Are South Africa’s National Development Plan’s economic growth and employment initiatives sufficiently robust to realise vision 2030? A cross-country analysis.

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6 November 2017
Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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6 November 2017
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ARE SOUTH AFRICA’S NATIONAL DEVELOPMENT PLAN’S ECONOMIC GROWTH AND EMPLOYMENT INITIATIVES SUFFICIENTLY ROBUST TO REALISE VISION 2030? A CROSS-COUNTRY ANALYSIS.

Abstract: This paper investigates whether South Africa’s National Development Plan’s (NDP) nine economic growth and employment initiatives are sufficiently robust to result in increased economic growth, reduced inequality and eradicated poverty by 2030. An analysis of secondary economic data of 79 countries for the period 1991 to 2016 determined which economies achieved employment-intensive, inclusive growth. Thereafter, the prevalence of the NDP’s economic growth and employment initiatives was compared in the employment-intensive, inclusive growth countries and the ‘rest of the world’s’ countries. The results suggest that seven countries exhibited employment-intensive, inclusive growth and, six of the nine NDP initiatives were more prevalent in the employment-intensive, inclusive growth countries and thus, are sufficiently robust to achieve the NDP's goals.

Keywords: Employment elasticity, Unemployment, Inclusive Growth, National Development Plan

1. INTRODUCTION

South Africa’s National Development Plan (NDP) has proposed several economic growth and employment policy initiatives that aim to increase employment from 13 million in 2010 to 24 million in 2030, increase real economic growth and reduce poverty and inequality in South Africa as part of a plan to overhaul the economy and realise "Vision 2030” (National Planning Commission, 2011). This is being proposed in a country with a fast-growing population of 55 million as at the end of 2016, unemployment levels of above 25%, and low GDP growth and high-income inequality with a Gini Coefficient of 0.69 at the end of 2014 – one of the highest in the world (World Bank, 2017). With the combination of these realities perpetuating the prevalence of poverty, they need to be reversed if the standards of living of the average South African are to improve and, if the South African economy hopes to enjoy sustainable economic growth.

The research sought to test the robustness and likelihood of success of the economic growth and employment initiatives proposed in the NDP. In other words, test i the hypothesis that the NDP employment and economic growth initiatives do not lead to employment-intensive, inclusive growth. This was achieved by conducting an empirical analysis of the world’s economies to
determine which ones have managed to attain employment-intensive, inclusive growth by incorporating desired macroeconomic features into their economic policies. This research thus tested whether the South African NDP’s economic growth and employment initiatives are likely to result in employment-intensive, inclusive growth.

By testing the prevalence of the NDP initiatives in a group of employment-intensive, inclusive-growth economies as compared to their prevalence in a control group, the non-employment-intensive, exclusive-growth economies. If they were found to be more prevalent in the first group, it would provide evidence that the proposed policy, if implemented correctly, would be likely to achieve the goal set for 2030 of reduced unemployment and reduced inequality in South Africa (National Planning Commission, 2011).

While this research has drawn on the established employment elasticity framework utilised in a cross-country analysis conducted by Kapsos (2005) and research by Islam (2004), it will make a contribution to academia in various ways. Firstly, this research assessed the robustness and thus likelihood of success of the NDP’s initiatives as opposed to focusing on whether or not the initiatives are likely to be implemented, which is what most NDP research to date has focused on.

The second contribution to the body of research relates to the macroeconomic determinants of employment-intensive growth. Most existing research has been confined to regions and economic clusters without testing whether other macroeconomic factors are prevalent in economies that have realised employment-intensive, inclusive growth. This research, however, analysed the NDP macroeconomic factors in specific employment-intensive, inclusive growth economies.

Finally, this research will contribute to development-economics literature by providing evidence regarding the types of economies that have managed to attain growth that is both inclusive and employment-intensive as research tends to focus on economic growth as the key signal of progress whereas, this in isolation and does not necessarily translate to the improvement in the livelihood of inhabitants. In other words, economic growth does not necessarily result in increased employment for an economy and this research offers insights into economies that have achieved growth with improved financial inclusion.

Relatively extensive research has been conducted regarding the likely failure of implementation of South Africa’s NDP. Research by Chilenga (2017) has argued that, while the NDP is an inclusive plan for socio-economic change, it does not highlight the factors required for successful implementation and ignores the role of rural economy in achieving successful implementation. In addition, Naidoo and Mare (2015) focused on the lack of co-ordination between various institutional players as a critical contributor to the likely failure of implementation of the NDP, and questioned whether the NDP is just another grand strategy in a series of strategies proposed.
by South African policymakers (Naidoo & Mare, 2015). While failure of implementation exacerbates the slow economic growth and increased unemployment South Africa is faced with, what is missing from the existing research is an assessment of whether the policy initiatives are sufficiently robust and thus likely to achieve the Vision 2030 goal “to eliminate poverty and reduce inequality” and as a result, “accelerate progress, deepen democracy and build a more inclusive society” (Chilenga, 2017, p 92).

South Africa’s labour force has an official unemployment rate of 26.5% and an expanded unemployment rate of 35.6% as at the end of quarter 4, 2016 (Statistics SA, 2016), which accounts for discouraged job seekers. High levels of unemployment result in a large proportion of the population being excluded from economic participation. This, in turn, results in an increased number of people depending on social grants which are funded by tax collected from 4.8 million South Africans (South African Revenue Service, 2016). As this constitutes less than 10% of the total population of 55 million (Statistics SA, 2016), additional strain is placed on the economy. Moreover, a lack of economic participation of large proportions of a population can exacerbate poverty levels and increase the incidence of crime, and likely contributes to the 10% break-in rate in surveyed households in 2015 (Lehohla, 2016).

In terms of economic growth, South Africa’s real GDP growth trends have varied since the country became a democratic republic in 1994 but in recent years, as the economy etches towards 2030, real GDP growth was at a low of 0.5% for as at the end of 2016 with negative growth of 0.3% registered in the final quarter of 2016 and negative 0.6% in the first quarter of 2017. This resulted in South Africa experiencing a technical recession (South African Reserve Bank, 2017). From the period 1994 to 2008 – that is, since the inception of democracy to the start of the global financial crisis – real GDP growth was on average 3.3% (Mahadea & Simson, 2010) compared to a subsequent average growth rate of 1.7% from 2009 to 2015 (World Bank, 2017). The world average for these periods was 3.6% and 2.3%, respectively (World Bank, 2017), which makes it evident that South Africa’s economic growth numbers have increasingly diverged from the world growth numbers since 1994.

Although the second quarter of 2017 yielded improved economic growth of 2.5%, to view economic growth as the sole indicator of an economy’s performance would present a skewed picture. Income inequality in South Africa remains high with the Gini-coefficient ranging between 0.59 in 1994 and 0.69 in 2016 (World Bank, 2016). The Gini-coefficient being a measure of income inequality ranging between zero and one with zero indicating no inequality and one indicating total inequality (Wittenberg, 2017), the aforementioned Gini-coefficients indicate an increase in inequality since the country became a democratic republic in 1994.
A more tangible illustration of the extent of inequality is evidenced by the top 10% of the economy accounting for 58% of the wealth; the bottom 10% accounting for 0.5% and more than 50% of the population living on less than 1 United States (US) dollar per day (Davie, 2015). Moreover, research conducted by the world economic forum indicated that economic growth is becoming less reliable as a gauge of the performance of an economy; there is therefore a need to consider various other indicators when assessing whether the well-being of an economy’s inhabitants has actually improved (Esposito, Altukhov & Shulguin, 2017).

Based on the world and South African GDP growth trends mentioned above, it is unlikely that the growth trajectory of South Africa will change in the near future. This will impact the economy’s ability to generate employment and, contradicts the underlying assumption in the NDP that “a sustainable increase in employment will require a faster growing economy” (National Planning Commission, 2011, p 17). As a result, there is a need to assess the economic growth and employment policy initiatives proposed in the NDP and to determine whether there is evidence of their contributing to success in economies that have attained sustained, inclusive, employment-intensive economic growth.

The analysis section of this research involved two parts, with the first part identifying a list of countries exhibiting employment-intensive, inclusive growth for the period 1991 to 2016. These countries were determined by applying a series of macroeconomic requirements to world economies, including an average population of 10 million or more, improved living standards evidenced by average real GDP growth exceeding average population growth, an employment elasticity of growth between zero and one, and a reduced Gini-coefficient in 2016 as compared to 1991. This list of countries is indicated below:

- Belgium
- Brazil
- Chile
- Philippines
- Thailand
- Turkey
- Zambia

The second part of the analysis was conducted on these employment-intensive, inclusive-growth countries and involved comparing the prevalence of their NDPs’ economic growth and employment initiatives to those of the rest of the world. The results indicated that, of nine NDP policy initiatives under analysis, six were more prevalent in the inclusive-growth economies, two were more prevalent in the “rest of the world” economies and one could not be assessed due to
limitations of data. This research therefore provides evidence that South Africa's NDP policy initiatives are sufficiently robust to achieve the reduced unemployment, reduced inequality and increased economic growth objectives of Vision 2030.

The rest of this paper is structured as follows: Section 2 reviews the prior literature as it relates to employment-intensive, inclusive economic growth, indicating that, while there are other established means of measuring the interaction of economic growth and employment in an economy, employment elasticity provides a more robust indication of how the two interact and the implications for the nature of growth in an economy. Section 2 also highlights inclusion and poverty reduction in the established literature and indicates that improved living standards and reduced inequality are desirable states for an economy and correctly underpin the initiatives in the NDP.

Section 3 details the methodologies used in the research, namely that a deductive, explanatory approach was adopted for both parts of the analysis. This section also describes the steps taken to arrive at a list of countries with sustained, inclusive, employment-intensive economic growth, and highlights the prevalence of NDP economic growth and employment initiatives in these countries as compared to the rest of the world. Section 3 furthermore presents the population, real GDP and employment data used and indicates that the data were attained from reliable databases where possible, including The World Bank, International Labour Organisation (ILO), World Economic Forum, and BMI Research. Instances where alternate sources had to be used to fill in any gaps in the data are also indicated.

Section 4 presents the results from part 1 and 2 of the analysis which indicated that seven of the world's economies under analysis exhibited employment-intensive, inclusive growth. This section further indicates that, of the nine NDP policy initiatives under analysis, six were more prevalent in the inclusive-growth economies, two were more prevalent in the rest-of-the-world economies and one could not be assessed due to limitations of data.

Section 5 provides a discussion on the robustness of the South African NDP policy and concludes that, based on this research, the NDP's economic growth and employment initiatives are sufficiently robust to result in achieving the employment and growth goals outlined in Vision 2030.

2. REVIEW

The review below explores why employment-intensive, inclusive growth is the desired type of growth for South Africa in the context of the NDP. It also demonstrates what literature to date has
determined regarding the elements that underpin this type of growth and why certain measures were deemed appropriate for this research.

2.1 Employment Elasticity – employment and economic growth

Employment elasticity of growth (also referred to as employment intensity) is a numerical measure of how employment changes with a one per cent increase in gross domestic product (GDP). While not commonly utilised, employment elasticities can provide insights into an economy’s ability to create sufficient employment opportunities for its inhabitants and indicate the extent to which employment and GDP move together (Kapsos, 2005). Employment elasticities also allow the employment intensity of an economy to be analysed as they provide insights into the extent of employment-intensive growth as opposed to productivity-intensive growth which is largely driven by higher productivity in an economy (Crivelli, et al., 2012).

Employment elasticity of growth provides a basis for determining the relationship between employment growth and GDP growth and provides a means to measure how employment-intensive GDP growth is for a given economy, sector or group (OECD, ILO & World Bank, 2015). Since this research aims to address the problem of growing employment while growing the economy in South Africa, employment elasticity of growth is an appropriate basis for conducting the research.

