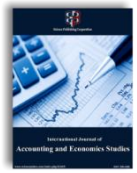
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Research paper



The effects of fiscal operations on economic growth and stability in Nigeria: empirical evidence based on time series data

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Abstract

This study examines the effects of fiscal operations on the economic growth and stability with the view to identifying its significance on real output growth and sustainable development. The study utilises an annual time series data covering the period of 1980 to 2015 and further adopts an ARDL model for estimation. The estimated model is sub-divided into two: the Baseline model and the Alternative model. While the former measures the effects of economic growth, the latter accounts for the effects of economic stability. The ARDL Bound testing show the existence of long-run relationship among the examined variables in both the two models, with corresponding F-statistic values of 7.62 and 6.67, respectively. The overall results indicate that fiscal operations lead to economic growth as shown by the Baseline model; and it also leads to economic stability as revealed by the Alternative model. It can therefore be concluded that any meaningful spending with corresponding taxation will improve the public sector performance and produce a desirable outcome on output growth and strengthen the capability of fiscal operations in terms of economic management. There is an urgent need to ensure that appropriate fiscal operations are conducted and do not result in excess liquidity beyond the absorptive capacity of the economy.

Keywords: *Fiscal Operations; Economic Growth; Economic Stability; ARDL Model.*

1. Introduction

The strand of literature investigating the macroeconomic effects of fiscal policy on output growth has gained impetus since the aftermath of global financial crisis and price hike of 2007-2008. Government of several countries have responded to the financial and economic crisis through the use of fiscal policy measures. The widespread adoption of this policy has renewed economist interest in the impacts of fiscal policy to accelerate economic and social development. The impact of these fiscal measures can produce the required leverage needed for obtaining sustainable economic growth. This is in accordance with the theoretical postulation of Keynes who argued that increasing the public expenditure and lowering the taxation rates is an essential approach to stimulate aggregate demand, while decreasing expenditure and increasing tax rates when economic boom is imminent. Keynes suggested for this approach to be employed during the period of recession as an indispensable policy requirement for building a solid framework towards macroeconomic growth and full employment. Hence, the policy came into the limelight as a means of controlling the tempo of economic activities.

On the contrary, the neoclassical school is against the expansionary fiscal policy of the Keynesian doctrine, due to the assumption that government attempt to increase aggregate demand simply leads to crowding-out of private sector. Because the increase in government expenditure leads to higher public borrowing thereby reducing the availability of fund meant for private sector investment. Rather than focusing on cyclical fluctuations, the argument of Neoclassical is relatively based on long-term growth. The cyclical disturbances will weaken and disappear while long-term growth will definitely influence the level of social welfare. Instead of reducing the cyclical unemployment caused by the economic recession, this school of thought focuses on decreasing the natural rate of unemployment which is caused by public policies. Therefore, understanding the role of fiscal policy decisions in influencing the growth prospect is of immense significance since the public sector has direct control on issues related to fiscal framework.

Given their economic conditions, developing countries within the African continent have witnessed several historic transitions ranging from controlled economy to free market-oriented system. In responding to the challenges associated with the transition, policy makers have a sustained interest in the role that fiscal policy plays in economic growth. Interestingly, fiscal policy is fundamental to the sustenance of both developed and developing economy since the impact of public expenditure can affects the disposable income of both the household and the corporate establishment. In order for the policy to encourage output growth, government engages in financing direct investment which the private sector cannot provides in sufficient quantities to the society, and the adequate provision of certain public services which are fundamental for productive economic activities and long-term investment.

