To What Extent Does the Keynesian Approach Hold in the South African Economy?

Mabunda FM & Matlasedi NT

University of Limpopo, South Africa

Abstract

Since macroeconomics examines issues about the entire economy, including the business cycle, GDP, inflation, and unemployment, it is a strongly debated area of economics. However, it has become clear that attempts by the government to solve these issues through economic policies have significant social, political, and economic repercussions, especially post the covid 19 lockdown pressures and the Ukraine-Russia war-induced inflation since 2022, as evidenced by lacklustre economic growth figures and increased unemployment in the same period. The study adopts an augmented Keynesian model of macroeconomics to reflect on these contestations and implications. Furthermore, utilising annual data from 1994 to 2023, the econometric technique ARDL was used to understand better the implications of the Keynesian approach in South Africa and whether a different policy approach should be adopted. The study found that the variables in the model are cointegrated at the 1% level of significance, revealing a positive long-run influence on GDP. Furthermore, the results revealed a positive long-run impact of Gross Capital Formation and Consumption. Additionally, the ARDL error correction model revealed that the model will converge back to equilibrium at a speed of 60.89%. The study recommends that in order to continue influencing investment decisions, the government and the South African Reserve Bank should manage and monitor expectations, interest rates, and government policy.

Keywords: *Keynesian, ARDL, South Africa, Unemployment, GDP*

INTRODUCTION

There is a multitude of economic approaches to economic policymaking, and at the summit of those approaches sits the Keynesian approach. The theory was developed by John Maynard Keynes and puts more emphasis on how active the government should be in periods of shock for the economy. During these periods of economic shock, the economic fluctuations in the business cycle are managed through both fiscal and monetary policy. The Keynesian approach hypothesises that during fluctuations caused by recessions (which may be caused by a multitude of events such as natural disasters, pandemics such as COVID-19 and wars such as Russia-Ukraine), the government has to implement expansionary fiscal policy by increasing spending or lowering taxes to stimulate aggregate demand. This is anticipated to get the economy moving and lift the country out of the recession. This approach (Keynesian) contrasts with classical economic theories, which advocate for minimal government involvement in the economy.

In South Africa, which is characterised by frequent fiscal deficits, rising public debt as well as the triple challenges of development (income inequality, unemployment and poverty), the importance of examining the Keynesian approach, as a tool in policymaking, in order to address

economic challenges, is imperative. South Africa has faced numerous socio-economic challenges since the end of apartheid in 1994 as the economy opened up to globalisation and felt its various effects including lower export prices, higher import prices, exchange rate fluctuations, global financial crises, wars which caused supply chain issues etc, which have also affected the balance of payments negatively. Those challenges have been worsened by both global and domestic issues, such as rampant corruption and maladministration in parastatals. As a result of these multitude of issues, South Africa's economic policymakers have had to grapple with balancing between neoliberal approaches and Keynesian strategies. Thus, the central research question of this study is: "To what extent does the Keynesian approach hold in the South African economy?". This paper will focus on both the theoretical and empirical considerations regarding fiscal and monetary policies implemented since 1994. This will help determine whether the Keynesian approach has had an effect on the South African economy and how effective Keynesian principles have been in generating sustainable economic growth.

LITERATURE REVIEW

According to Keynes (1936), the Keynesian theory suggests that government intervention (in spending and taxation) is necessary during economic downturns so that aggregate demand can be efficiently managed. This is to make sure that unemployment and underproduction issues are solved. According to the Keynesian approach, whenever there is a recession in the economy, household demand and consumption may be too limited to drive an economic expansion. We saw this during the pandemic in 2020 as the economy was locked down from levels 5 to 3. Thus, government intervention through increased government spending, lower taxes, and expansionary monetary policies (reducing interest rates, such as the SARB reducing the repo rate repeatedly during 2020, may be necessary to restore the economy to equilibrium. According to Arestis and Sawyer (2003), this approach focuses more on managing the economy only in the short term and encourages governments to run fiscal deficits in the short run, in order to stimulate aggregate demand, especially in a recession.