While striving to increase employment and grow the economy in an employment-intensive manner, focus needs to remain on ensuring that this is accompanied by increased economic productivity. This is particularly important for economies such as South Africa that have been categorised by jobless growth, as jobless growth is often accompanied by an under-employment of people in low productivity jobs (Stuart, 2011) which negatively impacts the economy’s ability to grow in a sustainable manner (Davie, 2015). Since developing economies tend to be categorised by large, surplus labour forces, particular attention should be paid to increasing productivity in activities that will absorb large proportions of the labour force (Stuart, 2011).

In light of the above, it is important to highlight the following arithmetic identity where Y denotes output, E denotes employment and P denotes productivity (output per worker) (Kapsos, 2005):

\[ Y = E \times P \]  

Equation 1 indicates that for changes in output, the below relationship holds:
\[ \Delta Y = \Delta E + \Delta P \] (2)

Equation (2) indicates that for a given amount of output growth (\(\Delta Y\)) an increase in the rate of employment must be met by an increase in productivity, which allows conclusions about elasticity to be drawn alongside conclusions regarding productivity. As a result, dividing both sides of the above equation by \(Y\) allows the below to emerge:

\[ \varepsilon = 1 - \frac{\Delta P}{\Delta Y}, \text{where } \varepsilon = \frac{\Delta E}{\Delta Y} \] (3)

Using equation 3, various elasticity scenarios can be interpreted in the context of positive and negative GDP growth. A summary of these relationship is provided below:

*Table 1 Interpreting employment elasticities*

<table>
<thead>
<tr>
<th>GDP Growth</th>
<th>Employment elasticity</th>
<th>Positive GDP growth</th>
<th>Negative GDP growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(\varepsilon &lt; 0)</td>
<td>(-) Employment growth</td>
<td>(+) Employment growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(+) Productivity growth</td>
<td>(-) Productivity growth</td>
</tr>
<tr>
<td></td>
<td>(0 \leq \varepsilon \leq 1)</td>
<td>(+) Employment growth</td>
<td>(-) Employment growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(+) Productivity growth</td>
<td>(-) Productivity growth</td>
</tr>
<tr>
<td></td>
<td>(\varepsilon &gt; 1)</td>
<td>(+) Employment growth</td>
<td>(-) Employment growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-) Productivity growth</td>
<td>(+) Productivity growth</td>
</tr>
</tbody>
</table>

Source: Kapsos, 2005, p 4

The above scenarios were established to allow the following interpretation:

- The top left block indicates that for countries with positive GDP growth, negative employment elasticities correspond with negative employment growth and positive productivity growth (Kapsos, 2005). For example, if an economy is growing at 4% per annum and has an employment elasticity of -0.4, the average rate of employment growth is roughly -0.16% with an average productivity rate of 4.16%, keeping in mind equation 6 above.

- The middle left box indicates that for economies with positive GDP growth, employment elasticities between zero and one correspond with positive employment growth; positive employment productivity growth and higher elasticities in this range correspond with more
employment-intensive and therefore less productivity-intensive growth (Kapsos, 2005). For example, an economy growing at 2% per annum with an employment elasticity of 0.6 experiences average annual employment growth of approximately 1.2% and average annual productivity growth of 0.8% - ∆Y = ∆E + ∆P → 2% = 1.2% + 0.8%. The middle left box has been established as representing the ideal scenario for economies wishing to increase employment and economic growth as job growth is occurring alongside productivity growth (Kapsos, 2005).

The lower left box illustrates that in economies with a positive GDP growth, elasticities greater than one correspond with positive employment growth and negative productivity growth (Kapsos, 2005). This was a key finding in the existing literature as the highest possible employment elasticity is the intuitively desired state. This framework indicates that for employment elasticities greater than one, employment growth is occurring at the expense of productivity which may result in an economy growing jobs but having a less productive workforce (Islam, 2004).

This view that an employment elasticity between 0 and 1 is ideal is further supported by findings indicating that the ideal employment elasticity of growth in a developing economy is 0.7, and that as these economies progress to upper middle-income status, they become more labour scarce (Khan, 2001). He further argued that economies with high incidences of poverty need employment elasticity that is relatively higher than which is required in less labour scarce economies (Khan, 2001). Given that South Africa exhibits high incidences of poverty and seeks to increase employment alongside growth, an employment elasticity of between 0 and 1 is ideal and desirable for the South African economy.

The employment elasticity framework has been utilised in the analysis of both sector and country level data. When applied to sectoral data in South Africa, the following employment-intensive sectors were identified: mining, construction, manufacturing and services (Mkhize, 2016). Research conducted by Mkhize further concluded that since most of these sectors are becoming increasingly capital intensive, sectoral growth cannot solely ensure employment growth in the sectors and the economy as a whole (Mkhize, 2016). When utilised in a cross-country analysis of 160 countries, the framework enabled the identification of macroeconomic determinants of employment elasticity of growth while taking into consideration the need for increased productivity (Kapsos, 2005).

Furthermore, while there has been extensive research regarding the factors that increase employment and GDP growth separately, there is limited research on the underlying macroeconomic factors that increase employment elasticity of growth across a large array of economies (Kapsos, 2005). Excluding Kapsos’s (2005) cross-country analysis of employment elasticities...
elasticiies from 1990-2003, research on employment elasticity of growth has been constrained to specific regions or countries. Pattanaik and Nayak (2014) assessed employment elasticities in India, Mazumdar (2003) assessed the employment elasticities of the manufacturing sector in East Asia and Saget (2000) examined employment elasticities in 11 economies in Central and Eastern Europe and Organisation for Economic Co-operation and Development (OECD) countries. This research aims to build on the cross-country analysis of Kapsos (2005) and thus contribute to the body of research that aims to determine the macroeconomic determinants of employment-intensive growth and provide insights regarding macroeconomic best practice for economies seeking to move towards employment-intensive growth.

Employment elasticities can be calculated using two approaches: the calculation of arc or point elasticities. The arc elasticity equation is given below:

$$\varepsilon = \frac{\Delta E}{E} \frac{\Delta Y}{Y}$$

where $\varepsilon$ denotes employment elasticity, $E$ is employment and $Y$ is output. While the above is relatively easy to compute, arc elasticity has been deemed an inappropriate measure of employment elasticity over time as the year-over-year elasticities exhibited extensive instability which limited the ability to conduct comparisons (Islam, 2004). Moreover, arc elasticities were unable to consider the effect of other variables that impact employment elasticity of growth, hence the resultant number suffered from omitted variable bias (Kapsos, 2005). The arc elasticity approach was also referred to as a descriptive approach to elasticities (Chowdhury & Tadjoeddin, 2012) due to the inability of the measure to provide broader insights about an economy or sub-sector under evaluation.

Alternatively, point elasticities were calculated by applying a regression analysis that suggested an explanatory relationship between employment and economic growth (Pattanaik & Nayak, 2014). The multivariate regression approach allowed the relationship between employment and economic growth to be tested and provided scope to test the relationship between employment elasticities and other variables (Chowdhury & Tadjoeddin, 2012). The below multivariate equation enabled point elasticities to be generated by allowing log GDP to interact with dummy variables $D$ for several countries in a cross-country analysis conducted by Kapsos (2005):

$$\ln E_i = \alpha + \beta_1 \ln Y_i + \beta_2 (\ln Y_i \ast D_i) + \beta_3 D_i + u$$
By differentiating both sides of equation (2) above, the elasticity of employment with respect to GDP in a given country was provided as \((\beta_1 + \beta_2)\) (Kapsos, 2005):

\[
\left( \frac{\partial E}{E} \right) = (\beta_1 + \beta_2) \left( \frac{\partial Y}{Y} \right) \rightarrow \frac{\partial E}{\partial Y} \left( \frac{Y}{E} \right) = (\beta_1 + \beta_2)
\]

(6)

Given that this research will not solely use employment elasticities to draw conclusions about economies, the arc elasticity method will be employed. This method is easily replicable and allows the reliability of the analysis to be easily assessed. Moreover, the requirements for improved living standards and reduced inequality in the employment-intensive, inclusive-growth economies will be assessed using other variables. These include population growth as compared to real GDP growth and the Gini Coefficient; this is a step towards ensuring that the research does not suffer from the omitted variable bias. The next section indicates an alternate method for gauging the link between employment – or conversely, unemployment - and economic/output growth.

2.2 Okun’s Law – unemployment and output growth

An alternate measure of the link between output growth and the rate of unemployment is Okun’s Law (Rahman & Mustafa, 2015). This law suggests a negative relationship between unemployment and output growth in that, for every percentage decline in unemployment there is a resultant increase in gross national product (GNP) of 3%, with empirical evidence showing that the relationship holds in the opposite direction as well (Pattanaik & Nayak, 2014). Okun’s Law received the status of empirical regularity and has been cited as a seminal study due to its application in dynamic economies (Pattanaik & Nayak, 2014). However, Okun as cited in Pattanaik & Nayak (2014) highlighted a shortcoming in the approach in that the relationship did not reveal the impact of changes in other aspects of the economy such as the labour force, increased productivity and longer working hours – all of which accompany employment growth and enable output growth.

Furthermore, the Okun coefficient was previously utilised to test the relationship between output and unemployment in a larger number of OECD countries, to find that a significant negative relationship existed (Chinn, et al., 2014). In addition, Okun coefficients were computed for G-7 countries with the results indicating that it is still valid in G-7 countries and that the link between growth and unemployment was stronger in the manufacturing sector than the overall economy (Padalino & Vivarelli, 1997). Although Okun’s law assumes that unemployment acts as the independent variable and GNP is a dependent variable, in vast empirical research the findings have been that the causality occurred in the opposite direction (Perugini & Signorelli, 2007). Stated differently, other empirical research found evidence that changes in output explain changes
in unemployment in a given economy (Perugini & Signorelli, 2007) and not in the other direction as the seminal research indicates.

More recent research has been conducted in 13 developed countries on the validity of Okun’s law, intending to test whether a 1% increase in GDP growth indeed results in a 3% decrease in unemployment (Rahman & Mustafa, 2015). The findings were that, although all 13 were advanced economies that were selected due to their importance in the global economy historically and exhibited high per capita real income, Okun’s Law was only valid for the USA and South Korea.

While Okun’s Law is a more established means of measuring the relationship between unemployment and growth, employment elasticity is for several reasons the preferred approach for this research. First and foremost, employment elasticities allow the measurement shortcomings that pertain to unemployment to be avoided (Pattanaik & Nayak, 2014). In addition, employment elasticities can be applied to many sub-groups in an economy including sectors, genders, geographical regions and age, which enables wider conclusions to be drawn from an assessment of these elasticities (Islam, 2004). Regardless of the shortcomings in Okun’s Law, the relationship between employment or unemployment and economic growth is a useful macroeconomic approach for determining the nature of growth in the economy, hence employment elasticity is the preferred measure for this research.

While measuring and achieving employment-intensive growth is critically important in the South African context, there is a need to ensure that this growth is inclusive and benefits the majority of the population. The following section will consequently discuss the prevailing literature regarding income inequality and why it is necessary to reduce income inequality along with unemployment reduction and increased growth.

2.3 Income inequality and poverty alleviation

The NDP highlights that in addition to reducing unemployment and increasing economic growth there is a need to “eliminate poverty and reduce inequality by 2030” (National Planning Commission, 2011, p 14). This is reinforced and informed by the fact that South Africa has one of the highest Gini-coefficients in the world – 0.69 in 2016 (World Bank, 2017) – thus, reduction of the Gini coefficient is one of the foremost requirements in the NDP (Wittenberg, 2017). Furthermore, Van der Berg (2011) found that even if poverty is reduced, inequality may not necessarily decline, thus, poverty alleviation and reduction of income inequality need to be given increased attention by policy makers.