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Despite the significance of fiscal policy towards economic management, the potentials for growth and sustainable development are yet to be realised in the Nigerian economy. An essential constraint to this situation is the growing inefficiency in macroeconomic operations most especially the fiscal policy. This has resulted to misappropriation of public fund, lack of policy harmonisation, and weak sectoral linkages among others. This necessitated to raise a research question with the view to guiding this study thus; can the fiscal operations of the Nigerian economy leads to output growth and stability both in the short-run and long-run period? In addition, lack of clear consensus and theoretical indications on the effects of fiscal operations on economic growth combined with other similar factors contributed to create a large vacuum in the literature which requires an in-depth investigation. This lack of consent can be attributed to issues related to empirical studies including parameter heterogeneity, model uncertainty, endogeneity and measurement error, etc. In spite of the substantial amount of previous studies on the relationship between fiscal operations and economic growth, the literature is deficient in a number of ways including failure to consider the significant impacts of economic stability in developing countries; and inability to recognise the influence of external shocks on macroeconomic fluctuations in Nigeria.

In lieu of that, this study aimed at investigating the effects of fiscal policy operations on economic growth and stability. To do this, a comprehensive review of the theoretical and empirical literature surrounding the operations of fiscal policy on economic growth is examined, and further provides an empirical estimation based on two dynamic models (the Baseline and the Alternative) which control for the effects of economic growth and economic stability, respectively. The issue of whether fiscal policy can affects output growth and stability is of utmost importance to the Nigerian economy, given the commanding role of government expenditure and oil revenue towards stimulating sustainable growth and development. Using annual time series data covering three decades, the paper examines how changes in fiscal components can affects economic growth (measured by GDP) and economic stability (measured by CPI) in both the short-run and the long-run period. The study contributes to the literature by providing a growth model which is empirically embedded on the need for government policy to attain the desired level of growth.

The rest of the paper is organised as follows: section 2 deals with the theoretical framework which provides the epistemological propositions on the relationship between fiscal policy and economic growth according to the views of Keynesian, Classical and Neoclassical school of thought, respectively; section 3 provides a comprehensive review of the empirical literature taking into cognisance the divergent views and inconsistent conclusions on the impact of fiscal policy in both developed and developing economies; section 4 presents the data collected and methods of analysis employed to estimates the empirical model according to the Baseline model and Alternative model ; section 5 provides the estimated findings for this study including the results of diagnostic tests; finally, section 6 provides a detailed conclusion and offer some policy suggestion based on the estimated findings.

2. Theoretical framework

The approach of fiscal policy can be rooted based on the epistemological contributions of the British economist; John Maynard Keynes who postulated that government can influence the level of macroeconomic output through simultaneous manipulation of expenditure and tax. The collective impacts of an increase in public expenditure and a reduction in taxes usually pull an economy out of a recession, while a decrease in expenditure and an increase in taxes tends to slow down an economic boom. Hence, it is an essential element in controlling the cyclical fluctuations or building a solid framework for sustainable growth (Abdiweli, 2005). The growing outcome of this manipulation leads to increase in employment rate, aggregate output and sustainable economic growth. On the other hand, economic growth refers to an aggregate increase in the capacity of an economy to produce goods and services, compared from one period of time to another. It can be measured in nominal or real terms, the latter of which is adjusted for inflation. It is the existence of a steady long-term increase in real GDP and improvement in living standards. Given the fact that fiscal policies impact on economic growth and development, it is not surprising that they are interrelated (Laura, 2008; and Macek, 2014). Evidence from endogenous growth theory as supported by Barro (1990) assumed that fiscal policy can affect the level and growth of aggregate output.

In the classical view, increase in public expenditure (expansionary fiscal policy) will lead to decrease in net export, and further, heighten the effects on aggregate output and income. When the public sector increases the level of borrowing, the rate of interest will attract an inflow of foreign capital in the form of investment (Onuchukwu, Ofoezie, and Ntoegah, 2006). All things being equal, the rate of returns on the issued bond is relatively higher in a country executing expansionary fiscal policy. As a result, the capital inflow will increase the demand for the local currency, since purchasing a foreign bond requires the use of local currency by the foreigner. Due to the high demand for local currency in the market, the value of such currency will relatively increase. Henceforth, locally-manufactured goods will turn-out to be expensive to foreigners, while foreign goods will cost less. Subsequently, the export level will decrease while the import level will increase (Macek, 2014; and Kneller, Bleaney & Gemmell, 1999). Consequently, the overall effects of this scenario include the deterioration in the balance of payment due to excessive importation, an increase in unemployment rates, and the general decline in aggregate output.