With very high unemployment rates in South Africa as well as rising public debt and recurring fiscal deficits, the Keynesian approach is most suitable. In such cases, a Keynesian response would advocate for government investment in infrastructure, education, and welfare systems to stimulate job creation and enhance aggregate demand. We saw some of these interventions during 2020 with the coronavirus pandemic, which induced a recession. The government borrowed billions, thus ballooning public debt, generated less revenue, but implemented increases in existing grants and introduced a new Social Relief of Distress (SRD) grant. Additionally, according to Fedderke and Simkins (2009), South Africa is reliant on export revenues from both the mining and manufacturing sectors and this puts the country at risk of global economic downturns which may disrupt supply chains and affect the transportation of our exports goods (as we saw during the pandemic and the Russia-Ukraine War).

Not every aspect of the Keynesian approach is rosy according to its detractors (mostly monetarists such as Friedman). Friedman (1968) argues that government intervention in the economy leads to inefficiency, inflation, and unsustainable debt levels. These concerns are pertinent in South Africa, where fiscal expansion in recent years has coincided with rising public debt, which reached nearly 70% of GDP in 2023, prompting debates about the sustainability of government borrowing and spending.

Keynesian policies have been implemented to varying extents in post-apartheid South Africa, most notably during the global financial crisis of 2008 and the COVID-19 pandemic in 2020. During the 2008 crisis, the South African government adopted an expansionary fiscal policy that included increased public spending and tax reliefs aimed at boosting economic growth. This Keynesian response was similar to those adopted in many developed economies between 2007-2010. According to Aron, Muellbauer, and Prinsloo (2009), data from the South African Reserve Bank (SARB) indicates that those government interventions helped moderate the impact of the crisis. Also, the fiscal stimulus implemented in 2008 helped sustain public sector employment and social welfare programs, thus mitigating the social impact of the recession (Fourie, 2011).

Much like the 2008 financial crisis, the COVID-19 pandemic presented a similar challenge, where the South African government again adopted Keynesian principles. These measures included a R500 billion stimulus (which was about 10% of GDP), aimed at supporting businesses, government workers and the unemployed (through SRD grants). Even though the stimulus was widely viewed as necessary, there were concerns raised about the debt-to-GDP ratio, which was already high before the pandemic. According to the National Treasury (2021), the government response helped to cushion the blow from the pandemic, reducing the immediate economic growth decline and supporting vulnerable households. However, the long-term sustainability of this Keynesian approach remains in question, particularly given South Africa's slow recovery and mounting debt burdens.

Even though the Keynesian approach has been shown to mitigate economic calamities during recessions and pandemics, it is not without its limitations. The structural nature of South Africa's unemployment problem, which is more about skills mismatches and labour market rigidities rather than a cyclical problem, is one of those major issues which stand in the way of implementing Keynesian principles (Bhorat & Tseng, 2014). Keynesian demand-side solutions may not be sufficient to address this unemployment, which suggests that more comprehensive economic structural reforms, together with government intervention, may be necessary.

Effective Keynesian policy development and implementation are reliant on inequality, unemployment and poverty being low. Those are luxuries South Africa unfortunately does not have. Corruption is also an impediment to implementation. According to the World Bank (2021), government spending is often inefficiently allocated due to corruption and mismanagement, limiting the potential positive effects of expansionary policies (Keynesian approach). Therefore, while the Keynesian approach provides a useful framework for understanding how fiscal and

monetary policy might mitigate short-term economic downturns, its long-term success in South Africa depends on addressing broader structural issues.

METHODOLOGY

The quantitative analysis is based on secondary quarterly time series data that is available to the public and covers the years 1994 through 2023. Data was obtained from Quantec, Statistics South Africa, and the South African Reserve Bank (SARB). Econometric Views (EViews) 13 statistical tool was used to generate empirical results for this study.