While the overarching literature regarding the measures of income inequality is well established (Cowell, 2011; Deaton, 1997), Woolard, Leibbrandt and Daniels (2014) conducted research on
South Africa specially and found a slight growth in average real income between 2008 and 2010, but with a converse reduction in life satisfaction and expectations of future upward mobility. Wittenberg (2017) similarly found that regardless of the measure used, income inequality in South Africa has been increasing or has remained the same since for the period 1998 to 2010. The Kuznets Curve offers an alternative interpretation in that it suggests that as an economy improves, market forces result in inequality initially increasing and after reaching a tipping point beginning to decrease as economic development continues (Stern, 2003). While the latter provides a theoretically alternative view, all empirically-based research suggests that inequality in South Africa is increasing and needs to be reduced for the welfare of its inhabitants to improve.

2.4 Macroeconomic determinants of employment elasticity

While the literature regarding employment elasticity of growth is relatively limited, the literature regarding the macroeconomics determinants of employment elasticity is even scarcer (Pattanaik & Nayak, 2014). Most existing studies regarding employment elasticities have placed an emphasis on identifying the trends in employment elasticities (Kapsos, 2005), comparing elasticities of sub-sectors or regions (Mkhize, 2016), or identifying how employment elasticities for the same region compare for different time periods (Chowdhury & Tadjoeddin, 2012).

The below summarises the key macroeconomic factors that were tested in two research papers aiming to uncover the macroeconomic determinants of employment elasticity of growth. Kapsos (2005) conducted the only cross-county analysis of the employment elasticities of 160 countries for the period 1991 to 2003, whereas Pattanaik & Nayak (2014) analysed employment elasticities of 15 Indian states for the period 1994 to 2009. The below macroeconomic factors were tested using a multiple regression approach to establish the statically significant macroeconomic determinants of growth. While the underlying proxies utilised in the respective studies differed, the overarching variables were mostly the same as they were selected based on existing literature.

<table>
<thead>
<tr>
<th>Research</th>
<th>Kapsos, 2005</th>
<th>Pattanaik &amp; Nayak, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macroeconomic factor</strong></td>
<td>Measurement proxy</td>
<td></td>
</tr>
<tr>
<td>1. Labour supply/demographics</td>
<td>Average annual growth in working age population</td>
<td>Labour force participation rate</td>
</tr>
<tr>
<td>2. Economic Structure</td>
<td>Share of employment in services</td>
<td>Share of total employment in secondary sector</td>
</tr>
<tr>
<td></td>
<td>Share of employment in industry</td>
<td>Share of total employment in tertiary sector</td>
</tr>
<tr>
<td></td>
<td>Gender gap in labour force participation</td>
<td></td>
</tr>
</tbody>
</table>
Labour supply, economic structure, macroeconomic uncertainty and labour productivity were statistically significant at the 1% level; health was statistically significant at the 5% level and tax policy and labour regulation were statistically significant at the 10% level in relation to employment elasticity (Kapsos, 2005; Pattanaik & Nayak, 2014).

Labour supply was statistically significant in both studies and the proxies’ average annual growth in working age population and labour force participation rate had a strong, positive relationship with employment elasticity (Kapsos, 2005; Pattanaik & Nayak, 2014).

In addition to finding that economic structure was statically significant, Pattanaik and Nayak (2014) found the share of total employment in the secondary sector and the share of total employment in the tertiary sector to be strong, explanatory variables for an improvement in elasticity, which was reinforced by the findings of Kapsos (2005) which indicated that an increase in the share of total employment in the services sector of 10% results in a 0.06 increase in employment elasticity (Kapsos, 2005).

While in Pattanaik & Nayak’s (2014) research, macroeconomic uncertainty was found to have a strong, inverse relationship with employment elasticity when using the inflation proxy, Kapsos (2005) found that the impact is only economically significant at very high inflation rates as this impacts employment as well as economic growth outcomes. In Pattanaik and Nayak’s (2014) study, inflation rates were also found to have a negative relationship with employment elasticity which supported the prevalence of the sand effect. In addition, the conflict indicator was found to be significant as an economy with conflict during the 1990-2003 period was found to have – all else being equal – an employment elasticity that was 0.16 lower than that of a country with no conflict (Kapsos, 2005).
In terms of health/human capital, the findings differed slightly in that malaria deaths were found not to be statistically significant in relation to employment elasticities (Kapsos, 2005), whereas literacy rates and life expectancy rates were statistically significant in relation to employment with an increase in these rates ensuring high employment intensity of growth (Pattanaik & Nayak, 2014).

Labour productivity was only tested in the Pattanaik and Nayak (2014) study and was statistically significant at a 1% level. Their findings indicated a negative relationship with employment elasticity of growth and confirmed Keynesian fundamentals as a result (Pattanaik & Nayak, 2014). Lastly, rigidity of employment showed no statistical significance, whereas the individual tax rate was significant at a 5% level and was found to be negatively related to employment elasticity of growth with a 10% increase in individual tax rates resulting in a decrease in employment elasticity of growth of 0.08 (Kapsos, 2005).

While the literature has established that the macroeconomic factors mentioned above are statistically significant variables that influence employment elasticity, this research aims to see whether the employment and economic growth initiatives in the NDP are likely to be macroeconomic determinants of employment elasticity and, ultimately, employment-intensive, inclusive growth. These initiatives were included in the South African NDP in the hopes that they would lead to reduced unemployment and increased economic growth with the ultimate aim of poverty reduction by 2030. The following section will highlight these initiatives and discuss the existing literature regarding the NDP.

2.5 The National Development Plan employment and growth initiatives

The NDP provides a strategic framework for the South African economy and outlines various goals that, if achieved, will enable the realisation of Vision 2030 (National Planning Commission, 2011). There exists extensive literature suggesting that the NDP policies are unlikely to be implemented due to poor co-ordination amongst institutional actors (Naidoo & Mare, 2015). Other literature has conversely suggested that the failure of implementation will also result from a fundamental flaw in the development of the NDP in that it fails to address the enabling factors for achievement of the plan and ignores the role of the rural economy, which is a critical factor as traditional leadership still plays a key role in the South African context (Chilenga, 2017).

A limited set of research has reverted to assessing whether the initiatives themselves are robust enough to achieve the goals set out in the NDP. Considering these three research groupings, this
research assessed the NDP initiatives in the context of employment-intensive, inclusive growth in an attempt to determine whether achievement of the Vision 2030 goals is likely.

Furthermore, whereas the NDP provides a number of goals and initiatives pertaining to infrastructure, reduced carbon emission, education, health and many other issues, this research will focus on employment and growth initiatives aiming to address the elimination of poverty and reduction of inequality which, according to the NDP, can only be achieved if the economy...becomes more inclusive and grows faster (National Planning Commission, 2011).

These specific growth and employment initiatives include:

*Table 2 NDP growth and employment initiatives and their measurement proxies*

<table>
<thead>
<tr>
<th>NDP growth and employment initiatives</th>
<th>Summarised initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Raise exports, focusing on those areas where South Africa already has the endowments and comparative advantage such as mining, construction, mid-skill manufacturing, agriculture and agro-processing, tourism, and business services</td>
<td>Increase exports</td>
</tr>
<tr>
<td>2. Increase the size and effectiveness of the innovation system, and ensure closer alignment with companies that operate in sectors consistent with the growth strategy</td>
<td>Increase innovation</td>
</tr>
<tr>
<td>3. Improve the functioning of the labour market to help the economy absorb more labour through reforms and specific proposals concerning dispute resolution and discipline</td>
<td>Improved labour dispute resolution practices</td>
</tr>
<tr>
<td>4. Support small businesses through better coordination of activities in small business agencies, development finance institutions, and public and private incubators</td>
<td>Increase investment and support of small businesses</td>
</tr>
<tr>
<td>5. Improve the skills base through better education and vocational training.</td>
<td>Increase skills development</td>
</tr>
<tr>
<td>6. Increase investment in social and economic infrastructure to lower costs, raise productivity and bring more people into the mainstream of the economy</td>
<td>Increase investment in economic infrastructure</td>
</tr>
<tr>
<td>7. Reduce the regulatory burden in sectors where the private sector is the main investor, such as broadband Internet connectivity, to achieve greater capacity and lower prices</td>
<td>Reduce regulatory burden for businesses in private sector</td>
</tr>
<tr>
<td>8. Improve the capacity of the state to effectively implement economic policy</td>
<td>Improve implementation of economic policy</td>
</tr>
<tr>
<td>9. Increase trust between labour, government and business</td>
<td>Improve trust – labour, government and business</td>
</tr>
</tbody>
</table>

While existing literature does point to various macroeconomic determinants of employment elasticity of growth and provides commentary on the likelihood of implementation of NDP initiatives, there is a need to research how robust the initiatives are in the first place. This will be explored in this research by establishing economies that have managed to attain employment-intensive, inclusive growth, and by testing how prevalent the NDP initiatives are in these economies versus those in the rest of the world. The following section will outline the research hypothesis and methodology employed in this research.
3 METHODOLOGY AND DATA

3.1 Research hypothesis

In light of the above literature indicating which factors influence employment-intensive growth as well as the NDP employment and economic growth initiatives, the overarching research hypothesis is as follows:

H₀: The following employment and economic growth initiatives in the NDP do not lead to employment-intensive, inclusive economic growth
H₁: The following employment and economic growth initiatives in the NDP lead to employment-intensive, inclusive economic growth

Stated for each NDP initiative in turn:

1. H₀: Increased exports does not lead to employment intensive, inclusive economic growth
   H₁: Increased exports leads to employment intensive, inclusive economic growth

2. H₀: Increased innovation does not lead to employment intensive, inclusive economic growth
   H₁: Increased innovation leads to employment intensive, inclusive economic growth

3. H₀: Improved labour dispute resolution practices do not lead to employment intensive, inclusive economic growth
   H₁: Improved labour dispute resolution practices lead to employment intensive, inclusive economic growth

4. H₀: Increased investment and support of small businesses does not lead to employment intensive, inclusive economic growth
   H₁: Increased investment and support of small businesses leads to employment intensive, inclusive economic growth

5. H₀: Increased skills development does not lead to employment intensive, inclusive economic growth
   H₁: Increased skills development leads to employment intensive, inclusive economic growth

6. H₀: Increased investment in economic infrastructure does not lead to employment intensive, inclusive economic growth
   H₁: Increased investment in economic infrastructure leads to employment intensive, inclusive economic growth

7. H₀: Reduced regulation in private sector does not lead to employment intensive, inclusive economic growth
   H₁: Reduced regulation in private sector leads to employment intensive, inclusive economic growth

8. H₀: Improved implementation of economic policy does not lead to employment intensive, inclusive economic growth
   H₁: Improved implementation of economic policy leads to employment intensive, inclusive economic growth
9. **H₀**: Improved trust does not lead to employment intensive, inclusive economic growth  
**H₁**: Improved trust leads to employment intensive, inclusive economic growth

In order to answer the central research question regarding the likelihood of NDP employment and economic growth initiatives to achieve the targets set for Vision 2030, the analysis was conducted in two parts. The first part involved an analysis of secondary world economic data, including the size of the population, real GDP growth, employment growth, Gini coefficient and computation of employment elasticities, to arrive at a list of countries that exhibited ideal levels for each indicator. This list of countries evidenced that they had managed to attain employment-intensive, inclusive growth and are therefore in this research referred to as inclusive-growth countries. The second part of the analysis involved the development of a scorecard built from NDP economic growth and employment factors to test the prevalence of these factors within the inclusive-growth countries. This involved comparing the prevalence of the NDPs’ economic growth and employment initiatives in employment-intensive, inclusive-growth countries versus countries of the rest of the world.

