenges before determining whether these policies effectively addressed unemployment.

3.5. Economic policy: 1994–2014

South Africa's transition to becoming a democracy now lies more than two decades in the past; a period long enough to look back at the country's growth performance and to recognise implications for future policy development. Over the past two decades, economic policies have been aimed at ensuring macroeconomic stability and increased access to basic social services. A number of initiatives have also aimed to spread the economic benefits across the population. However, the outcome in terms of economic growth and employment creation has been below expectations.

The following sections give an overview of South Africa's main national economic policies implemented since 1994.

3.5.1. The Reconstruction and Development Programme (RDP)

In November 1994, the Reconstruction and Development Programme (RDP) was declared as government policy that linked reconstruction and development. Government looked to the reconstruction of Europe after the World War II and the economic comeback by the United States (US) after the Great Depression (ANC, 1994). The economic policy used to resurrect their economies was a demand-driven approach through large infrastructure programmes, together with increased public investment and public sector employment. The ANC (1994) proposed a similar approach to this and introduced the RDP in 1994 to address the many social and economic problems facing the country.

Government realised that all the struggles the country faced were connected: the lack of housing, the job shortages, and inadequate education and healthcare, together with a failing economy. The primary objective of the RDP was to remove racial biases in order to address poverty and socio-economic inequalities inherited from the apartheid era (Cameron, 1996). Addressing poverty and building a stronger and more inclusive economy was seen as involving deeply interrelated policies, since growth without development will not bring about any structural transformation to address inequality, and development would be financially unsustainable.

Some of the interventions included in the RDP to achieve structural transformation and growth included restraint on fiscal spending, trade liberalisation, tax reduction, reduced government spending, and providing extended social services to previously disadvantaged groups. The RDP identified the following key programmes to achieve these goals (ANC, 1994):

- Satisfy the basic needs of all South Africans: Through the implementation of programmes providing essential services such as clean and running water, electricity, sanitation, transport system, social welfare funding and rural development.
- Development of human resources: By focusing on training and education opportunities, development of the youth and increasing literacy levels.

- Build the economy and the nation: Through job creation, eliminating all discrimination based on gender, race and religion, and protecting the rights of workers and creating a more equal society.
- Successfully implement the RDP objectives in all three spheres of government, local, provincial and national.

The theory behind the RDP was that if Government were to build and electrify a house, demand would be created for appliances and the factories that make these appliances would create jobs. The reality is that although the demand for these electrical appliances increased when government provided houses and electricity, these appliances were made by companies abroad and not by local firms in the local market (Cameron, 1996).

Although the RDP did not specify any particular numerical goals in terms of growth and employment targets, tax, debt ratios and fiscal deficits as a percentage of GDP, the RDP framework still required substantial resources, and other policy initiatives that were not yet in place to ensure success and from the beginning government lacked the capacity to implement this strategy.

Therefore, it is clear that the RDP aimed to confront development challenges in the country that resulted from uneven development during the apartheid era. The RDP comprehensively covered all aspects of development in South Africa, especially the issue of rural development, social welfare and basic education, and how the country's resources could be redistributed to improve the quality of life of all South Africans. In terms of social security and welfare, the RDP did achieve some results. Government managed to establish an extensive welfare system to provide for the elderly, the disabled and children in need. This included free healthcare programmes for mothers and children and the provision of meals for nearly five million schoolchildren (Heymans, 1995:57).

However, since 1994, there has been growing dissatisfaction with service delivery and employment creation as set in the RDP, and the RDP did not provide a detailed

programme for achieving its main objectives. In the end, the RDP was too broadly formulated (Heymans. 1995:61).

While some of the objectives of the RDP were achieved, most fell short of their targets, especially in the delivery of essentials and job creation. The failure of governmental efficiency and the lack of state capacity led to the implementation of the Growth, Employment and Redistribution Strategy in June 1996 as an extension of the RDP. Government realised that faster economic growth was needed to provide the resources necessary to implement the RDP efficiently, even though the social objectives of the RDP were noble. In addition, more certainty was needed on macroeconomic variables that determined investment decisions in the long run.

3.5.2. Growth, Employment and Redistribution Programme (GEAR)

To increase employment and reduce poverty in South Africa, the new democratic government made it a priority to foster economic growth. In the long run, economic growth was ensured by introducing macroeconomic policies, which aimed at lowering the barriers to trade, maintain exchange rate stability, lower inflation and reduce fiscal deficits by promoting growth, employment and redistribution (Visser, 2004). This macroeconomic policy was implemented in 1996, known as the Growth Employment and Redistribution Strategy (GEAR).

One of the first objectives of GEAR was to achieve a macroeconomic balance in the economy by reducing Government's budget deficit and the falling rate of inflation. The second objective was to achieve 6 per cent growth by the year 2000, by improving the country's performance in exports and fixed investments to increase growth. Finally, the GEAR strategy aimed to create jobs through redistribution from economic growth and labour market reforms (Mathe, 2002).

The GEAR strategy aimed to achieve these objectives through economic growth that would be led by private sector investments that would, in turn, create new job opportunities. The following policy changes were considered necessary for job creation and increased economic growth: containment of government debt service obligations,

reduction of the fiscal deficit, further liberalisation of the capital account of the Balance of Payments, further reductions in import tariffs, and the introduction of tax incentives to encourage new investments in labour-absorbing projects to increase job creation (Visser, 2004).

However, the GEAR strategy did not live up to all the expectations to increase growth, employment and redistribution. Between 1996 and 2001, the economy grew by a low 2.7 per cent per annum, instead of the proposed 6 per cent. Employment decreased over this period, instead of growing by 3 per cent. Furthermore, more than one million jobs had been lost since 1996, when the aim was to create 1.3 million new job opportunities by 2001 (Hirsch, 2005). Government investment grew at a low 1.8 per cent, when the aim was 7.1 per cent, and real private sector investment decreased from a positive 6.1 per cent to a negative growth rate of 0.7 per cent in 1998 (StatsSA, 1998). Welfare and health spending also decreased by 0.3 per cent and 0.5 per cent, respectively (StatsSA, 1999). Finally, the redistributive effect of the income transfer has not been large enough to truly make a difference in the lives of those facing growing unemployment and poverty. During this period, South Africa experienced jobless growth, while layoffs took place in both the private and public sector.

In the end, the GEAR strategy restricted economic growth to a level that was likely to have an insignificant impact on the high levels of unemployment, poverty and inequality. Together with the fact that this strategy presented a cut of government expenditure, but without any corresponding measures that might be used to promote the expansion of the economy that would result in job creation, the strategy was not considered to be a success (Visser, 2004).

By the end of 2000, government consumption, inflation and fiscal deficit targets were all met, bringing about greater macroeconomic stability and increased accountability. However, GDP growth, job creation and private investment indicators were disappointing, with the only success being the reverse of the negative GDP growth in the nineties (Hirsch, 2004).

In addition to the low levels of growth and investment, the strategy was unsuccessful in the reduction of unemployment, and according to COSATU (2011), more than 400 000

jobs were lost in the formal sector between 1996 and 1999, while the jobs that were created by the GEAR strategy were in the informal sectors. Although economic growth picked up during the early 2000s, most of the growth had been jobless growth, resulting in very little contribution to job creation.

After the failure of the GEAR strategy, Government was still faced with the challenge of offering South Africans in the labour pool, especially the poor, a safety net against involuntary unemployment and major contingencies, and of finding employment opportunities for the unemployed. After extensive campaigning in various rural and urban areas, and having won the 2004 election with a majority vote of nearly 70 per cent, it seemed that Government had finally grasped the degree of poverty and unemployment that prevailed in the country, together with the huge expectations of the voters for government to change their situation.

Therefore, much remains to be done. The GEAR strategy was considered to be in direct conflict with the objectives of the RDP strategy, since the reduction of poverty and income equality and economic growth is simply not enough to reduce the high levels of unemployment. To achieve the goals set out by these two strategies, South Africa needs a better formulated strategy that will result in economic growth and employment creation.

3.5.3. The Accelerated and Shared Growth Initiative (ASGISA)

In 2002, President Mbeki stated at the end of the Cabinet Lekgotla in July that the challenges that were facing government were not to change government policies, but to ensure that they were implemented effectively and accomplished the objectives set out in these policies. Therefore, the Accelerated and Shared Growth Initiative (ASGISA) was introduced and aims at improving policy implementation and economic growth. To do this, ASGISA deals with the following challenges: the lack of committed and skilled staff in the public sector, the lack of human resources to effectively implement policies, mismanagement of funds and corruption, insufficient financial resources for successful implementation of policies, lack of coordination between institutions and the limited new

investment opportunities, barriers to entry into local markets, and the limited competition among firms (Boshoff, 2005).

The main objective of ASGISA was to reduce poverty by 2010 and halve unemployment by 2014. To achieve these goals, government set a two-phase target. In the first phase, between 2005 and 2009, government sought an average annual growth rate of 4.5 per cent. In the second phase, between 2010 and 2014, the average annual growth rate was to increase to 6 per cent of GDP (Boshoff, 2005).

In addition to these growth rates, social objectives require government to create more opportunities for more labour-absorbing activities in the economy to increase employment opportunities. The benefits from increased growth then need to be shared in such a way that poverty can be addressed and possibly eliminated and indirectly reduce the widespread inequality in South Africa.

Sustainable growth at around 6 per cent requires that the binding constraints on growth in South Africa should be addressed. ASGISA identified the following six binding constraints on growth (The Presidency, 2006):

- **The relative volatility of the currency:** South Africa has made significant improvements in the administration of monetary and fiscal policy; however, the rand remains somewhat volatile. This discourages foreign investors from buying tradable goods and services outside the commodity sector.
- **The cost, efficiency and capacity of the national logistics system:** The prices of moving goods and services are often higher than it should be in South Africa, owing to backlogs in infrastructure and investments, and often to market structures that discourage competition.
- **Shortages of suitably skilled labour and the distortions of apartheid affecting low-skilled labour costs:** The uneven quality of education after apartheid has resulted in a lack of sufficient, skilled labourers among the workforce, resulting in slower growth. In addition, the price of labour has increased owing to the distance between work and home of many of the poor labourers.

- **Barriers to entry, limits to competition and limited investment opportunities:** The economy remains relatively concentrated, especially in sectors such as steel, iron, paper, chemicals and telecommunications, which are considered to be upstream production sectors. In some cases, downstream productions are affected negatively by market structures. These factors need to be counteracted by industrial policies and competition law.
- **Regulatory environment and the burden on small and medium businesses:** The small and medium business sector is known for its great contribution to GDP and employment. However, factors such as municipal regulation, administration of labour law and specific sectorial regulatory environments all hinder the development of these businesses.
- **Deficiencies in state organisation, capacity and leadership:** Government has many weaknesses in the way that it is organised in providing public services, in decisive leadership and effective policy development and implementation, which all constrain the country's growth potential.

Government realised that a shift in economic policy was not necessarily needed as much as identifying a set of initiatives was for achieving the objectives set out in these policies more effectively. Having recognised the above challenges, ASGISA identified six initiatives to help overcome these constraints and achieve the goals set out in the policy. These initiates include (The Presidency, 2006):

- **Infrastructure programmes:** Government has committed itself to increased public sector investment by further developing infrastructure, expand communication infrastructure and to upgrade and maintain public infrastructure.
- **Sector specific investment strategies:** Various sectors in the economy face different challenges and government has acknowledged that the various sectors require different solutions to overcome the challenges they face and therefore, government should prepare sector specific strategies.
- **Bridge the gap with the second economy:** The aim is to bridge the second economy and leverage the first economy. This will be done by promoting small businesses by increasing the level of public expenditure, and secondly, using the

above mentioned sector specific strategies to help overcome sector specific challenges.