Keynesian macroeconomics theory provides theoretical support for the study. It models aggregate output (y) as a function of consumer consumption (C), government spending (G), investment (I), and net exports (X-M) (Pesarn, Shin, & Smith, 2001).

$$Y=C+I+G+(X-M) \quad (1)$$

The study further modified the Keynesian theory of macroeconomics by integrating Consumer Price Index (CPI), Interest Rate (INT) and National Government Debt (DEBT) in order to effectively investigate to what extent does the Keynesian theory holds by bringing other important variables into the model. The model is therefore specified in its functional form as:

$$y=f(CONS,GCF,GOV,EXCR,CPI,INT,DEBT) \quad (2)$$

The model is therefore formally expressed as:

$$〖GDP〗_t=\alpha+\beta_1 〖CONS〗_t+\beta_2 〖GCF〗_t+\beta_3 〖GOV〗_t+\beta_4 〖EXCR〗_t+ 〖\beta_5 CPI〗_t 〖+\beta_6 〖INT〗_t+〖\beta_7 DEBT〗_t+\mu〗_t \quad (3)$$

Where GDP represents Gross Domestic Product at constant market prices. CONS represent Final household consumption expenditure and is expected to have a positive relationship with GDP. GCF represent Gross fixed capital formation, used as a proxy for investment and expected to show a positive relationship with GDP. GOV represents government expenditure. EXCR denotes South Africa's Real effective exchange rate, and it is expected to show a positive relationship with GDP. CPI represent Consumer Price Index and is used as a proxy for inflation, and thus, is expected to have a negative relationship with GDP. INT represents the real interest rate and is expected to inversely affect GDP. DEBT denotes the government's foreign debt total and is expected to have a negative impact on GDP. β_1, β_2, β_3, β_4, β_5, $\beta_6$and β_7 Present the coefficients in the model with μ_t representing the error term.

Estimation Techniques

The study employed the Augmented Dickey-Fuller (ADF) Test (Dickey & Fuller, 1979) and Phillips-Perron (PP) Test to investigate stationarity and pave the way for the cointegration test. The unit root tests involve estimating a regression model and testing if the coefficient on the

lagged level of the series is zero. The test statistic is compared to critical values to make a decision. The following hypotheses are therefore tested.

$H0 : \beta = 0$, The time series has a unit root (non-stationary)

$H1 : \beta \neq 0$, The time series does not have a unit root (stationary).

The study employs the Autoregressive Distributed Lag (ARDL) model because it performs well with small, finite datasets (Madzivanyika & Zhanje, 2022). The ARDL model examines the relationship between a dependent variable and one or more independent variables, including their lags. It allows for varying lag structures for each variable, offering flexibility in modelling dynamic relationships. The ARDL provides estimates for both short-term dynamics and long-term equilibrium. To assess the model's reliability and validity, the study conducted diagnostic and stability tests to ensure that the Ordinary Least Squares (OLS) assumptions are upheld. These tests include the Breusch-Godfrey test for autocorrelation of residuals, the White test for heteroskedasticity, the Jarque-Bera test for normality of residuals, and the CUSUM and CUSUMSQ tests to evaluate the stability of coefficients over time, which is useful for analysing structural breaks.

RESULTS

Unit Root Testing

The results of the unit root test, which examined the variables' stationarity, are shown in Table 1. GDP, CONS, GCF, EXCR, INT, D(GOV), D(CPI), and DEBT all show stationarity across several tests (ADF and PP) with significant p-values, indicating that their values are stable and do not depend on time across the sample period, according to the results. In addition, larger p-values suggest that the levels of GOV and CPI are non-stationary. This implies that more analysis may be required to differentiate or alter any trends or unit roots found in them. Additionally, the analysis demonstrated that D(GOV) and D(CPI) exhibit stationarity, indicating that separating these variables contributes to stationarity. The majority of the variables, according to the results, appear to be stationary, but GOV and CPI need to be differentiated for accurate analysis. These findings validate that the study can move further with using the ARDL.

Table 1: Unit root testing

variables	Intercept		Trend & intercept		None		conclusion
	ADF	PP	ADF	PP	ADF	PP	
GDP	0.0252**	0.000**	0.0284**	0.0000***	0.0342**	0.0000***	Stationary
CONS	0.0106**	0.0000***	0.0180**	0.0000***	0.0205**	0.0000***	Stationary
GCF	0.0343**	0.0006***	0.0924*	0.0012***	0.0060***	0.0001***	Stationary
GOV	0.0352**	0.0000***	0.0589*	0.0000***	0.2531	0.0138**	Non stationary
D(GOV)	0.0000***	0.0001***	0.0000***	0.0001***	0.0000***	0.0000***	Stationary
EXCR	0.0039***	0.0129**	0.0208**	0.0612*	0.0002***	0.0008***	Stationary
CPI	0.0072***	0.1023	0.0260**	0.3136	0.2165	0.1933	Non stationary