### 3.2 Analysis approach

For the first part of the analysis, a quantitative, deductive, descriptive approach was used. As the data included each selected country’s population, employment, real GDP and Gini Coefficients, a quantitative approach seemed more suitable. This part of the analysis was an empirical economic study and, as a result, quantitative in nature. For the second part of the analysis a quantitative, deductive, explanatory approach was deemed appropriate to test the prevalence of various macroeconomic NDP factors in countries exhibiting employment-intensive, inclusive-growth.

For the first part of the analysis, the concepts and representative data analysed were well defined by existing literature regarding employment-intensive, inclusive growth, therefore a deductive, quantitative approach was appropriate (Saunders & Lewis, 2012). Furthermore, the approach is deemed as descriptive as it involved an analysis of secondary data and sought to explain that a phenomenon was occurring as a first step in the overall analysis (Saunders & Lewis, 2012).

For the second part of the analysis, a deductive, quantitative approach was also appropriate as the concepts emerged from established literature regarding employment and growth initiatives in the NDP as well as the macroeconomic determinants of employment-intensive growth (Saunders & Lewis, 2012). An explanatory approach was appropriate at this stage as the analysis sought to assess the causal links between the various initiatives and macroeconomic variables and employment elasticities (Zikmund, et al., 2010).
3.3 Population

The population included all countries in the world per the World Bank’s definition of countries, where countries are defined as “territories in which authorities report separate social or economic statistics” (World Bank, 2017). This definition of the population was preferred as it was a broader definition and accounted for the fact that even within the defines of political independence, differing social and economic phenomena may occur, as opposed to defining countries based on political independence. This definition resulted in a list of 218 countries that included 189 World Bank member countries.

3.4 Unit of analysis

The unit of analysis is the group of inclusive-growth countries that exhibited the following features for the period 1991 to 2016:

- an average population of more than 10 million for the period
- have demonstrated improved living standards through average real growth rate exceeding the average population growth
- an employment elasticity of growth between 0 and 1
- a lower Gini-coefficient in 2016 compared to 1991 or the earliest period where a Gini coefficient was available.

3.5 Sampling

Utilising a population of countries per the World Bank list of countries allowed the entire population to be included in the study. The population included 218 countries as a point of departure and series of filters were applied to arrive at the unit of analysis.

The first filter was that the average population for the period 1991 to 2016 should exceed 10 million to ensure validity in the interpretation of the results. Economies with an average population of less than 10 million may have features that are desirable, however, the results would not necessarily be generalisable given the economy’s size, and a comparison with a country with a significantly larger population would not be a “like for like” comparison. This filter resulted in the list of countries being reduced from 218 to 79.

The second filter related to the need to improve living standards. The requirement for improved living standards stemmed from the literature which found that increased economic growth does not necessarily translate into improved living standard for an economy's inhabitants (Esposito, et al., 2017). Ensuring that the living standards were gauged over the period was the first step towards assessing whether the economic growth practically improved the lives of individuals.
This requirement also directly links to the NDPs goal to “eliminate poverty...by 2030” (National Planning Commission, 2011, p 5) and resulted in the list of countries being reduced from 79 to 57.

The third filter that was applied related to the need for a country’s employment elasticity to be between 0 and 1, which indicates economic growth that is employment intensive. This employment elasticity framework was previously utilised in a number of studies that sought to determine the macroeconomic variables that lead to increased employment (Pattanaik & Nayak, 2014), a study that sought to understand which sectors in the South African economy was employment intensive (Mkhize, 2016), and a study that assessed the relationship between labour market institutions and employment elasticity of growth (Flaig & Rottmann, 2009). This is directly aligned to the NDP’s priority of “raising employment through faster economic growth” (Chilenga, 2017, p 92) and resulted in the number of countries being reduced from 57 to 49.

The fourth filter related to income inequality and sought to determine whether the country was financially more inclusive at the end of period than at the beginning. This was determined by assessing whether the Gini coefficient was lower at the end of the period than at the start. The literature indicated that a Gini coefficient of 1 indicated total income inequality (exclusion) whereas a Gini coefficient of 0 indicated total income equality (inclusion) (Wittenberg, 2017). While there are various methods for measuring inequality including the Gini Index, the Atkinson Group of Indices and the Theil Index (Wittenberg, 2017); this research utilised the Gini coefficient as the measure of income equality for all countries under analysis. The Gini coefficient was chosen as it was readily available for the period for a wide range of economies and thus increased the reliability of the results due to the coefficient being calculated consistently for each country and being comparable as a result. Unsurprisingly, this filter had the greatest impact and resulted in the list of countries being reduced from 49 to 7.

The above filters allowed the unit of analysis to be narrowed down to a list of countries that have achieved employment-intensive, inclusive growth. The following section will highlight the research instrument that was utilised to test the hypothesis that the employment and growth initiatives in the South African NDP are likely to achieve the Vision 2030 goals and lead to employment-intensive, inclusive growth.

3.6 Development of the Inclusive Growth scorecard

The measurement tool that was utilised was a scorecard that enabled a comparison between the various employment and growth NDP initiatives in the inclusive-growth economies and those in the rest of the world. The below table indicates the NDP growth and employment initiatives, the relevant measurement proxy and the source of the measurement proxy:
Table 3 NDP growth and employment initiative, measurement proxy and source

<table>
<thead>
<tr>
<th>Summarised initiatives</th>
<th>Measurement proxy</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase exports</td>
<td>Increased Exports (%GDP)</td>
<td>World Bank Database</td>
</tr>
<tr>
<td>Increase innovation</td>
<td>Increase capacity for innovation</td>
<td>World Economic Forum Global Competitiveness Report</td>
</tr>
<tr>
<td>Improved labour dispute resolution practices</td>
<td>Improve labour dispute resolution ranking</td>
<td>World Economic Forum Global Competitiveness Report</td>
</tr>
<tr>
<td>Increased investment and support of small businesses</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Increase skills development</td>
<td>Improve education ranking</td>
<td>World Economic Forum Competitiveness Report</td>
</tr>
<tr>
<td>Increase investment in economic infrastructure</td>
<td>Increase quality of infrastructure</td>
<td>World Economic Forum Global Competitiveness Report</td>
</tr>
<tr>
<td>Reduce regulation in private sector</td>
<td>Improve distance to frontier (DTF) score</td>
<td>Doing Business Index</td>
</tr>
<tr>
<td>Improve implementation of economic policy</td>
<td>Reduced wastefulness of government spending</td>
<td>World Economic Forum Global Competitiveness Report</td>
</tr>
<tr>
<td>Improved trust – labour, government and business</td>
<td>Increased self-reported trust score</td>
<td>Our World in Data – Trust</td>
</tr>
</tbody>
</table>

The above initiatives and measurement proxies were captured in the scorecard and the prevalence of each factor in each inclusive-growth country was indicated in the scorecard. The prevalence of the factor in the inclusive-growth countries as compared to those in the rest of the world was then captured in percentage terms to indicate the proportion of inclusive-growth economies versus non-inclusive-growth economies where the macroeconomic factor/initiative was present. If the proportion was higher in inclusive-growth countries than in non-inclusive-growth economies, the research indicated that the factor was likely to lead to sustained, elevated, employment-intensive growth as it was more prevalent in the inclusive-growth economies than the control group, the non-inclusive-growth economies. If the opposite were true, that is, if the factor were equally or more prevalent in the non-inclusive-growth countries, the factor would be unlikely to lead to sustained, elevated, employment-intensive growth.

3.7 Data Collection

The data for the initial part of the analysis – each country’s population, real GDP growth and Gini Coefficient data – were collected from the World Bank Database. Where real GDP data were missing for the period, the BMI Research database was utilised and where that was not sufficient, the country in question's national statistics website was consulted. If none of the above
approaches resulted in information, the country was excluded from the analysis. For employment data, the World Bank and International Labour Organisation (ILO) databases were utilised. As both databases provided an indication of the underlying data sources from where the data points were retrieved, they were deemed more reliable than the alternative databases (Zikmund, et al., 2010). Both databases were deemed as the most comprehensive sources of employment data, with the ILO confirming that employment data at a macro level were not available for the period prior to 1991.

For the scorecard itself, the underlying data for each measurement proxy were collected from various sources. Per the table above, these included the:

- World Bank Database
- World Economic Forum – Global Competitiveness Report
- Doing Business Index
- Our World in Data

The above data sources were all chosen because they, together with the underlying sources, were reliable and verifiable. Each of the measurement proxies had data for at least 10 years and at most for the entire period, and where the data did not cover the entire period, inferences could still be drawn regarding the direction of the trend. For the majority of the NDP employment and growth initiatives, the goal is to improve in each initiative by either increasing or decreasing the occurrence of the measurement proxy. Consequently, although not always exactly for the period under analysis, the data were sufficient to be included in the research to indicate whether the measure had increased or decreased. For example, the “increase exports” goal was measured by assessing whether exports as a % GDP had increased from 1991 to 2016, whereas “reduce the regulatory burden in the private sector” goal was evidenced by an increase and improved distance to frontier (DTF) score. The DTF score provides a way of assessing the level of absolute regulatory performance over time (Doing Business, 2017).

3.8 Data analysis

The decision to utilise a scorecard in this analysis largely stemmed from the proven use of index/scorecards in other research that compared the performance of various economies. The World Economic Forum's (WEF) Global Competitiveness Report (GCR) measures 110 variables in 142 countries and develops an annual scorecard that indicates the overall competitiveness of the economies and each economy’s ability to provide prosperity to its inhabitants (Schwab, et al., 2016). The WEF GCR has been developed annually since 2006 and can as a result provide insights into the performance of the economies (Schwab, et al., 2016). Other economic indices include The Index of Economic Independence which gauges an economy’s immunity to economic risk in 112
countries (Helmy, 2017), *The Data Quality Index: World Economics* which measured the quality of GDP data in 154 countries (World Economics, 2017) as well as *The GIBS Dynamic Market Index* which sought to determine the enablers of market dynamism by assessing the performance of six institutional pillars in 144 countries.

This research converges with the above in that nine specific macroeconomic factors were identified for analysis, and they will be tested over time. In addition, this research assessed these factors across many countries – seven inclusive-growth countries and 71 non-inclusive-growth countries – so the approach is aligned with established methods in that respect. Where the approach diverges from the above is that this approach did not seek to develop an index and measure the performance from a base of zero; instead, the measurement parameter was whether the NDP factor was more evident in the inclusive-growth economies than the non-inclusive-growth economies. This was a deliberate decision, as the aim of this research was to determine whether there was evidence from other economies that South Africa’s NDP initiatives would lead to success; it did not aim to measure how the NDP factors have performed over time in said economies.

This was the reasoning behind the decision not to employ a multiple regression analysis to test the strength of the relationship between the independent variables – nine NDP factors – and the dependent variable – employment-intensive, inclusive growth. While multiple regression is a more statistically established method, it will not address whether or not the factor has been successful in other economies and will instead give insights into the strength of the relationship with employment elasticity, which is not appropriate for this research.