In a similar perspective, the neoclassical school are of the assumption that real output is determined by the supply side. They argued that an increase in aggregate demand higher than aggregate supply will be inflationary in the long-run and not affecting the level of output growth. Instead, it is the supply factors that encourage the growth of output and further increase the productive capacity of the economy (Strulik & Trimborn, 2009). In addition, the neoclassical school is against the expansionary fiscal policy of the Keynesian school, due to the assumption that government attempt to increase aggregate demand simply leads to crowding-out of the private sector. Because increase government expenditure leads to higher public borrowing thereby reducing the availability of fund meant for private sector investment. The argument of Neoclassical is relatively based on long-term growth rather than controlling the effects of cyclical fluctuation. The cyclical disturbances will weaken and disappear while long-term growth will definitely influence the level of social welfare. Instead of reducing the cyclical unemployment caused by the economic recession, this school of thought focuses on decreasing the natural rate of unemployment which is caused by public policies. In the presence of changing economic circumstances, the neoclassical school holds the view that market-economies will continually be self-adjusted toward a new equilibrium to provide the full employment and stable price. While the Keynesian argued that real economies tend not to behave in such manner. To ensure full employment and stable price, economies need to be controlled by the public sector. The public sector is expected to perform the opposite functions of what others are doing in the economy in order not to act as a substitute of the private sector.

3. Review of the literature

Studies on the impact of fiscal policy has received greater attention in the literature due to its active role in economic recovery. Given the deficiency of monetary policy to provide additional stimulus in developing countries due to underdeveloped financial system, the fiscal policy becomes an essential policy tool for controlling the business cycle fluctuations. Several measures of fiscal policy are adopted by numerous countries across the globe with

the aim of attaining certain macroeconomic objectives. Despite the large number of empirical studies on the fiscal operations, there is no consensus about the effects of fiscal policy on the economic growth in the literature. From the theoretical perspective, there are three approaches that suggested the possible effect among the examined variables namely: Keynesian, Classical and the Neo-classical propositions, respectively. In view of that, this study provides and synthesis the literature based on the dominant perspective of Keynesian and Classical as observed from the literature. In addition, given the conclusion of other studies, a mixed reaction is identified hence setting no direct relationship among the variables of interest.

Furthermore, the fundamental assumptions guiding the empirical literature are summarised as follows: (1) The economy is operating below the full equilibrium level; (2) The public spending is channelled to productive investments to increase the growth of output and national income; (3) Expansionary fiscal policy deteriorates the incentives to invest in human and physical capital, therefore leads to decrease in output level; (4) Lower fiscal stimulus which enhances productivity level, leads to output growth due to the nature of utility function assumed for the private agents; (5) Productive expenditures that influence the marginal product of private capital, leads to output growth. Otherwise, it is classified as growth-retarding through decreasing the level of output and national income.

3.1. The keynesian effect

In the literature, studies that support the positive impact of fiscal policy includes: Ogwuanyi and Ogwunta (2017) examine the effects of fiscal policy variables on the economic growth of sub-Saharan African countries using an ex-post facto research design which enabled the study to make use of secondary data from various sub-Saharan African countries in a panel least square regression. Annual dataset covering the examined sub-Saharan African countries under considerations are obtained spanning the period of 1990 to 2012. The panel data estimation approach under the fixed-effect and random-effect are estimated and the result shows a positive relationship between fiscal components (government expenditure and taxation) and economic growth among the examined sub-Saharan African countries. Similar to this include the study of Cyril (2016) who examines the effects of fiscal policy and further analysed how various elements of the fiscal policy impacted on the economic growth of Nigeria. Annual time series data covering the period of 1985 to 2015 is used for estimating the relationship using the multiple regression model and descriptive analysis. Results indicate that both the fiscal variables (government expenditure and taxation) have a positive effect on the economic growth of Nigeria within the period under consideration.