D(CPI)	0.0000***	0.0000***	0.0001***	0.0000***	0.0000***	0.0000***	Stationary
INT	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	Stationary
DEBT	0.0002***	0.0104**	0.0012***	0.0613*	0.0001***	0.0014***	Stationary

Source: Author compilation E-views 13

Cointegration Test

The F-statistic of 5.781981 in Table 2 is greater than both the lower bound of 2.170 and the upper bound of 3.900 critical values at the 1% level of significance. Therefore, this study rejects the null hypothesis of no cointegration, meaning that there is evidence of a long-run equilibrium relationship among the variables 〖gov〗_t, 〖int〗_t, 〖gfc〗_(t ,) 〖cons〗_t, 〖nxcr〗_t & 〖debt〗_t . The result suggests that the variables in the model are cointegrated, meaning there is a stable long-run relationship between the variables employed.

Table 2: Cointegration testing

Equation	F-statistic	K	Lower bound I0 at 1%	Upper bound I1 at 1%	Outcome
$gdp_t = f(gov_t, int_t, gfc_t, cons_t, nxcr_t, debt_t)$	5.78198	4	2.170**	3.900**	Cointegration

Source: Author compilation E-views 13

ARDL Long Run and Short Run

Table 3 indicates D(CPI) is 0.258803 and the P-value is 0.0001; that means if there is a change in the value of the Consumer Price Index increases by one unit, the dependent variable GDP would increase by 0.2588 and is significant at 1 percent in the short run. However, the study found CPI at all levels of significance to be statistically insignificant in the long run. Similarly, Reetika, Eronimus, and Krishan (2024), when investigating the effect of GDP rate, CPI, and stock market in BRICS economies using ARDL and quarterly data spanning the period 2017 to 2023, found concurring results.

Results in Table 3 indicate that a unit increase in the change of GCF leads to an increase of 0.0867 in the dependent variable, and the statistically significant at 1% in the short run. Thus, changes in GCF explain the significant GDP effect in the short run. The positive coefficient of GFC (0.107638) in Table 4 reveals that the higher the lagged gross capital formation, the more it positively influences GDP and is statistically significant at 1%. This implies that gross capital formation has a significant positive effect in the long run on the dependent variable (GDP). The

finding does not concur with those of Onyinye, Idenyi, and Ifeyinwa (2017) in the case of Nigeria. However, the study concurs with the findings by Keser, Bandi, Jena, and Yadav (2023) who investigated the dynamics of governance, gross capital formation, and growth as evidenced from Brazil, Russia, India, China, and South Africa using annual data from 2002 to 2019. While employing the Fixed Effect Model, Driscoll and Kraay standard error with fixed effect, Fully Modified Ordinary Least Squares, Dynamic Ordinary Least Squares (DOLS) and Panel Dumitrescu Hurlin Causality test.

The EXCR coefficient of 0.0304 in Table 3 indicates that a one-unit increase in the lagged change in the exchange rate increases the dependent variable (GDP) by 0.0304, statistically significant at 1%. The negative coefficient of EXCR (-0.035560) in Table 4 suggests that the increase in the lagged exchange rate negatively affects GDP and is statistically significant at a 10% level. That is, the exchange rate has a somewhat significant negative long-run impact on GDP, but less conclusive. The results are consistent with those of Eze, Nnenna, and Ifeanyi (2024), who investigated the effect of exchange rate on economic growth in Nigeria using annual time series data from 1970 to 2021 and employing VECM.

Also, the estimated coefficient value for debt in Table 3 explains that with a one-unit increase (change) in debt (DEBT), the dependent variable (GDP) increases by 0.0121 and is statistically significant at 5%. The findings indicate that the impact of debt is important in the short run, the coefficient value has turned out to be relatively small, indicating less effect on GDP. As a consequence, the coefficient of DEBT (-0.011221) is negative and statistically significant at 10% in the long run. For this reason, an increase in the lagged debt adversely shocks GDP. This indicates a relatively significant negative long-run effect of debt on GDP. The findings align with Stungwa's (2024) study, which examined the symmetry or asymmetry of the link between economic growth and external debt in South Africa using annual time series data spanning from 1985 to 2021.