- **Macroeconomic intervention:** This includes strategies to help reduce the volatility and overvaluation of the currency and to ensure that monetary and fiscal policy work effectively within an inflation-targeting regime to produce sustainable economic growth.
- **Joint Initiative on Priority Skills Acquisition (JIPSA):** This is a 3-year sister programme that addresses skill shortages. JIPSA and ASGISA both aim to identify skill shortages, while increasing the level of skills needed through the placement of professionals.
- **Public administration issues:** Implementing new policy interventions is costly. This could be avoided by diverting existing establishments into new responsibilities and functions.

As a result, ASGISA managed to increase the rate of investment by 5 per cent of GDP, together with an increase in government investment to over 10 per cent annually and an improvement in the spending levels of both government and consumers in 2006/2007 (The Presidency, 2006). However, while ASGISA had achieved a certain level of success, unemployment continued to grow while GDP growth declined. In the end, the future of the programme was uncertain as government made no official announcement regarding the fate of the ASGISA policy.

3.5.4. The Medium Term Strategic Framework (MTSF)

As the South African Government entered their fourth democratic term in 2009, every region in the world was being affected by the global economic crisis. Government knew that the crisis was likely to have a significant effect on the country's economic growth, while having negative implications for employment, investment, income and revenue. Government knew that one of the greatest threats of the crisis was that the burden would be placed onto the poor, deepening poverty and inequality in South Africa. To ensure that the country recovered quickly and is set on a more inclusive growth and

development path, the Medium Term Strategic Framework (MTSF) was implemented in 2009.

The MTSF identifies the development challenges that South Africa faces and defines the priorities of the South African Government in the electoral mandate period between 2009 and 2014. The MTSF builds on the successes of the previous fifteen years of democracy. It identifies the development challenges that South Africa faces and outlines the medium-term strategy for improvements in economic growth, employment and poverty elimination.

The MTSF is meant to guide planning and resource allocation across all government domains. This strategy takes into account how conditions, both locally and internationally, may change over time to help weigh trade-offs and making decisions.

The objectives identified in the MTSF overlap with those of the RDP, GEAR and ASGISA, where economic growth and development, the creation of decent work on a large scale, and the investment in quality education and skill-development are at the centre of the policy approach (The Presidency, 2009).

More specifically, ten priority areas were identified in the MTSF for the period of 2009–2014. The 10 strategic priorities are listed below (The Presidency, 2009).

- **Priority 1: Speeding up growth and create decent work opportunities:** Government's main objective is to respond effectively and promptly to ensure growth in decent employment opportunities, the reinforcement of income security and ensure that investment is sustained to build up economic capabilities and improve industrial competitiveness.
- **Priority 2: Programme to build economic and social infrastructure:** The main objective is to ensure sustained investment growth between 2009 and 2014 to reach the target of a fixed investment ratio of above 25 per cent of GDP. This investment programme is aimed at improving and expanding economic and social infrastructure to support economic activities, increase the quality of public services and pursuing maximum employment.

- **Priority 3: Rural development strategy linked to land reform and food security:** With 10 to 15 million people living areas of extreme poverty, the objective is to implement a strategy of rural development to improve the quality of life of rural households by enhancing agricultural production for more food security and exploiting the economic potential of each of these regions.
- **Priority 4: Strengthen the skills and human resource base:** Education has enjoyed the largest share of the national budget since 1994. However, progress has not been optimal and therefore, the objective is to focus on delivering quality outcomes by improving school management, learner outcomes, early childhood development (ECD) and developing high quality teaching professionals.
- **Priority 5: Improve the health profile of all South Africans:** The aim is to transform the public health system by implementing a National Health Insurance, increasing institution capacities and improve management of health services to help reduce the inequalities in the system and improve the quality of care.
- **Priority 6: Intensify the fight against crime and corruption:** The key focus remains to eliminate crimes against women and children, contact crime and organised crime, together with combatting corruption. The objective is to revamp the criminal justice system and the enhancement of citizen involvement.
- **Priority 7: Build sustainable and caring communities:** To strengthen human capabilities, promote social solidarity, shared values and overall equality, the MTSF aims to halve poverty and unemployment by 2014.
- **Priority 8: Pursuing African advancements and enhanced international cooperation:** Over the medium term it is important to ensure that the country's foreign relations contribute to economic growth and development domestically, within Africa and other developing countries. Key aspects to this priority include promoting regional integration (SADC), encouraging South–South relations and implementing NEPAD (New Partnership for Africa's Development).
- **Priority 9: Sustainable resource management and use:** The objective here is to pursue renewable energy alternatives and the promotion of energy efficiency in South Africa, by supporting sustainable food production and encouraging sustainable water usage.

- **Priority 10: Building a developmental state, improvement of public services and strengthening public institutions:** Transforming the system of governance has certain challenges: poor quality public services, weak planning and implementation across government, declining confidence and trust in public institutions and the capacity gaps in local government. The objective is to improve the capacity of the state to achieve growth and development.

The MTSF recognised the critical importance of changing the mind-set and behaviour of government and all its social partners to ensure that new heights were reached in terms of growing the economy, reducing unemployment, eliminating poverty and promoting greater social unity and equality (The Presidency, 2009).

3.5.5. New Growth Path and the Industrial Policy Action Plan

Since the first democratic election in 1994, the objective of the South African government has been to create a better life for all South African citizens. In principal this was to be achieved by increasing economic growth, reducing unemployment and ensure more equal distribution of income, which have been the driving forces behind the formulation of the RDP, GEAR, ASGISA and the MTSF policies (Van Aardt & Van Tonder, 2011).

However, results show that the implementation of these policies has achieved little success, since unemployment remains extremely high, poverty continues to be widespread and the inequality divide seems to be greater than ever. To once again try to overcome these structural challenges, Government implemented the New Growth Path (NGP) on 23 November 2010, hoping to achieve these goals.

The aim of the NGP is to create 5 million new job opportunities by 2020, by increasing economic growth to a sustainable rate of between 6 per cent and 7 per cent, annually. In the event that this might happen, unemployment would be reduced to 15 per cent (NGP, 2010). The main objective is to address unemployment, poverty and inequality by creating new opportunities for employment in South Africa's private sector, placing job creation at the centre of the policy.

The NGP has identified at least six key sectors that show promise and potential for unlocking employment opportunities. These sectors are termed as “job drivers” and include (Van Aardt & Van Tonder, 2011):

- infrastructure development,
- manufacturing sectors (which are included in IPAP 2),
- mining value chain,
- agriculture,
- tourism and high level services, and
- the green economy.

The job drivers that were identified in the NGP are those targeting more labour-absorbing activities in the main economic sectors, such as the agriculture, mining and manufacturing industries. These job drivers also make substantial public investments in infrastructure to directly contribute to job creation in construction, maintenance and production, and indirectly by improving productivity across the economy.

Each of the job drivers has a set target for job creation and is summarised in the table below (NGP, 2010):

Table 3.1: Job drivers

Job Driver 1: Infrastructure for employment and development		
	Employment goal	**Where the jobs are**
Infrastructure	250 000 Job opportunities in transport, water, energy, communication and housing infrastructure through 2015	Public works programmes, maintenance, manufacturing of inputs and government housing projects in rural areas
Job Driver 2: Improving job creation in identified economic sectors		
	Employment goal	**Where the jobs are**
Agricultural value chain	145 000 Job opportunities by 2020 in agro-processing	Exports of wine and fruits and in smallholder schemes in industrial products
Mining value chain	140 000 Additional direct job opportunities by 2020 and 200 000 by 2030	Enhanced platinum and coal exports and manufacturing of metal base products

Table 3.1: Continued

Manufacturing	350 000 Job opportunities by 2020. (Also projected in IPAP 2)	Identified and discussed in IPAP 2
Tourism and high level services	275 000 Direct job opportunities by 2020	225 000 Jobs in tourism by 2015 and 50 000 jobs in business services by 2020
Job Driver 3: Potential of new economies		
	Employment goal	**Where the jobs are**
The green economy	300 000 Additional direct job opportunities by 2020 and 400 000 by 2030	In the short to medium term: Construction and in the medium to long term: energy construction and input manufacturing
The knowledge economy	100 000 Job opportunities by 2020	Higher education, healthcare, pharmaceuticals, biotechnologies and green technologies.
The green economy	300 000 Additional direct job opportunities by 2020 and 400 000 by 2030	In the short to medium term: Construction and in the medium to long term: energy construction and input manufacturing
The knowledge economy	100 000 Job opportunities by 2020	Higher education, healthcare, pharmaceuticals, biotechnologies and green technologies.
Job Driver 4: Investing in social capital		
	Employment goal	**Where the jobs are**
The social economy	260 000 Job opportunities by 2020	Co-ops (producer, consumer and services), Community and social initiatives and social investment vehicles (community, union and religious)
The public sector	100 000 Job opportunities by 2020	Expanded Public Works Programme (EPWP) and Community Works Programme (CWP) in health, education, public services and social services

Table 3.1: Continued

Job Driver 5: Spatial development		
	Employment goal	**Where the jobs are**
Rural development	Improvement in livelihoods for 500 000 households	Construction, public services, tourism and small scale agriculture
African regional development	60 000 Additional direct jobs by 2015 and 150 000 by 2020	Integrated supply chains, finance, exports, input manufacturing and transport

Source: NGP (2010)

To reach these targets, the NGP has a series of both microeconomic and macroeconomic objectives in place, including:

- Identify better export opportunities by developing more focused trade policies.
- Improve education, skills and training development, especially in rural areas.
- Develop rural areas by implementing a more effective rural development policy.
- Increase competition in the marketplace by implementing competition policy.
- Promote the development of small businesses and entrepreneurs through a consolidated funding agency.
- Extend black economic empowerment (BEE).

However, research has found that the economic conditions created by government do not favour the achievements of the stated objectives (Van Aardt & Van Tonder, 2011). One of the biggest concerns is that, for higher economic growth to translate into increased employment opportunities, economic growth should be of a labour-absorbing nature. Analyses have revealed that there is a weak relationship between gross value added (GVA) and employment creation in most sectors of the economy, implying that there are further factors other than economic growth that have a major impact on employment and unemployment in South Africa (Van Aardt & Van Tonder, 2011).

One of the reasons for the weak translation of economic growth into job creation might be because employers have developed a preference for using capital over labour in

production. Therefore, economic growth of 7 per cent would not automatically translate into the creation of 5 million new job opportunities, and if the preference for capital over labour persists, economic growth of more than 10 per cent might be necessary to create the same amount of jobs (Zarenda, 2013b).

The general assessment of the NGP has brought to light that it is not a breakthrough policy document for economic growth and employment. Firstly, the proposed policy instruments in the NGP are no different from those introduced in GEAR (NGP, 2010:16). Secondly, the NGP policy has a very weak approach to drive the new growth and has an inadequate assessment of the socio-economic challenges that the NGP needs to resolve (NGP: 2010:2). Thirdly, the NGP has shown no breakthrough in monetary or fiscal policy since the release of GEAR (NGP: 2010:16) and is considered overall to be a weak and inadequate microeconomic policy package that is no different from ASGISA (NGP: 2010:17-23). Finally, it is viewed by many as a weak analytical framework, making it vulnerable to criticism from neo-liberal ideology (NGP: 2010:6-8).

The NGP strategy currently falls short in taking South Africa forward. The above-mentioned are only a few of the inconsistencies and inadequacies found in the NGP policy. The NGP does not clearly indicate that South Africa is in a socio-economic crisis, and this narrows the focus of the strategy and neglects the social aspects of South Africa's problems (Zarenda, 2013b).

However, The NGP does indicate that the largest share of future employment growth will take place in South Africa's productive sectors and not in the service sector. Therefore, IPAP 2 is considered as being a critical policy for the success of the NGP. The IPAP is considered to be a key pillar of the programmatic perspectives set out in a series of 'packages' and 'drivers' contained in the NGP (Zarenda, 2013a).