### 3.9 Limitations

The key limitations of the research stem from shortcomings in the data. This research would have been more significant if conducted over a longer period of time, for example, since 1960, as this was the starting point for GDP data availability for most counties. However, employment data was only available from 1991 to 2016 and for certain countries there were gaps in the real GDP data that resulted in the countries being omitted from the analysis. Alternative databases such as the BMI were consulted as well as the country specific websites (where available) prior to removing the countries from the list. From a real GDP perspective, data were available for most countries from 1960 to 2016, however, this was not consistent across all economies. As a result, the population became all countries in the world where the GDP and employment data from 1991 to 2014 were available.
All scorecard data drawn from the WEF GCR were available from 2006, except for the “Labour dispute resolution” data which were only available from 2009 as the scorecard developed to include more indicators. The Ease of Doing Business “Distance to Frontier” data were only available from 2004 and the data pertaining to “Self-Reported Trust” were available from 1993 to 2014. The only NDP initiative that could not be assessed was the Increase investment in small business” as there was no clear secondary data source that indicated the amount of investment toward small business/small and medium enterprises or even entrepreneurs in the 78 economies under analysis.

The results of the scorecard are summarised in the table on the next page.
## RESULTS

*Table 4 Employment-intensive, inclusive-growth scorecard*

<table>
<thead>
<tr>
<th>Factor</th>
<th>MP-IGEs</th>
<th>Employment-intensive, inclusive-growth economies</th>
<th>No. of IGEs with factor</th>
<th>% of IGEs with factor</th>
<th>No. of OEs with factor</th>
<th>% of OEs with factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y/N</td>
<td>BE</td>
<td>BR</td>
<td>CN</td>
<td>PH</td>
<td>TH</td>
</tr>
<tr>
<td>1</td>
<td>Increase exports</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>2</td>
<td>Increase innovation</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>3</td>
<td>Improve labour dispute resolution practices</td>
<td>Y</td>
<td>n</td>
<td>y</td>
<td>y</td>
<td>n</td>
</tr>
<tr>
<td>4</td>
<td>Increase investment and support of small businesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Increase skills development</td>
<td>Y</td>
<td>n</td>
<td>y</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>6</td>
<td>Increase investment in economic infrastructure</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>7</td>
<td>Reduce regulatory burden for businesses in private sector</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>8</td>
<td>Improve implementation of economic policy</td>
<td>N</td>
<td>y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>9</td>
<td>Improved trust – labour, government and business</td>
<td>N</td>
<td>y</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
</tbody>
</table>
The results indicate that the factors that were more evident in inclusive-growth countries as compared to non-inclusive-growth countries include:

- Increase exports (71% vs 68%)
- Increase innovation (57% vs 48%)
- Improve labour dispute resolution practices (43% vs 41%)
- Increase skills development (43% vs 32%)
- Increase investment in economic infrastructure (29% vs 21%)
- Reduce regulatory burden for businesses in private sector (100% vs 97%)

The results indicate that the factors that were more evident in non-inclusive-growth countries as compared to the inclusive-growth countries include:

- Improve implementation of economic policy (57% vs 67%)
- Improve trust – labour, government and business (40% vs 57%)

As result, the hypotheses are accepted and rejected as follows:

H₀: The following employment and economic growth initiatives in the NDP do not lead to employment-intensive, inclusive economic growth

H₁: The following employment and economic growth initiatives in the NDP lead to employment-intensive, inclusive economic growth

<table>
<thead>
<tr>
<th>Hypothesis number</th>
<th>Employment and economic growth initiatives</th>
<th>Accept or reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Increase exports</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>2</td>
<td>Increase innovation</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>3</td>
<td>Improve labour dispute resolution practices</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>4</td>
<td>Increase investment and support of small businesses</td>
<td>n/a</td>
</tr>
<tr>
<td>5</td>
<td>Increase skills development</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>6</td>
<td>Increase investment in economic infrastructure</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>7</td>
<td>Reduce regulation in private sector</td>
<td>Reject H₀</td>
</tr>
<tr>
<td>8</td>
<td>Improve implementation of economic policy</td>
<td>Accept H₀</td>
</tr>
<tr>
<td>9</td>
<td>Improve trust</td>
<td>Accept H₀</td>
</tr>
</tbody>
</table>

5 DISCUSSION AND CONCLUSION

The research sought to determine whether South Africa’s NDP economic growth and employment initiatives are sufficiently robust to achieve the employment, growth, poverty reduction and
inclusion goals outlined in Vision 2030. This was achieved in two parts: firstly, by identifying a
group of countries that have managed to achieve employment-intensive, inclusive growth.
Secondly, by analysing these countries for prevalence of the NDP factors and establishing that six
of the NDP initiatives more prevalent in inclusive-growth countries whereas two were more
prevalent in ‘non-inclusive’ countries. Hypotheses 1, 2, 3, 5, 6 and 7 were consequently rejected
and the alternate hypothesis was accepted namely that increasing exports, increasing innovation,
 Improved labour dispute resolution practices, increased skills development and reduced
 regulation in the private sector lead to employment-intensive, inclusive economic growth.
 Conversely, Hypotheses 8 and 9 were accepted as it was found that improved implementation of
 economic policy and improved trust do not lead to employment-intensive, inclusive economic
growth.

These results allow the robustness of the policy to be commented on in that they present evidence
from varying economies that six of the NDP’s initiatives are sufficiently robust to achieve
employment-intensive, inclusive growth and take a step towards increasing employment from 13
million in 2010 to 24 million in 2030, increasing real economic growth, and reducing poverty and
inequality in South Africa as part of a plan to overhaul the economy and realise Vision 2030. This
research contributes to NDP literature by not focusing on whether or not the NDP will be correctly
implemented per the research of Naidoo & Mare (2015) and Chilenge (2016), but instead
assessing the robustness of the policy initiatives themselves. While both considerations are
necessary to realise the results promised in the NDP, this research deemed it important to
determine whether there was empirical evidence of success in economies with desirable features.

Policy initiatives 1, 2, 3, 5 and 6 were all found to be more prevalent in the inclusive-growth
economies as compared to the rest of the world, leading to the conclusion that they are evident
in economies that exhibit employment-intensive, inclusive growth. Interestingly, none of these
initiatives were indicated as macroeconomic factors that lead to employment-intensive growth
in either Kapsos’s cross-country analysis (2005) or Puttanaik & Nayak’s analysis of 15 Indian
States (2014). This research is the first contribution to the existing literature regarding
macroeconomic determinants of employment-intensive growth in identifying economies that
exhibited the ideal level of employment-intensive growth – elasticity between 0 and 1 – and
then testing whether other macroeconomic factors not presented by literature were also
evident. This research has found that increasing exports, increasing innovation, improved
labour dispute resolution practices, increased skills development and reduced regulation in the
private sector are more evident in countries that have achieved employment-intensive growth.
The results also provide insight into the rare occurrence of economies that are experiencing growth that is employment intensive, inclusive and improving living standards for its inhabitants. Literature demonstrated that countries should strive to achieve an employment elasticity of between zero and one as this ensures that economic growth is not occurring at the expense of employment growth while also ensuring that productivity in the economy does not suffer (Kapsos, 2005; Khan, 2001). This level of employment elasticity is particularly relevant for economies seeking to alleviate poverty and reduce inequality, and this research provides insight into which economies have managed to achieve this including Belgium, Brazil, Chile, Philippines, Thailand, Turkey and Zambia.

This research contributes to Development Economics literature in that there is a need to measure the performance of economies not solely based on real economic growth but with other measures as well, as real GDP growth does not always improve the lives of inhabitants (Esposito, et al., 2017). This research provides insights into how to achieve growth that is both inclusive and employment intensive while demonstrably improving the life of inhabitants within the economy.

In terms of future research, the analysis could be expanded to test the robustness of the other NDP policies on infrastructure, reduced carbon emission and education, and to determine whether there is evidence of success of those initiatives in other economies. In addition, if an appropriate measure could be developed to gauge the amount of investment in small businesses, thought-provoking conclusions could be drawn regarding the entire body of policy initiatives.
6 REFERENCES


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Chapter 2: Literature review

The review below explores why ‘employment intensive, inclusive growth’ is the desired type of growth for South Africa in the context of the NDP. It also demonstrates what literature to date has determined regarding the elements that underpin this type of growth and why various measures were deemed appropriate for this research in particular.

2.1 Employment Elasticity – employment and economic growth

Employment elasticity of growth (also referred to as employment intensity) is a numerical measure of how employment changes with a one per cent increase in gross domestic product (GDP). While not commonly utilised, employment elasticities can provide insights into an economy’s ability to create sufficient employment opportunities for its inhabitants and indicate the extent to which employment and GDP move together (Kapsos, 2005). Employment elasticities also allow the employment intensity of an economy to be analysed as they provide insights into the extent of employment-intensive growth as opposed to productivity-intensive growth which is largely driven by higher productivity in an economy (Crivelli, et al., 2012).

Employment elasticity of growth provides a basis for determining the relationship between employment growth and GDP growth and provides a means to measure how employment-intensive GDP growth is for a given economy, sector or group (OECD, ILO & World Bank, 2015). Since this research aims to address the problem of growing employment while growing the economy in South Africa, employment elasticity of growth is an appropriate basis for conducting the research.

While striving to increase employment and grow the economy in an employment-intensive manner, focus needs to remain on ensuring that this is accompanied by increased economic productivity. This is particularly important for economies such as South Africa that have been categorised by jobless growth, as jobless growth is often accompanied by an under-employment of people in low productivity jobs (Stuart, 2011) which negatively impacts the economy’s ability to grow in a sustainable manner (Davie, 2015). Since developing economies tend to be categorised by large, surplus labour forces, particular attention should be paid to increasing productivity in activities that will absorb large proportions of the labour force (Stuart, 2011).
In light of the above, it is important to highlight the following arithmetic identity where $Y$ denotes output, $E$ denotes employment and $P$ denotes productivity (output per worker) (Kapsos, 2005):

$$Y = E \times P$$  \hspace{1cm} (1)

Equation 1 indicates that for changes in output, the below relationship holds:

$$\Delta Y = \Delta E + \Delta P$$  \hspace{1cm} (2)

Equation (2) indicates that for a given amount of output growth ($\Delta Y$) an increase in the rate of employment must be met by an increase in productivity, which allows conclusions about elasticity to be drawn alongside conclusions regarding productivity. As a result, dividing both sides of the above equation by $Y$ allows the below to emerge:

$$\varepsilon = 1 - \frac{\Delta P}{\Delta Y}, \text{where } \varepsilon = \frac{\Delta E}{\Delta Y}$$  \hspace{1cm} (3)

Using equation 6, various elasticity scenarios can be interpreted in the context of positive and negative GDP growth. A summary of these relationship is provided below:

**Table 1 Interpreting employment elasticities**

<table>
<thead>
<tr>
<th>GDP Growth</th>
<th>Positive GDP growth</th>
<th>Negative GDP growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment elasticity</td>
<td>- Employment growth (+) Productivity growth</td>
<td>(+) Employment growth (-) Productivity growth</td>
</tr>
<tr>
<td>$\varepsilon &lt; 0$</td>
<td>0 ≤ $\varepsilon \leq 1$</td>
<td>$\varepsilon &gt; 1$</td>
</tr>
<tr>
<td>$\varepsilon &gt; 1$</td>
<td>(+) Employment growth (-) Productivity growth</td>
<td>(+) Productivity growth</td>
</tr>
</tbody>
</table>

Source: Kapsos, 2005, p 4

- The top left block indicates that for countries with positive GDP growth, negative employment elasticities correspond with negative employment growth and positive productivity growth (Kapsos, 2005). For example, if an economy is growing at 4% per annum and has an employment elasticity of
-0.4, the average rate of employment growth is roughly -0.16% with an average productivity rate of 4.16%, keeping in mind equation 6 above.