Table 3 shows that the coefficient of CONS indicates that a one-unit increase in the change in consumption (CONS) leads to an increase of 0.6557 in the dependent variable (GDP) and is statistically significant at 1%. This implies that the changes in consumption strongly and significantly affected GDP in the short run. Furthermore, in the long run, CONS has a positive coefficient value of 0.570728 that is statistically significant at 1%, implying that there is a huge positive impact of the lagged consumption on GDP. This implies that consumption is bound to have a significant and meaningful long-run influence on the GDP.

The study found GOV and INT to be statistically insignificant at 10%, both in the short and long run.

Table 3: ARDL Short run results.

Variable	Coefficient	P-value
D(CPI)	0.258803	0.0001
D(GCF)	0.086727	0.0001

D(CONS)	0.655735	0.0000
D(EXCR(-1))	0.030405	0.0036
D (DEBT (-1))	0.012127	0.0299

Source: Author compilation E-views 13

Table 4: ARDL Long run results.

Variable	Coefficient	P-value
GOV	-0.013448	0.6713
INT	-0.002070	0.9574
GCF(-1)	0.107638	0.0080
EXCR(-1)	-0.035560	0.0554
DEBT(-1)	-0.011221	0.0677
CPI(-1)	0.120120	0.1117
CONS(-1)	0.570728	0.0000
C	0.017448	0.9720

Source: Author compilation E-views 13

Error Correction Model

Table 5: The estimated ECT from the study; the speed of adjustment towards the long-run equilibrium is negative and significant at 1%, as expected. This would mean the model would correct itself at approximately 60.89% per year. High speeds of adjustment in the study indicate that full convergence will be quicker.

Table 5 ARDL Error Correction

Variable	Coefficient	P-value
CointEq(-1)	-0.608986	0.0000

Source: Author compilation E-views 13

Diagnostic Tests

The probability values for the functional form problem, the Jarque-Bera, the Breusch-Godfrey LM test, and the ARCH are all higher than the level of significance at 0.05, at 0.4560, 0.3787, and 0.8550. The results in Table 6 indicate that the model does not suffer from normality, serial correlation and heteroscedasticity.

Table 6: Diagnostic tests result

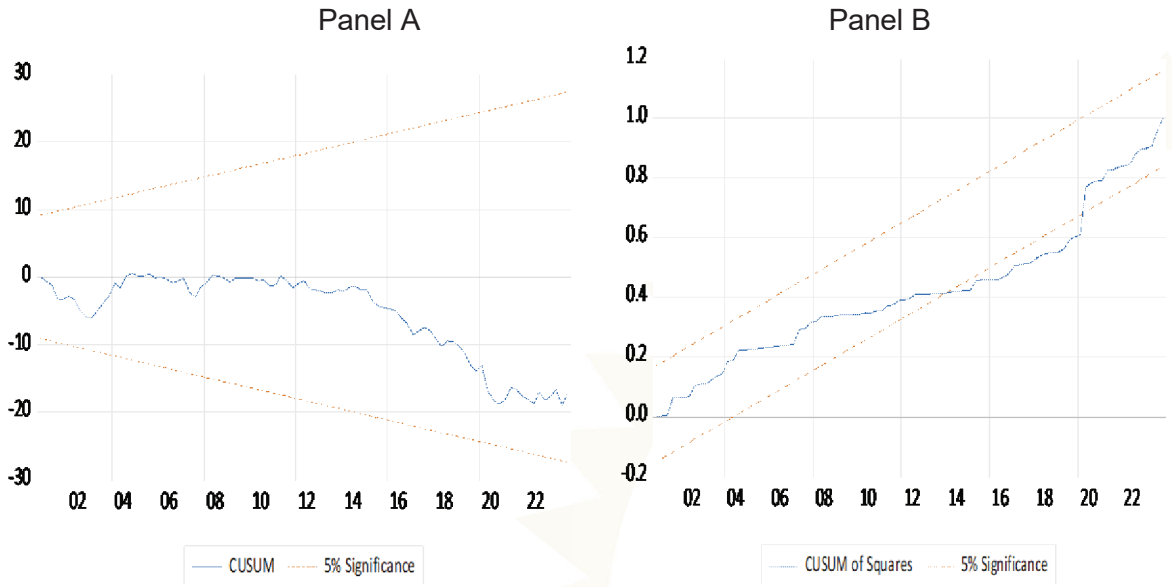
Test	Null hypothesis (Ho)	p-value	Decision
Jarque-Bera	Residuals are normally distributed	0.457596	Accept H0. Residuals are normally distributed
Breusch-Godfrey LM test	No serial correlation	0.3787	Accept H0- no serial correlation
ARCH Test	No Heteroscedasticity	0.8550	Accept H0. No Heteroscedasticity