The first iteration of the IPAP was introduced in 2007, and during April 2013 the Department of Trade and Industry (DTI) released the fifth iteration of the IPAP (DTI, 2013). The fifth publication is referred to as an opportunity to reflect on the key challenges, constraints and achievements encountered since the first publication in 2007.

The key objective of the IPAP is to achieve structural change by encouraging growth and development, together with increased competitiveness of the South African manufacturing sector. South Africa's economic growth has mostly been driven by consumption sectors such as transport, real estate, finance and insurance, while key productive sectors like manufacturing, mining and agriculture have been contributing far less than they are potentially capable of doing (DTI, 2013). This structural change has played an important role in the high structural unemployment rates in South Africa since 1994. Therefore, to address the high rates of unemployment, the structure of the economy needs to be addressed.

According to the DTI (2013), the manufacturing sector has the ability to transform the economy and help to achieve key objectives, such as job creation, expanding labour-absorbing production services, contributing to industrial development, both locally and internationally, increasing diversification beyond the exports of traditional raw materials, and increasing access to previously disadvantaged people and regions led by manufacturing.

A thriving manufacturing sector does not only have great employment potential for semi-skilled and unskilled individuals, but is also central to the development of a strong export strategy, creates demand for a large range of upstream services and inputs, and stimulates additional downstream activity in maintenance, retail and services (DTI, 2013).

Just before the release of the fifth iteration of the IPAP in 2013, the following statistics in regard to the manufacturing sector were recorded: the automotive industry contributed a substantial increase in exports, at an estimated 16.7 per cent per annum (SARS, 2013). The textile and footwear industries also showed positive growth in exports, with 9.7 per cent and 35 per cent, respectively. Overall, the physical volume of manufacturing production for 2012 showed that there was no growth in the clothing, textile and leather sectors, while the vehicle and automotive sector showed growth of 2.3 per cent (SSA, 2013a).

Furthermore, the most recent Quarterly Labour Force Survey (SSA, 2013b) has indicated that, on a year-to-year basis, employment in the manufacturing sector has

decreased by 3.3 per cent, suggesting that the emphasis on job creation in the IPAP policy has thus far had little effect on employment.

These statistics could be perceived as indicating the lack of sustained success from the IPAP interventions since 2008, arguing that not enough has been achieved since the first IPAP was launched in 2007. The current iteration of IPAP has been more successful in identifying new development initiatives and opportunities that affect the country's regional and international trading relationships. These are broadly divided into transversal and sectoral interventions (DTI, 2013).

Transversal interventions do not focus on one specific sector, these refer to general interventions such as public procurement, skill development, trade policy, financing and regional integration. Sectoral interventions, on the other hand, are more specific and are divided into three clusters. Cluster 1 includes sectors that have been supported since 2007, including clothing, textiles, footwear, automotive products, pharmaceuticals and creative industries. Cluster 2 incorporates new areas of focus, such as energy saving industries, upstream oil and gas services and downstream mineral beneficiation. Finally, cluster 3 involves the development of long-term advanced capabilities in areas such as aerospace and nuclear fields (DTI, 2013).

The IPAP has certainly achieved a great deal of its objectives and in a broad conclusion, it can be argued that industrial policy can in fact succeed. However, one needs to subject the quantifications of these achievements to a more critical analysis to determine whether the objectives of industrial policy are in fact being met.

Table 3.2 below is a summary of the objectives, outcomes and challenges of each of the economic policies implemented since 1994.

Table 3.2: Summary of economic policies: 1994-2014

Policies	• Objectives	• Programmes	• Outcomes	• Challenges
RDP **1994**	• Create a strong and balanced economy; • Remove racial biases to address poverty and socio-economic inequalities; • Develop South Africa's human resource capacity. Satisfy the basic needs of all South Africans	• Focus on training, education and youth development to develop human resources; • Create new job opportunities to help build the economy and the nation; Implement the objectives of the RDP at all levels of the economy.	• The RDP objectives were too broadly formulated; • No specific numerical goals were specified in terms of growth and employment; The RDP required substantial resources and policy initiatives that were not yet in place	• Unsuccessful methods used for policy coordination and implementation; • Lack of sufficiently skilled managers and workers; Insufficient resources for successful implementation and job creation.
GEAR **1996**	• Create 400 000 new jobs through redistribution and labour market reforms; • Achieve 6 % growth by the year 2000; • Lower barriers to trade, lower inflation and reduce fiscal deficits to below 3 % of GDP.	• Achieving higher economic growth that would be led by private sector investments that would in turn create new job opportunities; • Containment of government debt service obligations, reductions in import tariffs and the introduction of tax incentives to encourage investments.	• Between 1996 and 2001 the economy grew by 2.7 % instead of the proposed 6 %; • Employment decreased instead of growing by 3 %; • More than 1 million jobs were lost instead of creating 1.3 million; • Government investment grew by 1.8 % while the aim was 7.1 %.	• Promoting the expansion of the economy to result in job creation; • Ensuring that the redistributive effect of income transfer is large enough to make a difference in the lives of those facing growing unemployment and poverty.
ASGISA **2006**	• Reduce poverty by 2010 and halve unemployment by 2014; • Improve efficiency of policy implementation and economic growth.	• Expand and develop infrastructure development programmes; • Joint initiative on Priority Skill Acquisition (JIPSA) to identify skill shortages , while increasing the skill level; • Introduce macroeconomic interventions to ensure monetary and fiscal policy operate effectively	• The growth rate averaged at 5 % per annum; • The investment rate increased from 15 % of GDP to over 20 %; • National departments decreased their budgeted spending , • Some growth in employment, even though unemployment remains high.	• No word came from government regarding the future of ASGISA.
MTSF **2009**	• Halve unemployment and poverty by 2014; • Invest in quality education and skill-development; • Create jobs on a large scale; • Reduce inequality; • Improve the health profile of all citizens.	• Build economic and social infrastructure; • Rural development linked to land reform and food security; • Intensify the fight against crime and corruption • Strengthening public services.	• Established some institutional mechanisms for skill planning and • Increased access to high-level learning programmes.	• An uncompetitive currency; • Balance of trade deficits; • The inadequacy of the productive sectors and • Low domestic savings.

Table 3.2: Continued

NGP 2010	• Create 5 million new job opportunities by 2020; • Increase economic growth between 6 and 7 per annum; • Incorporate IPAP as an essential pillar in the success of the NGP.	• The NGP has identified 6 key sectors, termed as 'job drivers' to help create employment; • These sectors include: infrastructure development, manufacturing, mining, agriculture, tourism and the green economy	• To ensure successful outcomes government should provide adequate infrastructure and social services; • Diversify the production structure to maximise job creation and • Improve skill development.	• Targeting more labour absorbing activities; • Developing a preference for using capital over labour in production; • Finding a way to translate economic growth into increased employment. .

Source: DoE (2012b)

3.6. Summary

The South African government's commitment to the growth, development and reconstruction of the South African economy has been clearly stated in the various economic policy documents since 1994. Since South Africa's transition to democracy, the country has experienced the restructuring of policies to overcome the legacy of apartheid.

Thus, the transition to a democracy in 1994 posed difficult development policy challenges, and the South African government's successes in overcoming these challenges should be noted. Some of these include the increase in job creation in the public service sector, the expansion of business services in the private sector and an increase in employment in the transport and communication sectors. The EPWP launched in 2004 has also contributed to an increase in economic growth, coupled with improved education and skills development. Ongoing efforts by government have also ensured that higher levels of education can contribute significantly to the changes in the structure of employment.

However, based on the RDP, GEAR, ASGISA, MTSF, NGP, together with the IPAP policy, economic performance has been disappointing. GDP growth has remained low, and unemployment continues to increase, while key objectives of improved service

delivery and poverty reduction remain unattained. South Africa's transition to democracy has opened the economy to global competition, becoming more open, productive and outward orientated over the past two decades. As a result, employers have developed a preference for using capital over labour in production. According to Hayter *et al.* (1999), trade liberalisation and globalisation has shifted production away from labour-intensive sectors towards more capital-intensive ones. The study also points out that labour-intensive sectors in South Africa have become more skill-intensive and the shortage of educated and trained labourers undermines the growth of the labour-intensive sectors.

In the end, the low levels of economic growth and investment were insufficient to contribute to the reduction in unemployment, and policy achieved very little success in distributing wealth and equality. Some of the policy programmes implemented since 1994 were successful in achieving macroeconomic objectives, but fell short with regard to the social challenges of the country, most notably job creation, poverty reduction and education.

Although a great deal has been done to address the struggles of apartheid, the need to address the fundamental problems and issues created during the pre-democratic era still remains critical. The most worrying aspect of South Africa's disappointing economic performance over the last two decades is unemployment, and it poses a significant threat to the sustainability and stability of the South African democracy. South Africa's unemployment is closely connected to the economy's inability to generate much growth momentum in the last 20 years. High unemployment and low growth are both ultimately responsible for the decline in the non-mineral tradable sector and the weak export-orientated manufacturing sector. This has prevented South Africa from creating new job opportunities, especially the demand for low-skilled labourers.

The next chapter applies the concept of historical CGE analysis to model the change in the labour-to-capital ratio in order to determine whether there has been a major shift away (or vice versa) from labour to capital across the different sectors in the South African economy. This will help to determine whether the focus of these different national development/economic policies have in fact been able to address the issue of unemployment.

Chapter 4: Historical CGE Analysis of the South African Economy from 1994 to 2014

4.1. Introduction

The details which indicate the reasons that give an understanding of past successes and failures, and help identify trends that are likely to persist, have always been sought-after as information. There are many reasons why analysts investigate past economic outcomes – the main reason being to make better-informed decisions going forward. In this pursuit, computable general equilibrium (CGE) modelling, and more specifically, evidence- or history-based CGE modelling, has become a popular approach for estimating technical change, levels of productivity and preferences.

South Africa's unemployment problems have been well documented in the literature. This chapter seeks to quantify some of the factors underlying the country's struggles in this regard using historical CGE simulations. The primary aim is to provide some initial estimates for changes across various economic policies over the past two decades of democracy in South Africa, between 1995 and 2013, using the historical CGE modelling methodology introduced by Dixon and Rimmer (2002). The analysis focuses on the period 1995 to 2013 due to data availability. Changes in the capital and labour markets across all sectors of the economy will be used to determine whether there has been a shift away from the use of labour. The model used in this study is a dynamic CGE model of the South African economy.

The rest of the chapter describes the dynamic CGE model and its characteristics in broad detail to explain how CGE modelling can deliver policy-relevant findings across diverse policy issues. The chapter also sets out to summarise the movements and changes in capital and labour between 1995 and 2013 and indicate how to find the appropriate model closure for the historical analysis. Finally, it presents the findings and results from the analysis.