- The middle left box indicates that for economies with positive GDP growth, employment elasticities between zero and one correspond with positive employment growth; positive employment productivity growth and higher elasticities in this range correspond with more employment-intensive and therefore less productivity-intensive growth (Kapsos, 2005). For example, an economy growing at 2% per annum with an employment elasticity of 0.6 experiences average annual employment growth of approximately 1.2% and average annual productivity growth of 0.8% - \( \Delta Y = \Delta E + \Delta P \rightarrow 2\% = 1.2\% + 0.8\% \). The middle left box has been established as representing the ideal scenario for economies wishing to increase employment and economic growth as job growth is occurring alongside productivity growth (Kapsos, 2005).

- The lower left box illustrates that in economies with a positive GDP growth, elasticities greater than one correspond with positive employment growth and negative productivity growth (Kapsos, 2005). This was a key finding in the existing literature as the highest possible employment elasticity is the intuitively desired state. This framework indicates that for employment elasticities greater than one, employment growth is occurring at the expense of productivity which may result in an economy growing jobs but having a less productive workforce (Islam, 2004).

This view that an employment elasticity between 0 and 1 is ideal is further supported by findings indicating that the ideal employment elasticity of growth in a developing economy is 0.7, and that as these economies progress to upper middle-income status, they become more labour scarce (Khan, 2001). He further argued that economies with high incidences of poverty need employment elasticity that is relatively higher than which is required in less labour scarce economies (Khan, 2001). Given that South Africa exhibits high incidences of poverty and seeks to increase employment alongside growth, an employment elasticity of between 0 and 1 is ideal and desirable for the South African economy.
The employment elasticity framework has been utilised in the analysis of both sector and country level data. When applied to sectoral data in South Africa, the following employment-intensive sectors were identified: mining, construction, manufacturing and services (Mkhize, 2016). Research conducted by Mkhize further concluded that since most of these sectors are becoming increasingly capital intensive, sectoral growth cannot solely ensure employment growth in the sectors and the economy as a whole (Mkhize, 2016). When utilised in a cross-country analysis of 160 countries, the framework enabled the identification of macroeconomic determinants of employment elasticity of growth while taking into consideration the need for increased productivity (Kapsos, 2005).

Furthermore, while there has been extensive research regarding the factors that increase employment and GDP growth separately, there is limited research on the underlying macroeconomic factors that increase employment elasticity of growth across a large array of economies (Kapsos, 2005). Excluding Kapsos’s (2005) cross-country analysis of employment elasticities from 1990-2003, research on employment elasticity of growth has been constrained to specific regions or countries. Pattanaik and Nayak (2014) assessed employment elasticities in India, Mazumdar (2003) assessed the employment elasticities of the manufacturing sector in East Asia and Saget (2000) examined employment elasticities in 11 economies in Central and Eastern Europe and Organisation for Economic Co-operation and Development (OECD) countries. This research aims to build on the cross-country analysis of Kapsos (2005) and thus contribute to the body of research that aims to determine the macroeconomic determinants of employment-intensive growth and provide insights regarding macroeconomic best practice for economies seeking to move towards employment-intensive growth.

2.2 Calculating employment elasticities

Employment elasticities can be calculated using two approaches: the calculation of arc or point elasticities. The arc elasticity equation is given below:

\[ \varepsilon = \frac{\Delta E/E}{\Delta Y/Y} \]  

(4)

where \( \varepsilon \) denotes employment elasticity, \( E \) is employment and \( Y \) is output. While the above is relatively easy to compute, arc elasticity has been deemed an inappropriate measure of employment elasticity over time as the year-over-year elasticities exhibited extensive
instability which limited the ability to conduct comparisons (Islam, 2004). Moreover, arc 
elasticities were unable to consider the effect of other variables that impact employment 
elasticity of growth, hence the resultant number suffered from omitted variable bias 
(Kapsos, 2005). The arc elasticity approach was also referred to as a descriptive approach 
to elasticities (Chowdhury & Tadjoeddin, 2012) due to the inability of the measure to 
provide broader insights about an economy or sub-sector under evaluation.

Alternatively, point elasticities were calculated by applying a regression analysis that 
suggested an explanatory relationship between employment and economic growth 
(Pattanaik & Nayak, 2014). The multivariate regression approach allowed the relationship 
between employment and economic growth to be tested and provided scope to test the 
relationship between employment elasticities and other variables (Chowdhury & 
Tadjoeddin, 2012). The below multivariate equation enabled point elasticities to be 
generated by allowing log GDP to interact with dummy variables D for several countries in 
a cross-country analysis conducted by Kapsos (2005):

\[
\ln E_i = \alpha + \beta_1 \ln Y_i + \beta_2 (\ln Y_i \times D_i) + \beta_3 D_i + u
\]  

(5)

By differentiating both sides of equation (2) above, the elasticity of employment with 
respect to GDP in a given country was provided as \((\beta_1 + \beta_2)\) (Kapsos, 2005):

\[
\left( \frac{\partial E}{\partial E} \right) = (\beta_1 + \beta_2) \left( \frac{\partial Y}{Y} \right) \rightarrow \frac{\partial E}{\partial Y} \left( \frac{Y}{E} \right) = (\beta_1 + \beta_2)
\]  

(6)

Given that this research will not solely use employment elasticities to draw conclusions 
about economies, the arc elasticity method will be employed. This method is easily 
replicable and allows the reliability of the analysis to be easily assessed. Moreover, the 
requirements for improved living standards and reduced inequality in the employment-
intensive, inclusive-growth economies will be assessed using other variables. These 
include population growth as compared to real GDP growth and the Gini Coefficient; this 
is a step towards ensuring that the research does not suffer from the omitted variable bias. The next section indicates an alternate method for gauging the link between employment – or conversely, unemployment - and economic/output growth.

2.3 Okun’s Law – unemployment and output growth
An alternate measure of the link between output growth and the rate of unemployment is Okun’s Law (Rahman & Mustafa, 2015). This law suggests a negative relationship between unemployment and output growth in that, for every percentage decline in unemployment there is a resultant increase in gross national product (GNP) of 3%, with empirical evidence showing that the relationship holds in the opposite direction as well (Pattanaik & Nayak, 2014). Okun’s Law received the status of empirical regularity and has been cited as a seminal study due to its application in dynamic economies (Pattanaik & Nayak, 2014). However, Okun as cited in Pattanaik & Nayak (2014) highlighted a shortcoming in the approach in that the relationship did not reveal the impact of changes in other aspects of the economy such as the labour force, increased productivity and longer working hours – all of which accompany employment growth and enable output growth.

Furthermore, the Okun coefficient was previously utilised to test the relationship between output and unemployment in a larger number of OECD countries, to find that a significant negative relationship existed (Chinn, et al., 2014). In addition, Okun coefficients were computed for G-7 countries with the results indicating that it is still valid in G-7 countries and that the link between growth and unemployment was stronger in the manufacturing sector than the overall economy (Padalino & Vivarelli, 1997). Although Okun’s law assumes that unemployment acts as the independent variable and GNP is a dependent variable, in vast empirical research the findings have been that the causality occurred in the opposite direction (Perugini & Signorelli, 2007). Stated differently, other empirical research found evidence that changes in output explain changes in unemployment in a given economy (Perugini & Signorelli, 2007) and not in the other direction as the seminal research indicates.

More recent research has been conducted in 13 developed countries on the validity of Okun’s law, intending to test whether a 1% increase in GDP growth indeed results in a 3% decrease in unemployment (Rahman & Mustafa, 2015). The findings were that, although all 13 were advanced economies that were selected due to their importance in the global economy historically and exhibited high per capita real income, Okun’s Law was only valid for the USA and South Korea.

While Okun’s Law is a more established means of measuring the relationship between unemployment and growth, employment elasticity is for several reasons the preferred approach for this research. First and foremost, employment elasticities allow the measurement shortcomings that pertain to unemployment to be avoided (Pattanaik & Nayak, 2014). In addition, employment elasticities can be applied to many sub-groups in
an economy including sectors, genders, geographical regions and age, which enables wider conclusions to be drawn from an assessment of these elasticities (Islam, 2004). Regardless of the shortcomings in Okun’s Law, the relationship between employment or unemployment and economic growth is a useful macroeconomic approach for determining the nature of growth in the economy, hence employment elasticity is the preferred measure for this research.

While measuring and achieving employment-intensive growth is critically important in the South African context, there is a need to ensure that this growth is inclusive and benefits the majority of the population. The following section will consequently discuss the prevailing literature regarding income inequality and why it is necessary to reduce income inequality along with unemployment reduction and increased growth.

### 2.4 Income inequality and poverty alleviation

The NDP highlights that in addition to reducing unemployment and increasing economic growth there is a need to “eliminate poverty and reduce inequality by 2030” (National Planning Commission, 2011, p 14). This is reinforced and informed by the fact that South Africa has one of the highest Gini-coefficients in the world – 0.69 in 2016 (World Bank, 2017) – thus, reduction of the Gini coefficient is one of the foremost requirements in the NDP (Wittenberg, 2017). Furthermore, Van der Berg (2011) found that even if poverty is reduced, inequality may not necessarily decline, thus, poverty alleviation and reduction of income inequality need to be given increased attention by policy makers.

While the overarching literature regarding the measures of income inequality is well established (Cowell, 2011; Deaton, 1997), Woolard, Leibbrandt and Daniels (2014) conducted research on South Africa specially and found a slight growth in average real income between 2008 and 2010, but with a converse reduction in life satisfaction and expectations of future upward mobility. Wittenberg (2017) similarly found that regardless of the measure used, income inequality in South Africa has been increasing or has remained the same since for the period 1998 to 2010. The Kuznets Curve offers an alternative interpretation in that it suggests that as an economy improves, market forces result in inequality initially increasing and after reaching a tipping point beginning to decrease as economic development continues (Stern, 2003). While the latter provides a theoretically alternative view, all empirically-based research suggests that inequality in South Africa is increasing and needs to be reduced for the welfare of its inhabitants to improve.
2.5 Macroeconomic determinants of employment elasticity

While the literature regarding employment elasticity of growth is relatively limited, the literature regarding the macroeconomics determinants of employment elasticity is even scarcer (Pattanaik & Nayak, 2014). Most existing studies regarding employment elasticities have placed an emphasis on identifying the trends in employment elasticities (Kapsos, 2005), comparing elasticities of sub-sectors or regions (Mkhize, 2016), or identifying how employment elasticities for the same region compare for different time periods (Chowdhury & Tadjoeddin, 2012).

The below summarises the key macroeconomic factors that were tested in two research papers aiming to uncover the macroeconomic determinants of employment elasticity of growth. Kapsos (2005) conducted the only cross-county analysis of the employment elasticities of 160 countries for the period 1991 to 2003, whereas Pattanaik & Nayak (2014) analysed employment elasticities of 15 Indian states for the period 1994 to 2009. The below macroeconomic factors were tested using a multiple regression approach to establish the statically significant macroeconomic determinants of growth. While the underlying proxies utilised in the respective studies differed, the overarching variables were mostly the same as they were selected based on existing literature.