In addition, Fan, Minford and Ou (2016) investigate whether the Fiscal Theory of the Price Level (FTPL) can explain UK inflation in the 1970s and compare it with the different policy in the 1980s. The study further construct the FTPL as a structural model for the episode and compare it with the alternative Orthodox model testing each against the data; the models have a reduced form that is common in form but each model is over-identified and distinct numerically. Indirect inference is use to test which model could be generating the VECM approximation to the reduced form, but neither models were rejected. The paper concludes that, even though the FTPL model substantially outperforms the orthodox model, these two models may produce similar reduced forms and can be identifiable by the detailed differences within these reduced forms and cannot therefore be confused with each other. Fiscal policy has a significant role in this weighted model towards determining inflation within the sample period.

Furthermore, Trebicka (2015) examines the effects of fiscal policy on the economic growth of Albania. The paper uses time series data covering the period of 1994 to 2014. Given that Albania is a small and open developing country, 3 fiscal variables are used namely; profit tax, government expenditure and external debt. Cointegration technique and error correction model are employed as the techniques of analysis. Estimated findings from the analysis indicate a positive effect between fiscal policy and the economic growth in Albania for the period under consideration. Similarly, Noman and Khudri (2015) examine the impact of fiscal and monetary policies on the economic growth in Bangladesh using annual time series data covering the period of 1979 to 2013. The study employed multiple linear regression model and trend analysis as techniques of estimation to explore the effects of the examined variables on output growth. Results indicate both the monetary and fiscal policy variables to have a significant positive impact on economic growth.

Likewise, Victor and Eshenake (2015) investigate whether fiscal policy matters in the developmental process of Nigeria and further examine its effects on the economic growth. The paper uses annual time series data spanning the period of 1980 to 2013 to evaluate the relationship among the existing variables. The techniques of analysis utilised includes the cointegration test and the error correction model. Result shows that fiscal policy with its associated components have a positive effects on the economic growth within the sample period. Also, Audu (2012) evaluates the causal relationship between money supply, fiscal deficits and exports as a means of analysing the impact of policy on the growth of the Nigerian economy between 1970 and 2010 using time series data. The study utilised the error correction model and two band recursive least square to test the stability of the Nigerian economy, and further examine the effects of money supply, fiscal deficits, and exports on the relative effectiveness of fiscal policies within the sample period. Results established that fiscal policy has a significant positive effects on the output growth of the Nigeria economy.

More supportive evidence is provided by Milova and Abazi (2014) who examine the effects of fiscal policy on endogenous model with the aim of evaluating its significance on the economic growth of Albania. The study uses quarterly time series data covering the period of 2005 to 2012 to measure the relationship between the examined variables in the model. Johansen cointegration test and granger causality test are the techniques use for the analysis. Estimated results show that fiscal policy has a positive effect on economic growth. In other words, fiscal policy has the potentials to keep low taxes and direct spending expenditure towards primary sector with the view to encourage business climate and output growth in the economy. In addition to this, Zagler and Durnecker (2013) examine the relationship between fiscal policy and economic growth by exploring the literature and also present a unifying framework for the analysis of long run growth implications of government expenditures and taxation. The study adopted a simple model of innovation driven endogenous growth to include several categories of expenditure and tax rates in Austria. Using a segregated approach and a descriptive analysis on the examined variables, result shows that fiscal policy components have a positive effect on the growth rate of the economy.