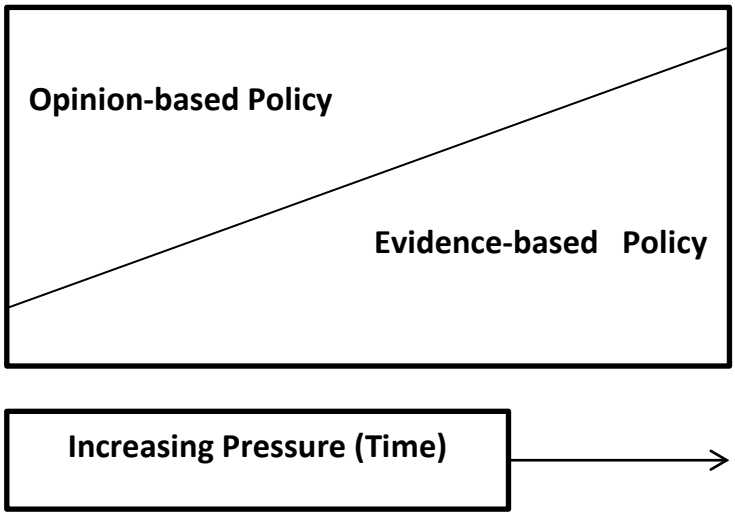
4.2. Evidence- or history-based economic policy analysis

The pursuit of evidence- or history-based economic policy analysis is based on the premise that economic policy should be better informed by available evidence and rational analysis. This is mostly because research has found that policy that is based on evidence is seen to produce better outcomes (Boratyriski, 2012) Therefore, evidence-based analysis is considered as being an important analytical tool in addressing the current challenges in policy formulation. In recent years, the need to address these challenges has intensified as technological change and the forces of globalisation have had diverse economic impacts on the economy (Bohlmann & Breitenbach, 2013). Therefore, evidence or history-based analysis can help reveal the ramifications of economic policies and events across South Africa over the past two decades.

The idea of using evidence to help inform policy is not a new concept. It has been noted that government should produce policies that are set on the evidence that addresses the causes and not the symptoms. According to Davies (2004), evidence-based analysis is an approach that helps in making well-informed decisions about policies by presenting and using the best available evidence from research at the centre of policy development and implementation. Therefore, rather than aiming to affect the end goal of policy initiatives, evidence-based policy analysis informs the process by which economic policies are formulated to ensure a more systematic, rational and accurate approach.

Davies (2004) calls it "*the integration of experience, judgement and expertise with the best available evidence from systematic research*". He also found that evidence-based analysis is a shift away from opinion-based decision making, towards high quality and reliable evidence to help inform policy making, as is illustrated in Figure 4.1 below.

Figure 4.1: The dynamics of evidence-based policy



Source: Adapted from Gray (1997)

Shaxson (2005) argues that evidence-based analysis is needed to:

- Understand how the policy environment is changing;
- Assess the effects of policy changes to effectively choose between different policy options; and
- Indicate the channels between strategic direction, the intended outcome and the final policy objectives.

The literature also points out that evidence-based policy analysis in developing countries has the potential to have an even greater impact on policy outcomes, since evidence-based analysis seems to be less well established in developing countries where policies are often not based on evidence (Devarajan & Robinson, 2013). The reason is that many developing countries were initially engaged in central planning and CGE models were seen as appropriate and effective instruments to evaluate the consistency of the economic policy with the central plan's objectives (Devarajan & Robinson, 2013). As developing countries started to move towards more market-based economies, they began to abandon central planning, making CGE modelling even more appropriate since the operation of market economies is stimulated by the use of CGE (Devarajan & Robinson, 2013).

Therefore, CGE modelling is considered as being one of the most rigorous quantitative methods to evaluate the impact of economic and policy shocks (Devarajan & Robinson, 2013). It uses actual economic data to estimate how an economy might react to any changes in policy or any other external factors. Using a CGE model will help to provide projections of the impact that changes in economic policy might have on a wide variety of economic variables. CGE modelling can therefore be seen as an analytical tool for providing evidence by performing numerical analysis by combing data and theory to accurately inform the policy makers and the policy making process.

Before explaining in more detail how CGE models are used for the purpose of this dissertation, the next section will give a brief overview of the distinguishing characteristics of CGE models and the elements required for these models to capture the essential features of economic policies.

4.3. The characteristics of CGE models

Policy studies frequently use CGE models to analyse the effects of change in policy. These models are multi-sectoral and capture the interdependence between different sectors, together with the interdependence between other economic agents, such as households and domestic institutions (Giesecke & Madden, 2014).

A start is to consider the capabilities of CGE models that contain dynamic features required for historical policy modelling. Historical modelling can be a valuable tool in determining the drivers of past economic performances and failures, a topic that often comes forward in policy debates, but which lack good evidence to support the discussion.

In comparison with other available analysing techniques, CGE analysis is considered to be one of the best techniques since it captures a wider range of economic impacts derived from shocks or the implementation of specific policy reforms (Boratyriski, 2012).

Although the structure of each individual CGE model differs considerably, there are nevertheless a number of defining characteristics of CGE models. Various economic agents are specified and used in the CGE models, but there are five broad types of

economic agents used in these models: households, producers, investors, governments and foreigners (Devarajan and Robinson, 2013). Generally, households and producers are assumed to be constrained optimisers. The reason for this is that producers typically minimise any costs related to their industry's production function (which contains imperfect substitution possibilities), increasing the demand functions for inputs into the current production. Households, on the other hand, choose commodities that will maximise utility, subject to their budget constraint. Investors are assumed to determine the demand for commodities for capital formation, allocating investments across different industries to minimise their costs in assembling capital units, while maximising their rates of return. The Government's consumption and details of taxation are also recognised in the model. In general, the supply curve for commodities is formed based on the assumption of no pure profits in production or distribution, while the import supply curves, on the other hand, are assumed to be highly elastic. In general, prices are determined by factor markets and market-clearing assumptions in commodity markets. Most CGE models will also contain equations to compute aggregate variables. A CGE model also requires input–output coefficients, other social accounting coefficients, and various elasticity parameters (Devarajan & Robinson, 2013).

A CGE model can be useful, simply because it can help the analyst to identify general equilibrium effects of changes in exogenous conditions that were not initially obvious (Boratyriski, 2012). Even when key variables or numerical values of the variables in the model are uncertain, analysts will still be able to identify general equilibrium effects and be able to conclude whether the effects in question are 'big' or 'small'. This also helps analysts to gain deeper insight into the interdependencies in the economy.

These are only some broad defining features and characteristics of CGE models. Within these features, CGE models can vary in the type of production structure, household preferences, the competitiveness of markets, the time, fiscal details and the treatment of space. Using CGE modelling for the purpose of historical policy analysis will be discussed in more detail in the following section.

4.4. Using CGE for historical policy analysis

The primary role of historical simulations is to identify the unobservable structural change characteristics from historical data (Boratyriski, 2012). These simulations are facilitated by a historical closure. Many of the naturally endogenous variables on which historical data is available are exogenised, which include a number of industry and macro variables. There are different variants of historical closures based on the choice of exogenised variables, data availability and a few assumptions.

In essence, the main purpose of CGE models is to project the impact of economic policy changes onto various economic variables. In this case, it will be used to determine the impact of economic policy changes on unemployment, and more specifically, on the labour/capital ratio. To accomplish this and generate the results needed, a baseline scenario incorporating available historical data is first simulated. The aim with the baseline simulation is to produce a picture of the historic evolution of the economy (excluding the impact of the policies under consideration). Then, a scenario incorporating the relevant economic policy shocks is run and compared with the baseline scenario, with the deviations being reported as a percentage change. The results of any simulation will depend on the assumptions and the economic environment under which it is run. This is reflected by the choice of model closure where an appropriate combination of exogenous variables for each type of simulation is chosen. The model closure used in this study largely follows that described in Dixon and Rimmer (2002), which will be explained in section 4.6.

Therefore, for the purpose of this dissertation, history-based evidence will be used in a dynamic CGE analysis of the South African country from 1993 to 2013 to determine from the historical evidence how effective South Africa's economic policies have been in addressing the problem of high unemployment. The next section will take a closer look at CGE models and how it will be applied to this study.

4.5. The CGE model

The CGE model used in this dissertation is known as the PEKGEM[3], a smaller, simplified version of the Industrial Development Corporation General Equilibrium Model (IDCGEM). The IDCGEM is a CGE model of the South African economy based on the well-documented Australian ORANI-F model (Horridge, Parmenter & Pearson, 1993) and was developed in the early 1990s by the Industrial Development Corporation (IDC). It is a model of the economy in a single period, designed for comparative analysis to determine the effect of policy changes on the economy in that period (Naudé & Coetzee, 2004). Whereas the IDCGEM contains 108 single product industries, 2 margins commodities, 65 categories of labour, (4 races plus migrant workers) and 24 households (a races included by six income levels) (Naudé & Coetzee, 2004), the PEKGEM has only 36 sectors and omits the regional dimension. It is important to note that the model is directed towards long-term questions and issues, and given this limitation it is somewhat contradictory that the structure does not include a more careful treatment of technological change.

Since the focus of the modelling is on labour-related issues, here are some comments related to modelling labour in the PEKGEM, as discussed in the study by Naudé and Coetzee (2004). Firstly, the PEKGEM decentralises the demand for labour according to race and occupation, which is in contrast to the demand for other primary factor inputs. The occupation-specific demand for labour is a function of the elasticity of substitution and the relative prices of occupational-specific labour. If there is a change in the relative wages of an occupation, substitution between the different occupations will take place. Therefore, in order for industries to minimise their total labour cost, they choose different combinations of occupations in their labour force. Secondly, the PEKGEM does not specify a labour supply function. This implies that the supply side cannot place any upward pressure in wages during unemployment (the absence of labour shortages). Thirdly, wages are assumed to be flexible in the PEKGEM and will adjust according to the closure related to the primary factor market. By adjusting the real wages exogenously, movements in the real wage rate can be incorporated. Finally, the results

[3] The model uses a 1995 Social Accounting Matrix prepared by WEFA SA (Pty) Ltd. (now Global Insight Southern Africa) as database.

from the simulation are influenced by the manner in which the labour market specification is closed.

4.6. The History-based closure and observed movements from 1995 to 2013

To conduct the analysis of the South African economy over the period 1995–2013, a historical closure is applied to the PEKGEM model. Included among the variables of the historical closure are observables and assignables. Assignable variables are naturally exogenous and can be assigned a value without contradicting anything that was assumed or observed in the historical period. What makes the historical closure somewhat different from other closures, is that variables that would be considered naturally endogenous in policy modelling are set exogenously in their historically observed values. Therefore, various naturally exogenous variables must be allowed to move endogenously for the model to maintain its compatibility with the given parameter estimates and the observed values over the historical period (Bohlmann and Breitenbach, 2013).

The study uses a historical closure to quantify the effects of changes in the economy between 1995 and 2013. The historical closure includes exogenous variables, chosen so observations on movements in employment, investment, government spending, capital stocks, imports, exports and many other variables that are introduced to the model as shocks. The closure includes an input–output table that incorporates available statistics from 1995 to 2013. The closure is concerned with how change in policy caused change in South Africa's unemployment between 1995 and 2013. The effect of change in the policies on unemployment is calculated by comparing the path of the policy simulation with the path in the baseline simulation.

4.7. Observed movements from 1995-2013

Table 4.1 below shows the variables that were set as exogenous, indicating their observed annual movements based on available historical data between 1995 and

2013. Table 4.2 below shows the same exogenous variables, represented as cumulative percentage changes away from the 1995 initial solution.

The literature has clearly pointed out that South Africa has faced a severe problem of persistent unemployment since 1994. This has resulted not only from slow growth, but also from the pattern of South Africa's growth over the past 20 years. Putting the 2008/2009 recession aside, there have been significant improvements in South Africa's growth performance, and some job opportunities have been created. However, this has been achieved at a very slow pace, making it difficult to argue that there has been a structural shift towards more labour-absorbing job creation. All the major national economic policy initiatives since 1994 have emphasised the problem of unemployment and slow growth; however, little success has been achieved. This can be seen in the endogenous macro variables in Table 4.1 below. What is striking at first glance is the sharp decline in real GDP growth, the widening of the of the trade deficit, despite the weakening of the rand, and finally, the increase in the use of capital relative to labour.

Apart from the main macro variables that were chosen, Tables 4.1 and 4.2 also illustrate selected industry variables in the electricity and gold sector. Both these industries are of great importance for South Africa's economy and by combining available output and price data for these sectors, endogenously estimated shifts in demand and productivity can be estimated. What is noticeable about these industries is the increased investment expenditure and rising prices of electricity. For the gold sector, it is the increase in the gold price, while the levels of production are falling significantly.