Table 2 Summary of macroeconomic factors tested against employment elasticity

<table>
<thead>
<tr>
<th>Research</th>
<th>Kapsos, 2005</th>
<th>Puttanaik &amp; Nayak, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macroeconomic factor</td>
<td>Measurement proxy</td>
<td></td>
</tr>
<tr>
<td>1. Labour supply/demographics</td>
<td>Average annual growth in working age population</td>
<td>Labour force participation rate</td>
</tr>
<tr>
<td>2. Economic Structure</td>
<td>Share of employment in services</td>
<td>Share of total employment in secondary sector</td>
</tr>
<tr>
<td></td>
<td>Share of employment in industry</td>
<td>Share of total employment in tertiary sector</td>
</tr>
<tr>
<td></td>
<td>Gender gap in labour force participation</td>
<td></td>
</tr>
<tr>
<td>3. Macroeconomic uncertainty</td>
<td>Average annual inflation rate</td>
<td>Rate of inflation</td>
</tr>
<tr>
<td></td>
<td>Proportion of years with conflict</td>
<td></td>
</tr>
<tr>
<td>4. Economic openness and export orientation</td>
<td>Average percentage of trade in total GDP</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Average trade balance</td>
<td></td>
</tr>
</tbody>
</table>
Labour supply, economic structure, macroeconomic uncertainty and labour productivity were statistically significant at the 1% level; health was statistically significant at the 5% level and tax policy and labour regulation were statistically significant at the 10% level in relation to employment elasticity (Kapsos, 2005; Pattanaik & Nayak, 2014).

Labour supply was statistically significant in both studies and the proxies' average annual growth in working age population and labour force participation rate had a strong, positive relationship with employment elasticity (Kapsos, 2005; Pattanaik & Nayak, 2014).

In addition to finding that economic structure was statically significant, Pattanaik and Nayak (2014) found the share of total employment in the secondary sector and the share of total employment in the tertiary sector to be strong, explanatory variables for an improvement in elasticity, which was reinforced by the findings of Kapsos (2005) which indicated that an increase in the share of total employment in the services sector of 10% results in a 0.06 increase in employment elasticity (Kapsos, 2005).

While in Pattanaik & Nayak’s (2014) research, macroeconomic uncertainty was found to have a strong, inverse relationship with employment elasticity when using the inflation proxy, Kapsos (2005) found that the impact is only economically significant at very high inflation rates as this impacts employment as well as economic growth outcomes. In Pattanaik and Nayak’s (2014) study, inflation rates were also found to have a negative relationship with employment elasticity which supported the prevalence of the sand effect. In addition, the conflict indicator was found to be significant as an economy with conflict during the 1990-2003 period was found to have – all else being equal – an employment elasticity that was 0.16 lower than that of a country with no conflict (Kapsos, 2005).

In terms of health/human capital, the findings differed slightly in that malaria deaths were found not to be statistically significant in relation to employment elasticities (Kapsos, 2005), whereas literacy rates and life expectancy rates were statistically significant in relation to employment with an increase in these rates ensuring high employment intensity of growth (Pattanaik & Nayak, 2014).
Labour productivity was only tested in the Pattanaik and Nayak (2014) study and was statistically significant at a 1% level. Their findings indicated a negative relationship with employment elasticity of growth and confirmed Keynesian fundamentals as a result (Pattanaik & Nayak, 2014).

Lastly, rigidity of employment showed no statistical significance, whereas the individual tax rate was significant at a 5% level and was found to be negatively related to employment elasticity of growth with a 10% increase in individual tax rates resulting in a decrease in employment elasticity of growth of 0.08 (Kapsos, 2005).

While the literature has established that the macroeconomic factors mentioned above are statistically significant variables that influence employment elasticity, this research aims to see whether the employment and economic growth initiatives in the NDP are likely to be macroeconomic determinants of employment elasticity and, ultimately, employment-intensive, inclusive growth. These initiatives were included in the South African NDP in the hopes that they would lead to reduced unemployment and increased economic growth with the ultimate aim of poverty reduction by 2030. The following section will highlight these initiatives and discuss the existing literature regarding the NDP.

2.6 The National Development Plan employment and growth initiatives

The NDP provides a strategic framework for the South African economy and outlines various goals that, if achieved, will enable the realisation of ‘Vision 2030’ (National Planning Commission, 2011). There is extensive literature regarding the fact that the NDP policies are unlikely to be implemented due to poor-co-ordination amongst institutional actors (Naidoo & Mare, 2015). On the other end of the spectrum, literature suggest that the failure of implementation will also result from a fundamental flaw in the development of the NDP in that it fails to address the enabling factors for achievement of the plan and ignores the role of the rural economy – a critical factor in traditional leadership which still plays a key role in the South African context (Chilenga, 2017).

There is limited research that ‘takes a step back’ and assess whether there is evidence that the initiatives themselves are robust enough to achieve the goals set out in the NDP. As result, this research assesses the NDP initiatives in the context of employment intensive, inclusive growth and determines whether achievement of the Vision 2030 goals is likely.
Furthermore, while the NDP provides a number of goals and initiatives pertaining to infrastructure, reduced carbon emission, education, health and many others, this research will focus on employment and growth initiatives that aim to address the goal to ‘eliminate poverty and reduce inequality’ which, according to the NDP, can only be achieved if ‘the economy...becomes more inclusive and grows faster’ (National Planning Commission, 2011). These specific growth and employment initiatives include:

**Table 1 NDP growth and employment initiatives and their measurement proxies**

<table>
<thead>
<tr>
<th></th>
<th>NDP growth and employment initiatives</th>
<th>Measurement proxies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Raise exports, focusing on those areas where South Africa already has the endowments and comparative advantage, such as mining, construction, mid-skill manufacturing, agriculture and agro-processing, tourism and business services</td>
<td>Increase exports</td>
</tr>
<tr>
<td>2.</td>
<td>Increase the size and effectiveness of the innovation system, and ensure closer alignment with companies that operate in sectors consistent with the growth strategy.</td>
<td>Increase innovation</td>
</tr>
<tr>
<td>3.</td>
<td>Improve the functioning of the labour market to help the economy absorb more labour, through reforms and specific proposals concerning dispute resolution and discipline.</td>
<td>Improved labour dispute resolution practices</td>
</tr>
<tr>
<td>4.</td>
<td>Support small businesses through better coordination of activities in small business agencies, development finance institutions, and public and private incubators.</td>
<td>Increased investment and support of small businesses</td>
</tr>
<tr>
<td>5.</td>
<td>Improve the skills base through better education and vocational training.</td>
<td>Increase skills development</td>
</tr>
<tr>
<td>6.</td>
<td>Increase investment in social and economic infrastructure to lower costs, raise productivity and bring more people into the mainstream of the economy.</td>
<td>Increase investment in economic infrastructure</td>
</tr>
<tr>
<td>7.</td>
<td>Reduce the regulatory burden in sectors where the private sector is the main investor, such as broadband Internet connectivity, to achieve greater capacity and lower prices.</td>
<td>Reduce regulatory burden for businesses in private sector</td>
</tr>
<tr>
<td>8.</td>
<td>Improve the capacity of the state to effectively implement economic policy</td>
<td>Improve implementation of economic policy</td>
</tr>
</tbody>
</table>
9. Increase trust between labour, government and business

While existing literature does point to a number of macroeconomic determinants of employment elasticity of growth and provides commentary on the likelihood of implementation of NDP initiatives, there is a need to research how robust the initiatives are in the first place. This will be conducted in this research by establishing economies that have managed to attain ‘employment intensive, inclusive growth’ and testing how prevalent the NDP initiatives are in these economies versus the rest of the world. As a result of the literature above, the following section will outline the research hypothesis and methodology employed in this research.

Chapter 4: Research Methodology

4.1 Research hypothesis

In light of the above literature indicating which factors influence employment intensive, inclusive growth as well as the NDP employment and economic growth initiatives, the research hypotheses are as follows:

\( H_0 \): The employment and economic growth initiatives per the NDP do not lead to employment intensive, inclusive economic growth

\( H_1 \): The employment and economic growth initiatives per the NDP lead to employment intensive, inclusive economic growth

Stated for each NDP initiative in turn:

1. \( H_0 \): Increased exports does not lead to employment intensive, inclusive economic growth
   \( H_1 \): Increased exports leads to employment intensive, inclusive economic growth

2. \( H_0 \): Increased innovation does not lead to employment intensive, inclusive economic growth
   \( H_1 \): Increased innovation leads to employment intensive, inclusive economic growth

3. \( H_0 \): Improved labour dispute resolution practices does not lead to employment intensive, inclusive economic growth
4. $H_0$: Increased investment and support of small businesses does not lead to employment intensive, inclusive economic growth
   $H_1$: Increased investment and support of small businesses leads to employment intensive, inclusive economic growth

5. $H_0$: Increased skills development does not lead to employment intensive, inclusive economic growth
   $H_1$: Increased skills development leads to employment intensive, inclusive economic growth

6. $H_0$: Increased investment in economic infrastructure does not lead to employment intensive, inclusive economic growth
   $H_1$: Increased investment in economic infrastructure leads to employment intensive, inclusive economic growth

7. $H_0$: Reduced regulation in private sector does not lead to employment intensive, inclusive economic growth
   $H_1$: Reduced regulation in private sector leads to employment intensive, inclusive economic growth

8. $H_0$: Improved implementation of economic policy does not lead to employment intensive, inclusive economic growth
   $H_1$: Improved implementation of economic policy leads to employment intensive, inclusive economic growth

9. $H_0$: Improved trust does not lead to employment intensive, inclusive economic growth
   $H_1$: Improved trust leads to employment intensive, inclusive economic growth

In order to answer the overarching research question regarding the robustness of NDP employment and economic growth at initiatives to achieve the targets set for Vision 2030, the analysis was conducted in two parts. The first part involved an analysis of secondary, world, economic data including: size of the population, real GDP growth, employment growth, Gini coefficient and computation of employment elasticities in order to arrive at a list of countries that exhibited ideal levels for each indicator. This list of countries evidenced that they had managed to attain employment intensive, inclusive growth and henceforth, this list of countries will be referred to as ‘inclusive growth countries’. The second part of the analysis involved the development of a scorecard built from NDP economic growth and employment factors to test the prevalence of these factors within the ‘inclusive growth countries’.
4.2 Analysis approach
For the first part of the analysis, a quantitative, deductive, descriptive approach was utilised. Due to the fact that the secondary data being analysed included population, employment, real GDP and Gini Coefficient data, a quantitative approach lent itself to this data and this part of the analysis was an empirical economic study and as a result, was quantitative. For the second part of the analysis, a quantitative, deductive, explanatory approach was utilised. Due to the fact that the second part of the research aimed to test the prevalence of various macroeconomic factors and how they impacted the level of employment intensive growth in the extracted inclusive growth countries, a quantitative and explanatory approach was appropriate.

For the first part of the analysis, the concepts and representative data analysed were well defined and emerged from existing literature regarding employment intensive, inclusive growth thus; a deductive, quantitative, approach was appropriate (Saunders & Lewis, 2012). Furthermore, the approach is deemed as descriptive as it involved an analysis of secondary data and sought to explain ‘what’ was occurring as a first step in the overall analysis (Saunders & Lewis, 2012).

For the second part of the analysis, a deductive, quantitative approach was also appropriate as the concepts emerged from established literature regarding employment and growth initiatives in the NDP as well as the macroeconomic determinants of employment intensive growth (Saunders & Lewis, 2012). An explanatory approach was appropriate at this stage as the analysis sought to assess the causal links between the various initiatives and macroeconomic variables and employment elasticity (Zikmund, Babin, Carr, & Griffin, 2010).

4.3 Universe/population
The population includes all countries in the world per the World Bank’s definition of countries which, defines countries as ‘territories in which authorities report separate social or economic statistics (World Bank, 2017) as opposed to defining countries based on political independence. This results in a list of 218 countries that include 189 World Bank member countries and the rest of the countries include those with populations of 30 000 or more. This definition of the population was preferred as it was a broader definition and accounted for the fact that even within the defines of political independence, differing social and economic phenomena may occur.
4.4 Unit of analysis
The unit of analysis is the group of inclusive growth countries that exhibited the following features for the period 1991 to 2016:

- an average population of more than 10 million for the period
- have demonstrated improved living standards through average real growth rate exceeding the average population growth
- an employment elasticity of growth between 0 and 1
- a lower Gini-coefficient in 2016 compared to 1991 or the earliest period where a Gini coefficient is available.