In another related development, Nazir, Anwar, Irshad and Shoukat (2013) examine the short-run and long-run impacts of fiscal policy component on the economic growth of Pakistan by employing time series data covering the period of 1980 to 2012 obtained from the Pakistan Economic Survey. Using the Johansen co-integration technique and error correction model, results established that fiscal policy is very essential for macroeconomic stability of the economy and for attaining sustainable economic growth. In order words, fiscal policy is vital for meaningful economic progress and its associated components are more meaningful for long run growth than in short-run period in Pakistan. Hence the structure and composition of government spending and taxation are most significant to make fiscal policy an effective policy strategy. To provide more support, Joharji and Starr (2010) examine the relationship between government spending and non-oil GDP in the case of Saudi Arabia using a time series data covering the period of 1969 to 2005. The study employed the cointegration analysis to measure how increases in government spending may affects the rate and level of output growth. Results show that increase in public expenditure (as a fiscal variable) has a positive and significant long-run effects on economic growth within the sample period.

Furthermore, Agu, Okwo, Ugwunta and Idike (2015) examine the impact of various components of fiscal policy on the Nigerian economy using time series data from 1961 to 2010. The study utilised a descriptive and analytical approach to demonstrate how the contribution of government fiscal policy affect or explain economic growth, while ordinary least square regression is obtained to determine relationship between economic growth and the components of fiscal policy. The study findings show that both the public spending and taxation have a positive effect on the economic growth. Likewise, De Paula and Pires (2013) examine the effects of fiscal policy after the global recession in Brazil with aim of assessing its expansionary or contractionary evidences. The authors explored the literature to demonstrate how the fiscal expansion assist in growing the economy grow, and that fiscal contraction tends to reduce output and employment in the short term. However, using a descriptive and analytical approach to present the arguments, evidence is adequately in support of adopting expansionary fiscal policy to combat recessions and menace of lower output growth. The results observed in those countries constitute evidence in favour of a more flexible and coordinated economic policy framework.

Similarly, Abubakar (2016) investigates the effect of fiscal policy shocks on output and unemployment in Nigeria under the Keynesian framework and further employ the Structural Vector Autoregression (SVAR) methodology to analyse annual series on the relevant variables for the sample period covering 1981 to 2015. In addition, Johansen cointegration test confirms the existence of long-run relationship among the variables. Estimate from the SVAR model shows a positive and significant effect of both public expenditure and revenue on output growth, hence consistent with the theoretical implication that fiscal policy exert a positive effect on economic growth. Equally, Ahmad and Wajid (2013) investigate whether the various components of fiscal policy affects economic growth in Pakistan within the framework of endogenous growth model taking into consideration the linear combination among all the elements of budget constraint. The study employed an Autoregressive Distributed Lag (ARDL) model with annual time series data covering the period of 1979 to 2009 for the analysis. Results indicate that fiscal policy and its associated components are significantly and positively affecting economic growth in Pakistan within the period under review.

Using a different approach, Olasunkanmi (2013) examine the impact of fiscal policy on sectoral output in Nigeria in a multivariate cointegration model over the sample period covering 1981 to 2011. The study adopted an endogenous growth model framework in line with Barro (1990) and Barro and Sala-i-Martin (1991, 1992) using the Ak model. Estimated results using the multivariate cointegration technique through the Johansen cointegration test confirmed the existence of long run equilibrium relationship between the fiscal policy components and the various sub-sectors included in the model. This implies that fiscal policy has a positive and direct relationship with economic growth within the period under review. In a related findings, Odior, E.S. (2014) examines the how the different fiscal policy instruments (government expenditure and taxation) affect social welfare in Nigeria and also utilised a multivariate econometric regression modelling technique to estimate the relationship between the real per capita GDP and fiscal policy variables categorized into capital and recurrent heads and disaggregated across productive and unproductive heads of government expenditure in Nigeria. Results indicate the existence of a positive relationship between the roles of fiscal policy and the welfare since the major factors like employment, price stability, and infrastructural development are all outcome of appropriate public expenditure. This implies the existence of a positive impact between the productive government spending and the economic growth.