Table 4.1: Observed annual percentage change to selected exogenous variables: 1995-2013

Endogenised macro variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Real GDP (x0gdpexp)	3.1	4.3	2.6	0.5	2.4	4.2	2.7	3.7	2.9	4.6	5.3	5.6	5.5	3.6	-1.5	2.9	3.1	2.4	2.0
Consumption (x3tot)	5.9	4.5	3.3	1.7	1.7	4.1	3.5	3.2	2.8	6.2	6.1	8.8	5.5	2.2	-1.6	3.7	5.0	3.3	2.3
Investment (x2tot_i)	10.7	9.0	5.7	4.8	-7.6	3.9	2.8	3.5	10.2	12.9	11.0	12.1	14.0	14.1	-3.2	1.6	4.4	6.3	5.5
Government expenditure (x5tot)	-6.0	3.8	2.1	-2.2	0.4	2.9	3.1	4.6	5.7	5.2	5.1	4.9	3.9	4.5	4.6	4.8	4.5	3.8	3.3
Imports (x0cif_c)	16.8	8.7	5.4	2.0	-8.4	5.3	0.2	5.3	8.1	15.5	10.9	18.3	9.0	1.5	-17.4	9.6	9.7	7.2	5.0
Exports (x4tot)	10.9	7.2	5.3	3.2	1.3	8.3	2.4	1.0	0.1	2.8	8.6	7.5	6.6	1.8	-19.5	4.5	5.9	1.1	3.7
Govt/consumption ratio (f5tot2)	-11.3	-0.6	-1.1	-3.9	-1.3	-1.2	-0.4	1.4	2.7	-0.9	-0.9	-3.6	-1.5	2.2	6.3	1.1	-0.5	0.5	1.0
Consumer price index (p3tot_h)	8.7	7.4	8.6	6.9	5.2	5.3	5.7	9.5	5.7	-0.7	2.1	3.2	6.1	9.9	7.1	4.3	5.0	5.7	5.8
Real wages (w1lab_io)	2.4	1.7	1.2	2.2	2.4	1.8	0.2	0.1	3.7	4.0	2.2	1.0	1.0	2.5	2.5	3.0	1.0	1.5	1.5
Terms of trade (p0toft)	-0.8	7.8	-0.7	0.6	-2.6	-2.8	2.1	1.6	5.1	2.5	2.6	7.0	2.0	-	8.0	7.2	2.3	0.5	0.5
Nominal exchange rate (phi)	-7.4	-11.4	0.2	-12.9	-10.9	-5.9	-15.0	-21.7	25.1	9.1	0.2	-5.9	-0.5	-6.0	5.0	1.0	-3.0	-3.5	-3.5
Labour (employ_io)	3.8	3.7	3.9	3.8	3.9	3.8	3.1	2.1	-1.8	-2.1	4.2	3.0	0.4	2.0	-3.0	-1.5	1.5	0.5	0.5
Capital stock (x1cap)	1.0	1.2	1.3	1.3	0.6	0.6	0.6	0.6	1.1	1.6	2.1	2.7	1.7	2.9	4.0	3.5	3.0	3.1	3.4
Endogenised industry variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Gold price (p4)	0.0	0.9	-14.6	-11.2	-5.2	0.1	-2.9	14.4	17.2	12.6	8.7	35.9	31.0	4.0	25.0	30.5	7.5	8.5	-15.0
Gold production (x4)	-9.7	-4.9	-1.5	-5.2	-3.0	-4.5	-8.3	0.9	-6.3	-9.7	-12.6	-7.7	-5.5	-15.0	-6.0	-4.0	-4.0	-10.0	-5.0
Electricity price (p0)	4.0	4.0	5.0	5.0	4.5	5.5	5.2	6.2	8.4	2.5	4.1	5.1	5.1	27.5	31.3	24.8	25.8	16.0	8.0
Electricity investment (x2tot)	-1.1	-0.1	-0.1	-1.5	-2.2	-2.7	-2.4	-1.5	0.3	1.4	2.2	2.3	15.0	14.0	13.0	12.0	10.0	9.0	8.5
Electricity output (x1tot)	-0.4	13.9	4.1	-3.4	-2.6	2.8	-6.1	4.8	12.2	5.0	-1.4	2.9	4.0	-1.0	-2.0	4.0	2.0	2.0	4.0

Source: SARB, StatsSA and PEKGEM

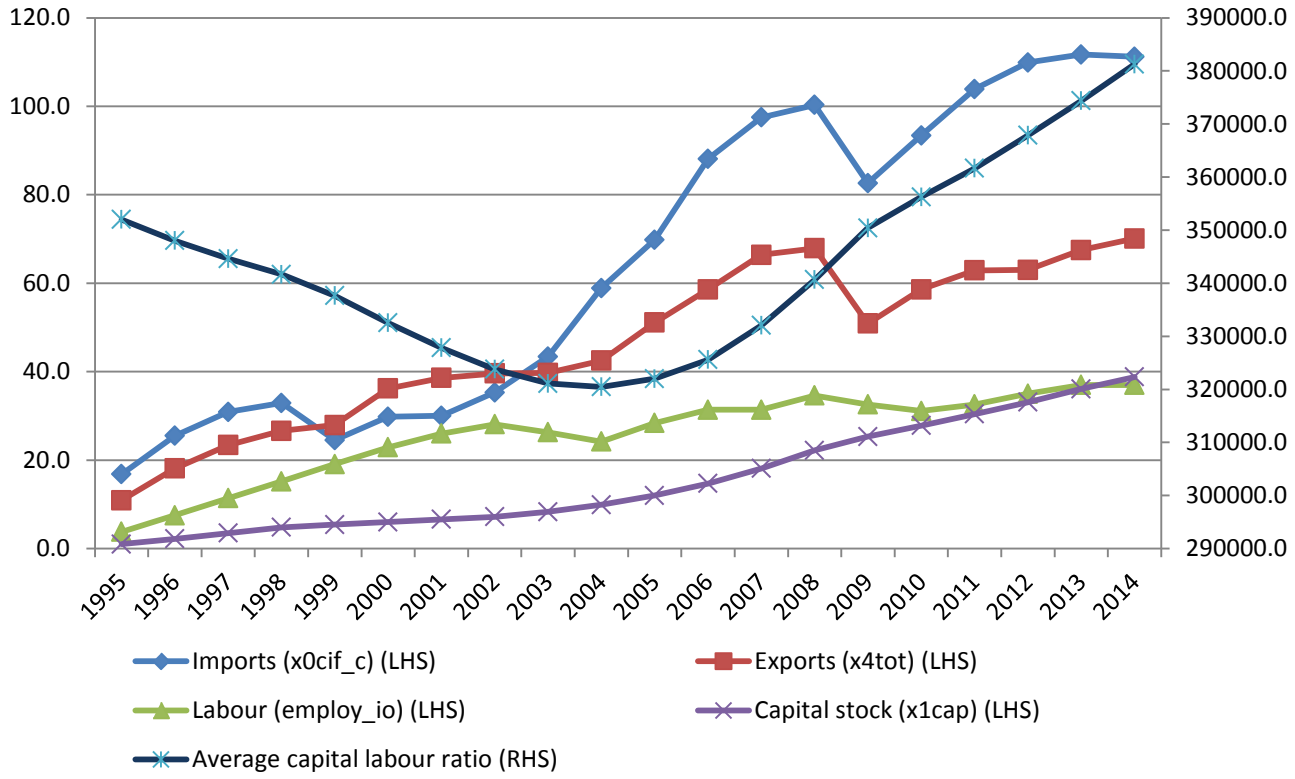
Table 4.2: Observed cumulative percentage change to selected exogenous variables: 1995-2013

Endogenised macro variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Real GDP (x0gdpexp)	3.1	7.4	10	10.5	12.9	17.1	19.8	23.5	26.4	31	36.6	41.9	47.4	51.0	49.5	52.4	55.5	57.9	59.9
Consumption (x3tot)	5.9	10.4	13.7	15.4	17.1	21.2	24.7	27.9	30.7	36.9	43	51.8	57.3	59.5	56.9	57.9	61.6	66.6	69.9
Investment (x2tot_i)	10.7	19.7	25.4	30.2	22.6	26.5	29.3	32.8	43	55.9	66.9	79.0	93.0	107.1	103.9	102.3	106.7	113.0	118.5
Government expenditure (x5tot)	-6	-2.2	-0.1	-2.3	-1.9	1	4.1	8.7	14.4	19.6	24.7	29.6	33.5	38.0	42.6	47.4	51.9	55.7	59
Imports (x0cif_c)	16.8	25.5	30.9	32.9	24.5	29.8	30	35.3	43.4	58.9	69.8	88.1	97.1	98.6	81.2	90.8	100.5	107.7	112.7
Exports (x4tot)	10.9	18.1	23.4	26.6	27.9	36.2	38.6	39.6	39.7	42.5	51.1	58.6	65.2	67.0	47.5	52.0	57.9	59.0	62.7
Govt/consumption ratio (f5tot)	11.3	10.7	9.6	5.7	4.4	3.2	2.8	4.2	6.9	6.0	5.1	1.6	0.1	2.3	8.6	9.7	9.2	9.7	10.7
Consumer price index (p3tot_h)	8.7	16.1	24.7	31.6	36.6	41.6	47.3	56.3	62	61.3	63.4	66.6	72.7	82.6	89.7	94.0	99.0	104.7	110.5
Real wages (w1lab_io)	2.4	4.1	5.3	7.5	9.9	11.7	11.9	12.0	12.1	15.8	19.8	22.0	23.0	24.0	26.5	29.0	32.0	33.0	34.5
Terms of trade (p0toft)	-0.8	7	6.3	6.9	4.3	1.5	3.6	5.2	10.3	12.8	15.4	22.4	24.4	-	32.4	39.6	41.9	42.4	42.9
Nominal exchange rate (phi)	-7.4	-18.8	-18.6	-31.5	-42.4	-48.3	-63.3	-85.0	-59.9	-50.8	-50.6	-56.5	-57	-63	-58	-57	-60	-63.5	-67.0
Labour (employ_io)	3.8	7.5	11.4	15.2	19.1	22.9	26.0	28.1	26.3	24.2	28.4	31.4	31.8	33.8	30.8	29.3	30.8	31.3	31.8
Capital stock (x1cap)	1	2.2	3.5	4.8	5.4	6	6.6	7.2	8.3	9.9	12	14.7	16.4	19.3	23.3	26.3	29.8	32.9	36.3
Endogenised industry variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Gold price (p4)	0	0.9	15.5	26.7	21.5	21.4	18.5	32.9	50.1	62.7	71.4	107.3	138.3	142.3	167.3	197.8	205.3	213.8	198.8
Gold production (x4)	-9.7	-14.6	-16.1	-21.3	-24.3	-28.8	-37.1	-36.2	-42.5	-52.2	-39.6	-47.3	-52.8	-67.8	-73.8	-77.8	-81.8	-91.8	-96.8
Electricity price (p0)	4	8	13	18	22.5	28	33.2	39.4	47.8	50.3	54.4	59.5	64.6	92.1	123.4	148.2	174.0	190.0	198.0
Electricity investment (x2tot)	-1.1	-1.2	-1.3	-2.8	-5	-7.7	-10.1	-11.6	-11.3	-9.9	-7.7	-5.4	9.6	23.6	36.6	48.6	58.6	67.6	76.1
Electricity output (x1tot)	-0.4	13.5	17.6	14.2	11.6	14.4	8.3	13.1	25.3	30.3	28.9	31.8	35.8	34.8	32.8	36.8	38.8	40.8	44.8

Source: SARB, StatsSA and PEKGEM

In order to determine whether South Africa's economic policies since 1994 have been successful in addressing the pressing issue of unemployment, reference is made to details in Figure 4.2 below, which illustrates movements in selected macro variables, but as cumulative percentage changes. Figure 4.2 gives a broad overview of the trends and movement in South Africa's labour market, based on the historical data set out in Table 4.1 above.