Source: Author compilation E-views 13

Stability Test

Given that the cumulative total stays between the two 5% critical lines, Figure A Panel 1 CUSUM test findings indicate that there is parameter or variance stability during the sample period under investigation. However, Panel B show that CUSUM of squares (CUSUMSQ) falls outside the critical values at the 5% level over time and then returns within those bounds. This suggests that while there may have been a temporary structural break in the model, the relationship has stabilized in the long run. During the period from 2013Q4 to 2020Q1, South Africa experienced several notable policy shifts that could have contributed to economic changes, notably: The government-initiated discussions around land reform, including the potential for expropriation without compensation. This generated significant political and economic debate, impacting investor confidence. The exposure of corruption and state capture allegations, particularly related to the Gupta family and their influence in state affairs, led to shifts in governance and public policy.

Figure A: Recursive Test



Source: Author computation E-views 13

CONCLUSION AND RECOMMENDATIONS

The Keynesian theory, while supported by some who place great emphasis on the role of government in the stabilisation of the economy through fiscal and monetary policies, has been criticised by others in light of South Africa's economy. The study identifies a positive and significantly impactful relationship between consumption and gross domestic product. This suggests that consumption has the potential to stimulate gross domestic product significantly, both in the short and long run. These results therefore support the hypothesis postulated by Keynesian theory. Keynes supported the use of government spending during declines in economic activity to stimulate demand. This could be achieved either by giving aid directly to households to enhance consumption or by increasing government spending. This became apparent when it occurred during the global financial crisis in 2008, and during the COVID-19 epidemic, the government took stimulus measures to boost aggregate demand. Such measures are in total agreement with the Keynesian theories. Thus, as the study aims to raise aggregate demand, it is recommended that the South African government should continue to implement the necessary economic stimulants for the betterment of the economic indicators based on Keynes' theory.

Similarly, investment's implication for propelling economic activity and its relationship to aggregate demand are supported by the Keynesian hypothesis. In line with the recommendations of the Keynesian theory of investment, the study discovered a significant short- and long-run link between gross capital formation and gross domestic product. In order to stabilize investment levels during economic downturns, Keynes argued for government intervention. This could involve economic measures like more public spending or tax breaks to promote private investment. The study recommends that in order to continue influencing investment decisions, the government and the South African Reserve Bank should manage and monitor expectations, interest rates, and government policy.

The Keynesian theory of government spending is said to be relevant in the South African context, particularly in addressing economic challenges such as unemployment, inequality, and slow growth. Government spending is seen as a crucial tool for stimulating aggregate demand, especially during periods of economic downturn. In South Africa, significant public expenditure is directed toward infrastructure, education, and social services. However, the study found government spending to have a negative and statistically insignificant relationship with gross domestic product. South Africa's government allocates substantial resources to social programs, such as grants and subsidies, which act as automatic stabilisers during economic downturns. These programs help maintain consumption levels among low-income households, and evident during the COVID-19 pandemic. Keynes' theory aims to reduce unemployment and stimulate growth. However, challenges like persistent high unemployment rates and structural inequalities remain significant factors. South Africa faces fiscal constraints, including rising public debt and budget deficits. While Keynesian theory supports deficit spending during downturns, concerns about long-term fiscal sustainability complicate policy decisions. Inefficiencies in public spending

and governance issues can hinder the effectiveness of Keynesian policies. The study therefore recommends that the government should ensure that funds are utilised effectively for maximum impact of the Keynesian theory. While the government aims to stimulate demand and support growth, ongoing structural issues and fiscal constraints must be carefully managed to ensure the effectiveness of such policies.