Moreover, Abdon, Estrada, Lee and Park (2014) investigate the relationship between fiscal policy and economic growth in developing Asia. However, there are conceptual evidence on why fiscal policy (the composition of taxes and government spending) can have a significant effect on growth. The study utilised an annual data covering the period of 1990 to 2011 and adopted a descriptive approach to present the argument. Findings show that both the components of fiscal policy (expenditure and tax) established a positive and significant impact on economic growth. In addition, Igwe, Emmanual and Ukpere (2015) examine the impact of fiscal policy variables (government expenditure and taxation) on economic growth in Nigeria. The study adopts a growth accounting framework that specifies economic growth as a function of the fiscal policy variables. Using a time series data for the period spanning 1970 to 2012, the study test for the existence of the relationship among the examined variables using the Johansen cointegration test, error correction model and the granger causality technique. Estimated findings show the presence of long-run and positive relationship between fiscal policy components and economic growth.

With regard to the manufacturing sector, Richard (2014) examines the impact of fiscal policy on the manufacturing sector output in Nigeria. As shown by the literature from both developed and developing economies, fiscal and monetary policies have the capacity to influence the aggregate economic activities if they are well managed. As such, an ex-post facto design (quantitative research design) is used to facilitate the study. Findings show that government expenditure exert a positive and significant effect on manufacturing sector growth, and the existence of long-run relationship between fiscal policy and manufacturing sector is established. However, Ismaila and Imoughele (2015) examine the effect of fiscal policy variables on economic growth in Nigeria. Fiscal policy variables over the sample period of 1986 to 2012 are obtained for the analysis. Johansen cointegration test and the error correction model are utilised, hence the result shows the presence of long-run and positive relationship between fiscal policy variables (except budget deficit) and economic growth. Therefore, fiscal policy has the ability to induced economic growth in Nigeria through government expenditure and investment.

Notwithstanding, Udokang (2013) examines the relationship between fiscal policy and the economic growth of Nigeria using annual series data covering the period of 1970 to 2011. The study adopted the Johansen Cointegration Test, Vector Error Correction Mechanism (VECM) Test and Granger Casualty Test for data analysis. Findings indicate the existence of positive and significant causal relationship between fiscal policy components and economic growth for the period under review. Again, Kakar (2011) investigates the impact of fiscal variables on the economic growth of Pakistan using time series data covering the period of 1980 to 2009. To estimate the model, Cointegration, error correction techniques and the Granger causality test are employed to establish the existence of possible relationship and determine the direction of causality, respectively. Findings show that fiscal policy is an essential policy tool for sustainable economic growth in Pakistan and further results also indicate that fiscal policy measures are more of long-run phenomena rather than short-run.

Furthermore, Kostakis (2014) examines the effect of fiscal policy on economic growth in a sample of 96 countries spanning the period of 1990 to 2010 using the cross-country dataset. Ordinary Least Squares (OLS) regression analysis and the Extreme Bound Analysis (EBA) are mainly estimated in order to investigate whether public investments, human capital, and political stability affect growth controlling for initial output and human capital levels. Findings show that government consumption and other fiscal variables have a statistical significance and positive effects on the economic growth. Likewise, Vehbi and Parkyn (2013) examine the macroeconomic effects of fiscal policy in New Zealand using a structural Vector Autoregression (SVAR) model. The model is a five-variable structural vector autoregression (SVAR) framework as developed by Blanchard and Perotti (2005), and further augmented to allow for the possibility that taxes, spending and interest rates might respond to the level of the debt over time. The paper tried to evaluates the dynamic responses of output, inflation and the interest rate to changes in government spending and revenues and analyse the contribution of shocks to New Zealand's business cycle for the period of 1983:1 to 2010:2. Result shows

that the effects of government expenditure shocks in New Zealand appear to be positive but small in the short-run at the cost of higher interest rates and lower output in the medium to long-run period.