Figure 4.2: Cumulative percentage change of labour, capital and trade



Source: SARB, StatsSA

Figure 4.2 above shows movements in labour versus capital, and exports versus imports. The figure clearly illustrates the widening trade deficit and the impact of the global financial crisis in 2008/2009, together with the poor performance of the labour market in terms of employment numbers compared with the growth in capital stock. Table 4.2 illustrates a cumulative percentage change of 62.7 per cent for exports and 112.7 per cent for imports between 1995 and 2013. The growth in imports is almost double the growth in exports over the same period.

Figure 4.2 also shows the sharp increase in the capital/labour ratio, indicating an increase in the use of capital relative to labour. The following sections will show the movements in the variables that were determined endogenously in the PEKGEM model and which will help to explain the observed movements illustrated in Figure 4.2 above.

4.8. Historical simulation results from 1995 to 2013

The PEKGEM model has determined the movement across various endogenously set variables, given the closure and historical exogenous shocks applied to the model. Tables 4.3 and 4.4 below show the endogenously determined variables most relevant to the analysis of this dissertation of the selected macro and industry variables in Table 4.1 above. The macro variables include: aggregate employment (employ_io); average capital rental (p1cap_i); average real wage (avewager); balance of trade (delB); the shift in export demand (f4q_c); and total government expenditure (wgovexp). The industry variables chosen are: employment by industry (wmploy_o), which includes trade, community service, manufacturing, mining and agriculture. Table 4.3 below shows the results as annual percentage changes, and in Table 4.4 below as cumulative percentage changes.

The most noticeable result from the historical simulations, and also the core focus of the analysis, is the changes observed in the primary factor alignment, that is, the combination of capital and labour. The historical data in Table 4.1 above show an increase in capital relative to labour (K/L) over the 1995 to 2013 period, despite the increase seen in the rental of capital relative to wages (P_K/P_L). This seems to defy conventional theory of employment. The industry variables support this finding and show that the structure of employment by industry has shifted substantially.

To explain how the economy changed over this period to get to this result, the following sections give an overview of the macroeconomic and industry results in Table 4.3 below, and will explain the observed capital-labour changes.

Table 4.3: Annual percentage change to selected endogenous variables: 1995-2013

Endogenised macro variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Aggregate employment (employ_io)	3.8	3.7	3.9	3.8	3.9	3.8	3.1	2.1	-1.8	-2.1	4.2	3	0.4	3	-3	-1.5	1.5	0.5	0.5
Average capital rental (p1cap_i)	9.2	10.6	4.2	5.9	11.3	14.4	13.2	3.1	20.8	15.9	13.8	10.5	13.3	9.4	-17.3	6.4	9.3	3.4-	0.8
Average real wage (avewager)	-10.1	-9.4	-11.3	-8.5	-6.7	-7.3	-8.6	-11.5	-0.2	6.8	-4.1	-5.2	-5.5	-9.4	-1.6	0.2	-5.5	-4.7	-4.8
Balance of trade/ GDP (delB)	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0
Shift in export demands (f4q_c)	7.3	30.3	18.5	7.5	-7.6	0.1	8.7	-1.9	22.1	10.6	17.5	20.9	4.3	0.1	-1.3	17.1	10.2	-1.5	13.0
Total government expenditure (wgovexp)	1.8	-4.5	7.5	-8.2	-13.4	-1.1	-8.2	4.9	2.6	1.6	2.8	4.3	5.2	1.1	7.9	5.8	5.6	5.9	0.8
Endogenised industry variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Employment by industry_community ser (employ_033)	9.5	2.5	6.4	2.5	2.5	4.7	2.2	1.9	-1.1	0.9	7.1	6.7	1.6	0.5	-5.9	-0.9	2.6	0.1	0.2
Employment by indstry_trade (employ_028)	7.3	6.1	4.5	6.5	5.9	4.0	4.9	2.9	-3.5	-0.9	3.6	6.5	-0.7	0.3	-5.2	-0.3	2.6	1.4	0.7
Employment by indstry_manufacturing (employ_024)	0.8	6.1	10.8	1.5	2.7	5.5	1.1	-0.7	4.6	-0.7	6.6	2.7	0.7	0.4	-5.7	-1.0	1.8	-0.5	1.3
Employment by indstry_mining (employ_03)	12.7	9.3	8.6	3.1	0.0	6.0	-3.0	-0.3	-1.5	-2.1	6.4	2.6	0.9	0.6	-12.3	-2.1	1.0	-1.5	0.7
Employment by indstry_agriculture (employ_01)	3.3	7.5	4.7	6.4	10.9	7.4	10.5	-0.2	6.5	0.4	7.5	2.3	0.9	-1.2	-3.9	-1.3	1.1	-1.6	-0.3

Source: PEKGEM simulation results

Table 4.4: Cumulative percentage change to selected endogenous variables: 1995-2013

Endogenised macro variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Aggregate employment (employ_io)	3.8	7.5	11.4	15.2	19.1	22.9	26	28.1	26.3	24.2	28.4	31.4	31.8	34.8	31.8	30.3	31.8	32.3	32.8
Average capital rental (picap_i)	9.2....	19.8	23.9	29.9	41.2	55.6	68.8	71.9	92.6	108.6	122.4	132.9	146.2	155.5	138.2	144.6	153.9	157.3	158.1
Average real wage (avewager)	-10.1	-19.5	-30.8	-39.3	-46.0	-53.3-	-61.9	-73.4	-73.6	-66.8	-70.9	-76.1	-81.6	-91.0	-92.6	-92.4	-97.9	-102.6	-107.4
Balance of trade/ GDP (delB)	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Shift in export demands (f4q_c)	7.34	37.94	56.44	63.94	56.37	56.46	65.14	63.19	85.25	95.58	113.29	134.27	138.59	138.7	137.37	154.42	164.61	163.14	176.14
Total government expenditure (wgovexp)	1.8	-2.8	4.8	-3.4	-16.8	-17.8	-26.1	-21.3	-18.7	-17.0	-14.3	-9.96	-4.8	-3.7	4.2	9.9	15.6	21.5	22.3
Endogenised industry variables	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Employment by industry_community ser (employ_033)	9.5	12.0	18.4	20.9	23.3	28.1	30.3	32.2	31.1	31.9	39.0	45.8	47.4	47.9	41.9	40.95	43.6	43.71	43.5
Employment by indstry_trade (employ_028)	7.3	13.4	17.9	24.4	30.1	34.3	39.2	42.2	38.7	37.8	41.4	47.9	47.2	47.52	42.4	42.07	44.6	46.0	46.7
Employment by indstry_manufacturing (employ_024)	0.8	6.9	17.7	19.2	21.9	27.4	28.5	27.8	32.4	31.8	38.4	41.1	41.8	42.2	36.5	35.48	37.3	36.8	38.1
Employment by indstry_mining (employ_03)	12.7	22.1	30.7	33.8	33.8	39.8	36.8	36.5	35.0	32.9	39.3	41.9	42.9	43.5	31.2	29.1	30.1	28.6	29.3
Employment by indstry_agriculture (employ_01)	3.3	10.8	15.4	21.9	32.8	40.2	50.7	50.4	56.9	57.4	64.8	67.1	67.9	66.8	62.9	61.6	62.7	61.1	60.8

Source: PEKGEM simulation results

4.8.1. Macroeconomic effects

Table 4.3 above gives a macroeconomic overview of South Africa's economy since it became a democracy in 1994. The literature pointed out that some of the main quantitative objectives set in the economic policies since 1994 included an annual growth rate of 6–7 per cent, halving unemployment and poverty by 2014, and making South Africa's productive sectors the largest employers. The general assessment of these policies is that they are not breakthrough polices which were able to promote increased growth and employment. Each new policy has been no different from the previous, and had a weak approach to addressing South Africa's socio- and economic challenges.

These shortcomings and failures are evident in Table 4.3 above. Although employment was steady between 1995 and 2002, it started to decline in 2003 and was worsened by the 2008/2009 global financial crisis. The balance of trade had been relatively constant between 1994 and 2001. It was only in 2002 that imports started to grow at a faster rate than exports, as also seen in Table 4.1, resulting in an overall trade deficit. Labour unions are usually opposed to trade deficits, since jobs are being lost to overseas workers. This is consistent with the results. When South Africa had a constant balance of trade during the 1990s, there was slow but consistent growth in employment, and vice versa when imports started to grow faster than exports.

Even though the economy has been experiencing a trade deficit in recent years, the shift in export demand has varied over the past twenty years. Export demand for locally produced goods is subjective to input cost, meaning capital and labour. Looking at the cost of labour and capital in Table 4.3 above, one can see some consistencies between the shift in export demand and the price of inputs. The gradual decrease in the demand for exports as imports have grown, together with increases in the price of labour, has resulted in a decrease in employment growth.

This is consistent with the literature that the net effect of employment in the trade sector is small, and secondly, the employment gains appear to be larger for skilled labour than for semiskilled and unskilled labour. Lastly, the changing trade orientation in South Africa over the last two decades appears to be for capital, rather than labour (Gossel,

2013). This is not consistent with the theory that producers will choose the most cost effective combination of inputs for production, seeing as the cumulative percentage change for average capital rental is 158.1 per cent compared to the -107.4 per cent for the average real wage of labour between 1995 and 2013.

Finally, the analysis considers total government expenditure. The government undertakes various expenditures to carry out specific key function in the economy, including job creation. Since 1995, government expenditure has fluctuated, but has shown a small overall increase over the past twenty years, with a cumulative percentage change of 22.3 per cent. This has contributed to slow employment growth, since government spending funds policy programmes, public employment programmes, education, skill development, and many more.

Over the past two decades South Africa's economy has become more open and outward orientated, making it difficult for policy makers and government to keep up with these changes.

4.8.2. Industry-level effects

In addition to the overall macroeconomic impacts on employment, the exogenous shocks applied also had a significant effect on employment levels across different industries. For the purpose of this analysis, the trade, community service, mining, manufacturing and agricultural sectors were chosen to determine how employment changed.

From the industry-level results shown in Table 4.3 above, it becomes clear that between 1995 and 2013, South Africa's structure of employment by industry has shifted substantially. The first indication is the overall increase in employment in the community service sector since 1995. These new job opportunities were primarily in education, health care and the police force (StatsSA, 2013a), although the increase in government spending on labour-intensive projects has also contributed to the employment growth in the community service sector. These labour-intensive projects are comprised in the Extended Public Works Programme (EPWP), which uses labour-intensive methods to

create new job opportunities and teach people new skills for finding jobs after completing the EPWP (NGP, 2010).

The results also show increasing employment rates in the trade sector, which includes wholesale and retail. Changes in the trade sector have mostly been driven by internationalisation and the increase in competition and have transformed the way in which businesses operate, and the types of jobs for which there is a demand (Van Aardt & Van Tonder, 2011). South Africa's wholesale and retail sector is regarded as a major employer and a growth sector of the economy. However, to ensure the sector's competitiveness and its contribution to economic growth, these sectors have become more skill intensive. (Van Aardt & Van Tonder, 2011).

In contrast, main productive sectors, such as manufacturing and mining, experienced much slower growth in employment and a decline as a percentage of total employment over the same period. The agricultural sector also showed an overall decline in employment since 1994, however, this sector remains one of the biggest employers, especially in rural and underdeveloped areas. Mining and agriculture represents two of the most labour-intensive sectors in South Africa, yet there has been a sharp decline in employment as a result of structural change taking place across various industries since 1994.