According to Keynesians, foreign trade is viewed as a part of aggregate demand and hence influences total economic activities (GDP). Exports add to the demand, whereas imports reduce domestic demand. The exchange rate used as a proxy for net exports was found to have significant conflicting results in the short and long run. This is not surprising, as the economy of South Africa depends a lot on imports, especially for industries such as mining, agriculture, and manufacturing. Exchange rate fluctuations form an important basis in the dynamics of trade for South Africa. A weaker rand improves the competitiveness of exports and raises the prices of imports. Global economic trends affect the trade of South Africa. Global downturns reduce demand for South African exports, and therefore, government policies need to support domestic demand through fiscal measures. The study, therefore, recommends that the government of South Africa adopt protectionist policies like tariffs and subsidies that protect the local industries and stimulate exports in line with Keynesian advocacy for intervention in trade. This includes de-dollarisation.

The study further used national government debt as the control variable of the Keynesian theory and found that DEBT has a positive effect in the short run and a negative effect in the long run. According to Keynesians, public debt is an indispensable means for financing government expenditure, particularly when the economy is in recession. It advocates for the government to keep or raise spending without increasing taxes at once. The Keynesian theory of debt within the South African context underlines how public borrowing can become an instrument to stimulate economic growth and moderate economic slowdown. Given the now-justified concerns with regard to high levels of debt, focus needs to fall on debt being utilised in such a manner that long-run stability and growth in the economy are secured. The study, therefore, recommends that the government ensure that debt is employed in ways that will enable long-run economic impact.

Interest rates and the consumer price index were also used in the study as control variables to test Keynes' hypothesis. The consumer price index was found to be favourable in the short run, but later insignificant in the long run. The findings also showed that the interest rate effect in the long- and short-run is insignificant. Interest rates are argued by Keynesian economic theory to largely influence investment decisions. An increase in aggregate demand can be experienced simply because lower interest rates have made borrowing cheaper for both consumers and firms. The interest rate and CPI relationship is a basis for firms' investment decisions concerning alternative choices. In instances of high inflation, higher interest rates could result in the prevention of investments and slow economic growth. The study thus recommends that the government of South Africa, to avoid inflation that might have a contractionary effect on the economy, should adopt tighter monetary policies, such as increasing interest rates. Conversely,

this should be reversed for a deflationary economy, suggesting the interest rates should be lowered (Stungwa, 2024).

List of References

Arestis, P., & Sawyer, M. (2003). Keynesian economics and the Keynesian revolution in economic policy. Edward Elgar Publishing.

Aron, J., Muellbauer, J., & Prinsloo, J. (2009). The impact of the global financial crisis on South Africa. *South African Journal of Economics*, 391-409.

Bhorat, H., & Tseng, D. (2014). Labour market regulation and economic growth in South Africa: The case of unemployment. *Journal of African Economies*, 332-347.

Dickey , A., & Fuller, W. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. Journal of the American Statistical Association, 74(366a), 427-431. Retrieved from https://doi.org/10.1080/01621459.1979.10482531

Fedderke, J., & Simkins, C. (2009). Economic growth in South Africa since the late nineteenth century. *Economic History of Developing Regions*, 200-243.

Fourie, F. (2011). The South African growth experience (1947–2004) and Keynesian policy responses. *Journal of Economic Studies,* 262-285.

Friedman, M. (1968). The role of monetary policy. *American Economic Review,* 1-17.

Keynes, J. M. (1936). The General Theory of Employment, Interest, and Money. Macmillan.

Madzivanyika, M., & Zhanje, S. (2022). SSIRC 2022-166 The Impact of Savings and Investments on Economic Growth in South Africa. An Empirica Anaylisis Using ARDL Technique . SSIRC 2022 Conference proceedings (pp. 1202-1214). NWU: researchgate.net.

Pesarn, M., Shin, Y., & Smith, R. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326.

Stungwa, S. (2024). Is External Debt an Impediment to the South African Economy? *Public Sector Economics,* 48(1), 103-124.

Treasury, S. A. (2021). Medium Term Budget Policy Statement. Pretoria: Government Printer.

World Bank. (2021). South Africa Economic Update: Tackling inequality in times of crisis. Washington DC: World Bank.