4.5 Sampling
Utilising a population of counties per the World Bank list of countries allowed the entire population to be included in the study. The population included 218 countries as a point of departure and series of filters were applied to arrive at the unit of analysis.

The first filter was that the average population for the period 1991 to 2016 should exceed 10 million. The need to assess countries with an average population exceeding 10 million is to ensure validity in the interpretation of the results. Economies with an average population of less than 10 million may have features that are desirable however, the results are not necessarily generalizable given the economy’s size and a comparison with a country that has a significantly larger population would not be a ‘like for like’ comparison. This filter resulted in the list of countries being reduced from 218 to 79.

The second filter related to the need to improve living standards. The requirement for improved living standards stemmed from the literature which found that increased economic growth does not necessarily translate into improved living standard for an economy’s inhabitants (Esposito, Altukhov, & Shulguin, 2017). Ensuring that the living standards are gauged over the period was the first step towards assessing whether the growth practically improved the lives of individuals. This requirement also directly links to the NDPs goal of ‘eliminate poverty...by 2030’ and resulted in the list of countries being reduced from 79 to 57.

The third filter that was applied related to the need for the employment elasticity to be between 0 and 1 which, indicates economic growth that is employment intensive. This employment elasticity framework has been previously utilised in a number of studies that sought to determine the macroeconomic variables that lead to increased employment
(Pattanaik & Nayak, 2014); a study that sought to understand which sectors in the South African economy was employment intensive (Mkhize, 2016) and a study that assessed the relationship between labour market institutions and employment elasticity of growth (Flaig & Rottmann, 2009). This is directly aligned to the NDPs priority of ‘raising employment through faster economic growth’ (Chilenga, 2017) and resulted in the number of countries being reduced from 57 to 49.

The fourth filter related to income inequality and sought to determine whether the country was more financially inclusive at the end of period compared to the start. This was determined by assessing the whether the Gini coefficient was lower at the end of the period compared to the start. The literature indicated that a Gini coefficient of 1 indicated total income inequality (exclusion) whereas a Gini coefficient of 0 indicated total income equality (inclusion) (Wittenberg, 2017). While there are various methods for measuring inequality including the Gini Index, the Atkinson Group of Indices and the Theil Index (Wittenberg, 2017); this research utilised the Gini coefficient as the measure of income equality for all countries under analysis. The Gini coefficient was chosen as it was readily available for the period for a wide range of economies and thus, increased the reliability of the results due to the coefficient being calculated consistently for each country and being comparable as a result. Unsurprisingly, this filter had the greatest impact and resulted in the list of countries being reduced from 49 to 7.

The above filters allowed the unit of analysis to be arrived at: a list of countries that have achieved employment intensive, inclusive growth. The following section will highlight the research instrument that was utilised to test the hypothesis regarding whether the employment and growth initiatives in the NDP are likely to achieve the Vision 2030 goals and lead to employment intensive, inclusive growth.

An alternate approach to the above could have been to analyse the complete population of countries and identify instances where the proposed NDP initiatives had been implemented successfully. Thereafter, one could assess whether those countries have exhibited employment intensive, inclusive growth. While this approach would allow for a larger group of countries to be assessed, the result would be less reliable as the reasoning could be viewed as circular. This is because it is likely that countries that have successfully implemented the NDPs economic growth and employment initiatives eg increased exports, increased innovation etc are likely to also have employment inclusive growth – it then becomes a ‘self-fulfilling prophecy’.
4.5 Development of the Inclusive Growth scorecard

The measurement tool that was utilised is a scorecard that enabled the assessment of the various employment and growth NDP initiatives in the inclusive growth economies versus the rest of the world. The below table indicates the NDP growth and employment initiatives, the relevant measurement proxy and the source of the measurement proxy:

Table 2 NDP growth and employment initiative, measurement proxy and source

<table>
<thead>
<tr>
<th>Summarised initiatives</th>
<th>Measurement proxy</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increase exports</td>
<td>Increased Exports (%GDP)</td>
<td>World Bank Database</td>
</tr>
<tr>
<td>4. Increased investment and support of small businesses</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>7. Reduce regulation in private sector</td>
<td>Improved distance to frontier (DTF) score</td>
<td>Doing Business Index (</td>
</tr>
</tbody>
</table>
The above initiatives and measurement proxies were captured in the scorecard and the prevalence of each factor in each Inclusive Growth country was indicated in the scorecard. The prevalence of the factor in the inclusive growth countries compared to the world was then captured in percentage terms to indicate the proportion of inclusive growth economies versus ‘non inclusive growth’ economies that had the macroeconomic factor/initiative present. If the proportion was higher in inclusive growth countries than in ‘non inclusive growth economies’, the research indicated that indeed, the factor was likely to lead to sustained, elevated, employment intensive growth as it was more prevalent in the inclusive growth economies than the control - ‘non inclusive growth’ economies. If the opposite was true, that is, the factor was equally or more prevalent in the ‘non inclusive growth’ countries, the factor is unlikely to lead to sustained, elevated, employment intensive growth.

4.6 Data Collection
The data for the initial part of the analysis – population, real GDP growth and Gini Coefficient data was collected from the World Bank Database. Where real GDP data was missing for the period, the BMI Research database was utilised and where that was not sufficient, the country in questions national statistics website was consulted. If all of the above approaches still resulted in no information, the country was excluded from the analysis. For employment data, the World Bank and International Labour Organisation (ILO) database were utilised. As both databases provided an indication of the underlying data sources from where the data points were retrieved, they were deemed more reliable than the alternative databases (Zikmund, Babin, Carr, & Griffin, 2010). Both databases were deemed as the most comprehensive sources of employment data and upon contacting the ILO, it was confirmed that employment data at a macro level was not available for the period prior to 1991.

For the scorecard itself, the underlying data for each measurement proxy was collected from various sources. Per the table above, these included:

- World Bank Database
- World Economic Forum – Global Competitiveness Report
- Doing Business Index
- Our World in Data

All of the above data sources were chosen due to the fact that the sources as well as the underlying sources were reliable and verifiable. Each of the measurement proxies had data for at least 10 years and at most for the entire period and where the data did not cover the
entire period, inferences could still be drawn regarding the direction of the trend. For the majority of the NDP employment and growth initiatives, the goal is to improve in each initiative by either increasing or decreasing the occurrence of the measurement proxy thus, while the data was not always exactly for the period under analysis, the data was sufficient to be included in the research in order to give an indication of whether the measure increased or decreased.

As an example, the goal to ‘increase exports’ was measured by assessing whether exports as a % GDP increased from 1991 to 2016 whereas the goal to ‘reduce the regulatory burden in the private sector’ was evidenced by an increase and improved ‘distance to frontier’ (DTF) score. The DTF score provides a way of assessing the level of absolute regulatory performance over time (Doing Business, 2017).

4.7 Data analysis
The decision to utilise a scorecard in this analysis largely stemmed from the proven use of index/scorecards in other research that aimed to compare the performance of various economies. The World Economic Forum’s (WEF) Global Competitiveness (GCR) report measures 110 variables in 142 countries and develops an annual scorecard that indicates the overall competitiveness of the economies and the economy’s ability to provide prosperity to its inhabitants (Schwab, Sala-i-Martín, Samans, & Blanke, 2016). The WEF GCR has been developed annually since 2006 and as a result, can provide insights into the performance of the economies produced time (Schwab, Sala-i-Martín, Samans, & Blanke, 2016).

Other economic indexes include ‘The Index of Economic Independence’ which gauges an economies’ immunity to economic risk in 112 countries (Helmy, 2017); ‘The Data Quality Index: World Economic’ which measured the quality of GDP data in 154 countries (World Economics, 2017) as well as The GIBS Dynamic Market Index which sought to determine the enablers of market dynamism by assessing the performance of six institutional pillars in 144 countries.

This data analysis in this research converges with the above approach in that nine specific macroeconomic factors have been identified for analysis and they will be tested over time. In addition, this research assesses these factors across a large number of countries – seven inclusive growth countries and 71 ‘non-inclusive growth’ countries so the approach is aligned with established methods in that respect. Where the approach diverges from the above is that this approach did not seek to develop an index and measure the performance
from a base of zero; instead, the measurement parameter was whether the NDP factor was more evident in the inclusive growth economies versus the non-inclusive growth economies. This was a deliberate decision that was taken as the aim of this research is to determine whether there is evidence from other economies that NDP initiatives will lead to success; it is not to measure how the NDP factors have performed over time in said economies.

It is for the aforementioned reason that the decision was taken to not employ a multiple regression analysis to test the strength of the relationship between the independent variables – nine NDP factors – and the dependent variable – employment, intensive, inclusive growth. While this is a more statistically established method, it will not address whether or not the factor has been successful in other economies and would instead give insights into the strength of the relationship which is not appropriate for this research.

4.8 Reliability and validity

It is acknowledged that an inherent flaw in using secondary data is that it was not designed specifically for the purpose of the research (Zikmund, Babin, Carr, & Griffin, 2010). Moreover, there may be instances where different units of measurements were used for the same indicator and this compromises the ability to interpret results (article).

In order to mitigate this risk related to reliability, specific databases were chosen due do their reliability in that the methodology for collecting the data and preparing the data was readily available. This was particularly important for the secondary data used to identify the ‘employment intensive, inclusive growth’ countries thus, the data for population, real GDP growth and employment data hence, where possible, this was retrieved from a consistent data source: World Bank database (World Bank, 2017). Moreover, in order to ensure reliability of results, the data was used for consistent periods for each of the variables: 1991 to 2016.

While utilising data for a longer time-series may have improved the robustness of the research, the employment data was only available from 1991. As a result, the research was restricted to this period to ensure that all economic indicators were measured for the same time period and the results were indicative of an analysis conducted for a consistent period.

While the population definition considered 218 countries, the sampling considered only economies with average population above 10 million during the period under analysis – 1991 to 2016 – which resulted in 79 countries being analysed. This posed a possible threat to internal validity as a large number of countries were not included (Zikmund, Babin, Carr,
However, this approach was appropriate as only economies whose results could be more generalizable were required for analysis. It was therefore necessary to exclude economies with smaller populations as a first step to ensure the results were more externally valid.

4.9 Limitations

The key limitations of the research stem from shortcomings in the data. This research would have been more interesting if conducted over a longer period of time – eg since 1960 – as this is the starting point for GDP data availability for most counties. However, employment data was only available from 1991 to 2016 and for the following countries, there were gaps in the real GDP data that resulted in the countries being omitted from the analysis. Alternative databases were consulted such as the BMI as well as the country specific websites – where available – prior to removing the countries from the list. From a real GDP perspective, data was available for the majority of countries from 1960 to 2016 however, this was not consistent across all economies. As a result, the population became all countries in the world where GDP and employment data were available since 1991 to 2014.

All scorecard data that was drawn from the WEF GCR was available from 2006 except for the ‘labour dispute resolution’ data which was only available from 2009 as the scorecard developed to include more indicators. The Ease of Doing Business ‘Distance to Frontier’ data’ was only available from 2004 and the data pertaining to ‘Self-Reported Trust’ was available from 1993 to 2014. The only NDP initiative that could not be assessed was the ‘increased investment in small business’ as there was no clear secondary data source that indicated the amount of investment to ward small business/small and medium enterprises or even entrepreneurs in the 79 economies under analysis.
References


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