According to the objectives of the NGP and the IPAP, the manufacturing, mining and agriculture sectors should be the largest contributors to employment growth, and not the service sector. According to these documents, South Africa's productive sectors have been contributing far less than they are potentially capable of doing (DTI, 2013). When South Africa became a democracy in 1994, the objective was to restructure the manufacturing sector to make the economy more competitive in the international arena. The objective was to reverse the high level of unemployment that prevailed after 1994, and was expected to drive higher growth rates and create sufficient employment opportunities. However, the results show that this has not been the case.

This brief overview of the simulation results of the macro and industry variables clearly indicates how the reality varies from the theory of growth and employment. These structural changes have played an important role in the high unemployment rates since

1994. Therefore, to address unemployment, the structural change – namely the preference for capital over labour – needs to be addressed.

4.8.3. Explaining the observed capital-labour changes

Based on the simulation results broadly discussed in the previous sections, there has been a technical change in favour of capital relative to labour between 1995 and 2013.

According to the Heckscher-Ohlin theory, South Africa has a comparative advantage in unskilled labour-intensive goods, especially given the country's abundance of labour and high levels of unemployment. The theory predicts that liberalising trade would lead to an increase in the demand for unskilled labour, which would ultimately lead to a decrease in income inequality and poverty. Unfortunately, this has not been the case for South Africa. According to the results, there has undeniably been an improvement in trade (imports and exports) following the opening of the economy to global markets. Although this has been predicted by theory, the accompanying increase in employment and reduced income inequality and poverty had not been seen.

In addition, the increase in capital intensity has lowered the need for unskilled and low-skilled labour, but has increased the demand for skilled labour required to operate and maintain capital equipment. This could explain the substantial decrease in South Africa's aggregate employment between 1995 and 2013.

To standardise the increase in the K/L ratio, a cost-neutral capital/labour preference is introduced, shown below as 'twistlab'. The capital/labour preference variable (twistlab) captures the changes between capital and labour that are not explained by the relative price changes in these variables.

The results over the 1995–2013 period indicate a strong shift in the preferences away from the use of labour to capital. To better understand the structural shift, the theoretical specification of the capital/labour preference within PEKGEM is considered. The input demand equations of industries are determined subject to a CES (constant elasticity of substitution) combination function with substitution elasticities (σ) between the various primary sectors, set at 0.2. With $\sigma \neq 1$ in the input demand equations, it allows the

capital/labour preference variable to accommodate the exogenous historical data to be introduced and converted into taste or technical changes. Equations (1) and (2) below show the demand equation as it appears in the PEKGEM model code (adjustments to the PEKGEM equations were made based on the work of Bohlmann and Breitenbach (2013)).

$$cap = z - \sigma S_L (p_{K-} p_L) + S_L (twistlab) \quad (1)$$

$$lab = z - \sigma S_K (p_{L-} p_K) + S_K (twistlab) \quad (2)$$

The industry demand for capital (K) and labour (L) is represented by *cap* and *lab*, respectively, as percentage change. In the absence of any change in output (z) and the relative factor prices $(p_{L-} p_K)$, $twistlab = (cap - lab)$ and $(S_K * cap + S_L * lab = 0)$. The preference is therefore equal to any movements in the technical change associated with capital (α_K) and labour (α_L). This is illustrated in equations (3) and (4) below.

$$S_L (twistlab) = - \sigma S_L (\sigma_K - \alpha_L) \quad (3)$$

$$S_K (twistlab) = - \sigma S_K (\sigma_L - \alpha_K) \quad (4)$$

By implementing the $twistlab$ via technical change variables, it can be assumed that:

$$(\alpha_K = \frac{S_L}{1-\sigma} * twistlab) \quad \text{and} \quad (\alpha_L = \frac{S_K}{1-\sigma} * twistlab)$$

Therefore, if σ <1, a positive $twistlab$ value is equal to a cost-neutral capital using technical change, together with a labour-saving technical change. The back-of-the-envelope equations (5) and (6) below can be used to provide more insight into the structure of the K/L movements.

$$F_K A \left[\frac{K/A_K}{L/A_L}\right] = \frac{Q}{P_i} * \frac{P_i}{P_y} \quad (5)$$

$$A\left[\frac{K/A_K}{L/A_L}\right] = \frac{W}{P_c} * \frac{P_i}{P_y} \quad (6)$$

The marginal product of capital (F_K) is negatively related to the K/L ratio in equation 5 and the marginal product of labour ($F_{L)}$ is positively related to the K/L ratio in equation 6. To determine equation 5, it is assumed that the rate of return on capital is showed as ($\frac{Q}{P_i}$), with *Q* the factor payment to capital and P_i the price for new investments. It is also assumed that the value of the marginal product of capital can determine *Q* and can be written as ($F_K * P_y$). (F_K) is shown as a function of the K/L ratio, while (A) and (P_y/P_i) is a function of the terms of trade (delB). With this, the relationship can be summarised using equation 5. Similarly, equation 6 can link real wages (W/P_c) to the K/L ratio, technical change and the terms of trade.

The back-of-the-envelope equations can now be used to help interpret the results of the $twistlab$ variable. Thus, using equation 5, a preference twist affecting capital will be conducted via technical change variable (A_K). Similarly, using equation 6, a preference twist affecting labour will be conducted via technical change variable (A_L).

The historical simulation results using PEKGEM show a strong technical change in favour of capital relative to labour between 1995 and 2013. This is shown in the positive value of 8.1 per cent generated for the capital labour preference twist ($twistlab$).This result is associated to an increase in A_K in equation 5. This will require a rise in the amount of capital used. For labour, this will result in a decrease in A_L in equation 6, requiring a decrease in the number of labour used.

This suggests that, at any given ratio of real wages relative to the rental price of capital, industries would choose a K/L ratio 8.1 per cent higher in 2013 than in 1995. With more capital preferred relative to labour in the production process, it can also be interpreted as a change in the preferences of industries of how their production composition should look. In recent years, there have been a number of industrial action cases, together with protracted strikes from labourers to push for higher real wages. However, according to Altman (2001), South African industries depend on low wages to remain competitive in

global markets. As a result, more and more industries have started to invest in capital, rather than labour to remain competitive.

4.9. Summary

Some of the main objectives in South Africa's economic polices since 1994 have included higher economic growth, sustainable job creation and reduced poverty. However, looking at the macroeconomic results shown in Table 4.3 above, the general assessment of these policies is that they were not breakthrough policies that have truly made a contribution to ensure sustainable growth and employment in South Africa since 1994. Overall, these policies had a weak approach to addressing these issues.

As a consequence, the macroeconomic results in Table 4.3 show an overall decline in employment growth between 1995 and 2013. Over the same period, the economy experienced a trade deficit, together with a gradual decline in the demand for exports as imports have grown, while total government expenditure has shown a slight increase over the period under review. All these variables have contributed to the economy's persistent unemployment growth.

In addition, the industry-level results shown in Table 4.3 indicate that the structure of South Africa's employment by industry has shifted substantially. This is evident in the decrease in employment in the primary factor industries, which include agriculture, mining and manufacturing, while unemployment in the services sector has increased since 1995. This has been mainly attributable to the structural change where industries created a preference for capital over labour in production.

Therefore, the most important result from the historical simulations, and also the core focus of the analysis, is the changes observed in the primary factor alignment, that is, the combination of capital and labour. The historical data in Table 4.1 show an increase in capital relative to labour (K/L) over the 1995 to 2013 period, despite the increase seen in the rental of capital relative to wages (P_K/P_L). This seems to defy conventional theory of employment. The industry variables support this finding and show that the structure of employment by industry has shifted substantially.

To better understand the structural shift, the theoretical specification of the capital/labour preference within PEKGEM was considered. The results suggests that at any given ratio of real wages relative to the rental price of capital, industries would choose a K/L ratio 8.1 per cent higher in 2013 than in 1995. With more capital preferred relative to labour in the production process, it can also be interpreted as a change in the preferences of industries of how their production composition should look.

When comparing the results to the objectives stated in the various economic policies of South Africa since 1994, it becomes clear that the issue of unemployment has not improved under review of the various policy initiatives implemented since 1994. Not only has there been a decline in employment growth in the past twenty years, there has been a structural shift in the economy where industries and employers prefer the use of capital over labour. The fact that South Africa has a comparative advantage in unskilled labour intensive goods, especially given the country's abundance of labour and high levels of unemployment, emphasises the shortcomings of South Africa's economic policies in addressing the pressing issue of unemployment.

Chapter 5: Conclusion and recommendations

5.1. Introduction

Although South Africa has made progress, widespread income disparities remain, unemployment is still high and many people still lack necessities. Until now, the debate on the efficiency of economic policy in South Africa to create new jobs and stimulate growth has received little attention. This dissertation aimed to contribute to the debate by analysing political dynamics and trends in South Africa, to determine how the dynamics and structure of South Africa's employment changed during the period in which these policies were implemented. This will help to inform policymakers on the historical performance under these various policies and to assist them in making better informed decisions in the future.

The main objectives of this dissertation were, firstly, to examine the country's national economic policies from 1994 to 2014. Secondly, to determine, as these policies have changed and progressed, whether there has been a shift in their focus on the issue of unemployment during the period under review. Finally, to determine how the dynamics and structure of South Africa's employment changed during the period in which these policies were implemented. This was determined empirically by simulating changes in the K/L ratio in all sectors of the economy by means of a historical CGE modelling approach.

The research method used included a literature and empirical study. The literature study provided an overview of current research and knowledge on employment, economic growth and human capital theories, as insight on South Africa's employment since 1994. The empirical study used evidence-based analysis to reveal the full ramifications of economic policies and events in the economy. More specifically, a dynamic CGE model was used to perform such analysis.

In the first chapter, an introduction to this dissertation was provided, by stating the background, motivation, problem statement, objectives, and method, together with an outline of the chapters. The literature study, in Chapter 2, provided an overview of the current literature on employment, economic growth and human capital theories. Chapter

3 gave an overview of South Africa's growth, labour market and unemployment since 1994 and set out to identify, describe and explain South Africa's economic policy, programmes and strategy decisions and economic recovery since the transition in 1994, with a specific focus on the labour market. The economic policy documents that were reviewed include:

- The Research and Development Programme (RDP)
- Growth, Employment and Redistribution Programme (GEAR)
- Accelerated and Shared Growth Initiative of South Africa (ASGISA)
- The Medium Term Strategic Framework (MTSF)
- New Growth Path (NGP)
- Industrial Policy Action Plan (IPAP).

In Chapter 4, the method of the CGE modelling and its characteristics were discussed to explain how CGE modelling, more specifically the PEKGEM model, can deliver policy-relevant findings across diverse policy issues. Chapter 4 also presented the results from the analysis and summarised the movements and changes in capital and labour between 1995 and 2013.

5.2. Summary of the results and conclusions of the study

Chapter 2 provided an overview of current research and knowledge on employment, economic growth and human capital theories, as insight on South Africa's employment since 1994. South Africa faces various macroeconomic and microeconomic policy challenges, such as competitiveness, productivity, and slow growth, which have all had an impact on sustainable job creation since 1994.

The literature pointed out that these macroeconomic and microeconomic policy challenges have all had an impact on sustainable job creation since 1994. According to the literature, these policies should focus on developing human capital to ensure productive and sustainable employment creation, through structural change to more productive sectors that can absorb labour.

The different theories by Smith, Ricardo, Mill, Solow, Arrow and Romer, all have different models and views on economic growth and job creation. Several factors were stated, including human capital, education, labour and technological change. These theories emphasise the importance of improving skills and investing in human capital that will yield returns for both the employer and the employee. These theories show that human capital is interdependent on technological advancements and can be considered as the driving force of economic growth.

Chapter 2 concluded that one of the reasons why South Africa is unable to create more job opportunities or compete efficiently in the emerging global market is because of the shortage of skills required. In order for the labour force to be fully featured, education, training and retraining is crucial. Studies done by Edwards (2001), Kapsos (2005), and Adams *et al*. (2013) have all found that investing in human capital enables countries to perform better in terms of employment, growth and reduced poverty and inequality. In the end, there is a very close link between human capital, physical capital and technological change, indicating the interdependence between these variables.

However, the growing unemployment among semi-skilled and unskilled workers presents something of a challenge for policy makers, because of the fact that industries and sectors have become internationally competitive and grown since the 1990s, and have done so by shedding labour and increasing capital and skill intensity of production.

Several economic policies have been unveiled since the democratic election in 1994, none of which has been fully effective in addressing the problem of unemployment. Chapter 3 gave an overview of South Africa's growth, labour market and unemployment since 1994 and set out to identify, describe and explain South Africa's economic policy, programmes and strategy decisions and economic recovery since the transition in 1994.

South Africa's transition to a democracy in 1994 posed difficult development policy challenges, and the South African Government's successes in overcoming these challenges was noted. Some of these included the increase in job creation, in the public service sector, the expansion of business services in the private sector and an increase in employment in the transport and communication sectors. The EPWP launched in 2004 has also contributed to an increase in economic growth, coupled with improved

education and skills development. Ongoing efforts by government have also ensured that higher levels of education can contribute significantly to the changes in the structure of employment.

However, based on the outcome of the RDP, GEAR, ASGISA, MTSF, and NGP, together with the IPAP policy, economic performance has been disappointing. GDP growth has remained low, unemployment continues to increase, while key objectives of improved service delivery and poverty reduction remain unattained. South Africa's transition to democracy has opened the economy to global competition, becoming more open, productive and outward orientated over the past two decades. As a result, employers have developed a preference for using capital over labour in production. Trade liberalisation and globalisation has shifted production away from labour-intensive sectors towards more capital-intensive ones.

In the end, the low levels of economic growth and investment were insufficient to contribute to the reduction in unemployment and policy achieved very little success in distributing wealth and equality. Some of the policy programmes implemented since 1994 were successful in achieving macroeconomic objectives, but fell short with regard to the social challenges of the country, most notably job creation, poverty reduction and education.

Although a great deal has been done to address the struggles of apartheid, the need to address the fundamental problems and issues created during the pre-democratic era still remains critical. The most worrying aspect of South Africa's disappointing economic performance over the last two decades is unemployment, and it poses a significant threat to the sustainability and stability of the South African democracy. South Africa's unemployment is closely connected to the economy's inability to generate much growth momentum over the last 20 years.

Using historical CGE analysis, more specifically the PEKGEM model, Chapter 4 modelled the change in the labour-to-capital ratio between 1995 and 2013 in order to determine whether there has been a major shift away (or vice versa) from labour to capital across the different sectors in the South African economy. This helped to

determine whether the issue of unemployment has improved under review of the economic policies that have been implemented since 1994.

The analysis used a historical closure to quantify the effects of changes in the economy between 1995 and 2013. The historical closure included the following exogenous variables as shocks in the model: employment, investment, government spending, capital stocks, imports and exports.

The most important result from the historical CGE simulations is the changes that were observed in the primary factor alignment, that is, the combination of capital and labour. An overview of the exogenous historical variables (Table 4.1 above) showed an increase in capital relative to labour between 1995 and 2013, despite the increase seen in the rental price of capital relative to wages over the same period.

From the literature in Chapter 2, this is in part because the structure of the economy has evolved in response to technological advancements and the changing demands of production, together with the growing need for higher-level skills. In accordance, the literature shows that the skill-biased demand for labour, together with the substantial increase in the supply of a relatively well-educated young workforce, has resulted in a sharp increase in unemployment since 1994.

In addition to the growing labour force, the rising cost of labour and labour market rigidities are also posited as an explanation for industries shedding labour. According to Fedderke and Bogetic (2006), the structural change in the economy, combined with labour militancy, favours skilled works, resulting in increasing labour costs that exceed labour productivity improvements.

The results further indicated that the endogenous macroeconomic variables (Table 4.3 above) were consistent with the overview of the historical exogenous variables. This indicated an overall decline in employment between 1995 and 2013, together with a trade deficit, decline in export demand and low wages, all contributing to a decline in employment growth.

When South Africa became a democracy in 1994, the objective was to restructure the manufacturing sector to make the economy more competitive in the international arena.

The objective was to reverse the high level of unemployment that prevailed after 1994, and was expected to drive higher growth rates and create sufficient employment opportunities. However, because international competitiveness requires technological change that is biased towards capital- and skill-intensive production, the manufacturing sector's contribution to growth and employment creation has been disappointing. According to the literature, various industries and sectors that have become internationally competitive and grown during the 1990s, have done so by shedding labour and increasing capital and skill intensity of production.

This is confirmed in an analysis by Edwards (2001) of the factors that drive export growth and labour demand and revealed that these factors are consistent with increasing unemployment. He further identified two distinct impacts that trade liberalisation has on employment levels: structural changes at firm level to increase international competitiveness, and access for imports into previously protected sectors.

The loss of employment was also illustrated by the endogenous industry variables. South Africa's main productive sectors, including manufacturing, mining and agriculture, experienced much slower growth in employment and declined as a percentage of total employment over the same period. According to the NGP and IPAP (2010), mining and agriculture are two of the most labour-intensive sectors in South Africa, yet employment in these sectors has declined, owing to structural changes taking place.

This is supported by the literature of Banerjee *et al*. (2008) who found that many skilled sectors in South Africa are having difficulty filling certain positions due to the structural nature of South Africa's unemployment. In addition, Banerjee *et al.* (2008) stated that there have also been sectoral changes in unemployment; attributable to the structural shifts in production from the employment-intensive primary sector to the tertiary sector, resulting in a decrease in the demand for labour, particularly unskilled labour.

To better understand the structural shift, the theoretical specification of the capital/labour preference within PEKGEM was considered. The results suggests that at any given ratio of real wages relative to the rental price of capital, industries would choose a K/L ratio 8.1 per cent higher in 2013 than in 1995. With more capital preferred

relative to labour in the production process, it can also be interpreted as a change in the preferences of industries of how their production composition should look.

Not only has there been a decline in employment growth in the past twenty years, there has also been a structural shift in the economy where industries and employers prefer the use of capital over labour. The analysis shows that there has been very little improvement in the socio-economic challenges that South Africa face since 1994, especially in employment growth. Although there is no 'once-off' solution for South Africa's unemployment issue, there is considerable value in understanding the approaches taken by policy makers and knowing the outcome, so that effective adjustments can be made. Table 5.1 below provides a summary of the research objectives and how they were answered.

Table 5.1: Summary of the research objectives

	Primary research objective	**How it was answered**
1	Examine the country's national economic policies during the twenty years of democracy	A complete overview of South Africa's economic policies (RDP, GEAR, ASGISA, MTSF, NGP and IPAP) was given in chapter 3. This included the objectives, outcomes and challenges of each policy
2	Determine, as these policies have changed, whether there has been a shift in their focus on the issue of unemployment during the period under review;	Economic growth and employment creation were two of the top objectives stated in all of the policy documents. However, the implementation of the programmes to achieve these objectives has, overall, been unsuccessful.
3	Determine whether the issue of unemployment has improved under review of the economic policies implemented since 1994.	Using historical CGE analysis, more specifically PEKGEM, the change in the L/K ratio was modelled between 1995 and 2013. This showed that there has been a major shift away from labour to capital, indicating that at any given rental price relative to wages, industries would choose a K/L ratio 8.1 per cent higher in 2013 than in 1995. This showed that not only did employment growth decline over this period, there has been a structural shift in the preference of industries.

	Secondary research objective	How it was answered
1	Determine, from a theoretical point of view, how effective South Africa's economic policies have been and whether they have met the goals set by the South African Government	Based on the literature, economic performance under the RDP, GEAR, ASGISA, MTSF, and NGP, together with the IPAP policy, has been disappointing. GDP growth has remained low, unemployment continues to increase, while key objectives of improved service delivery and poverty reduction remain unattained
2	Determine, from theory, to what extent these policies have contributed to economic and social development in South Africa	The country has been transformed in some aspects, with greater access to housing, sanitation and education in rural areas and the upgrade of South Africa's economy to an upper-middle income status. The EPWP has also contributed to South Africa's growth in employment, particularly the unskilled. However, this is not sustainable in the long run.

5.3. Recommendations

Based on the literature discussed in Chapters 2 and 3 and the historical CGE simulation results in Chapter 4, a number of insights may be drawn regarding South Africa's weak employment growth since 1994. In 2012, the National Development Plan (NDP) was implemented and currently serves as South Africa's newest development policy plan. As with all the other policies, the NDP is geared towards the improvement of South Africa's economic growth and employment creation (NDP, 2012). However, based on the fact that the policy has a bottom-up approach, instead of the usual top-down approach, policy makers believe that the NDP can achieve the objectives which the other policies failed to do (NDP, 2012).

However, the government does admit that this is not a perfect policy, and critics such as COSATU agree (COSATU, 2013). Ultimately, the NDP is an indicative report on what needs to be, but still falls short in presenting an actual strategic plan of action (COSATU, 2013). Therefore, although the NDP is considered to be one of the greater success stories since 1994, it requires a widespread buy-in by everyone in the country to ensure a better outcome than that of the previous economic policies.

This includes increased investment by government, more productive use of capital by better skilled workers and balance in labour costs. If this is achieved, the increase in employment growth will, in its own right, increase growth and reduce poverty, benefiting the economy as a whole (Lin & Monga, 2011).

Therefore, to achieve higher employment and growth, a wide range of policy initiative changes are required. The following section indicates some areas of reform that might help South Africa to achieve higher economic growth, increased employment and reduced poverty based on the findings of this study:

- Firstly, South Africa spends large amounts of the annual budget on education. Therefore, a bigger focus is needed on how effective that investment is being used. Policy should focus on how the use of education funding can improve teaching (provide relevant skills that are needed in the market) and accordingly the impact on the labour market.
- Increase the employment intensity of the economy by reducing the skill mismatch in the economy and improving the education system. Thus, policy intervention should include government-funded active labour market programmes, aimed at employment creation in the private and public sector, education, training incentives and job search assistance to address the skill mismatch, and reforms of labour legislation.
- Increase competition in sectors that are dominated by small and medium enterprises to increase their productivity, lower their costs and increase employment.
- Create a more flexible and responsive trade policy that is driven by a partnership between government and businesses to create more job opportunities.
- Relax South Africa's labour legislation. This is far too severe for a country with these types of unemployment conditions. As such, the lack of flexibility in labour market legislation is contributing to increasing unemployment and inequalities in the economy.

- Restructure South Africa's labour relations to be more responsive and design it to avoid strikes, attract investment and the skills needed.
- Study the approaches adopted by other developing countries in their fight against unemployment, to learn from their successes and failures.
- Finally, deploy capable leaders into the public service to ensure that polices are well executed.

Furthermore, the empirical analysis of this dissertation only focused on determining how employment changed under review of the various economic policies implemented since 1994. Future studies can also focus on testing causality between unemployment and the various economic policies to determine whether the change in the policy had a direct effect on employment.

Secondly, this dissertation can also serve as the basis for generating forecasts of growth rates across various industries and occupations, give detailed trends in tastes and technology, and make future projections.

Thirdly, the deviations from forecast paths caused by policy changes can be calculated to help guide the implementation of more effective policy initiatives in the future.

Finally, a specified regional CGE model can be used to address the increasing unemployment problem by region. This could help to identify regions where unemployment is higher and policy issues are more complex.

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