In addition, Ryszard and Erico (2014) analyse Fiscal policy rules, and how it matters for better effectiveness of macroeconomic policies in small economies integrated into the global economy. The paper also tried to examine the structural budget surplus (SBS) rule evidence for the Chilean economy and also analyse its effect on selected macroeconomic indicators over time due to economic growth. Thus, SBS becomes a public good with undeniable positive externalities which government authorities are called to provide, and the fiscal policy becomes a useful tool for economic growth, because of its complementary stand for other policy decisions. Descriptive and analytical approach are adopted in analysing facts about a fiscal policy prescriptions successfully applied in Chile. The study established an evidence for the existence of positive relationship between externalities linked to fiscal policy and economic growth.

3.2. The classical effect

Studies that show evidence in favour of the negative relationship between fiscal operations and economic growth includes: Attinasi and Klemm (2016) examine the impact of discretionary fiscal policy on the economic growth of 18 EU member-countries covering the sample period of 1998 to 2011. The paper adopted a static and dynamic panel data techniques to measure the dataset on fiscal measures according to the legislative and budgetary measures rather than on approximation as used by most literature. The study established that fiscal consolidation has a negative impact on the economic growth in short-run, though some specific budget category are found significant. In general, expenditure measures are found to have a marginal harmful effects on output growth compare to revenue measures, although both are statistically insignificant in the model.

Similar to this effect is the contribution of Ialomiţianu, Danu and Bucoi (2016) who examine the results of fiscal policy implementation in Romania, its impact on economic growth and how fiscal policies have influenced the growth of budgetary deficits. The aim is to provide an overview and explore efficient fiscal consolidation strategies that can ensure a stable economic growth through sustainable public finances. The paper adopted a descriptive approach and covers the period of 2007 to 2014 to demonstrate how the various fiscal policy measures implemented by the Romanian government impacted on the economy. Results indicate a negative impact of fiscal policy on output growth, hence the need for considerable fiscal efforts and reforms with a view to creating favourable conditions for sustainable economic growth in the long-run.

Again, In addition to this, Shijaku and Gjokuta (2013) investigate the effects of fiscal policy on the economic growth of Albania by employing an endogenous growth model on a General Method of Moment (GMM) approach. Annual time series data are obtained covering the sample period of 1998 to 2010. The results obtained show that government revenue policies has a higher effect on economic growth than those on government expenditure.

In addition, Boiciuc (2015) assesses the cyclical behaviour of fiscal policy in Romania by calculating the structural deficit and the fiscal impulse for the sample period covering 2000 to 2013. The study employed the structural budget balance indicator to examine the sustainability of fiscal policy and further assess the fiscal impulse. This method is often used to separate the contribution of discretionary fiscal policy from the effect of economic environment. The study concludes that fiscal policy is largely procyclical within the period except in 2013. In the period of 2006 to 2008 – regarded as the economic growth period, the fiscal policy is highly procyclical and continued up to the economic recovery of 2009 to 2012 due to the necessity of decreasing the budget deficit and financing constraints. This scenario has contributed to intensify the business cycle fluctuation even in the recessionary period. Hence, the procyclical feature of fiscal policy during the booms period have consequences on the long term sustainability of fiscal policy.

Furthermore, Masca, Cuceu and Vaidean (2015) identify the main determinant of economic growth among 27 EU member countries of 2013 and further highlights ample policy reforms within the public sector. The paper employed the panel techniques consisting of both the random effects and fixed effects model to estimate the generalised least square and feasible generalised least square methods. The study established that productive investment and public sector positively influences economic growth, while total taxes and total expenditure (fiscal variables) impact negatively on the growth. However, different tax base categories and a reduction in public debt have to be considered in order to achieve a sustainable fiscal policy. Likewise, Muinelo-Gallo and Roca-Sagalés (2013) examine the relationship between income inequality and economic growth through fiscal policy, and also estimate two systems of structural equations with error components through which gross income inequality determines different fiscal policy outcomes, which subsequently affects the evolution of economic growth and net income inequality. The paper employed the Seemingly Unrelated Regression (SUR) model and the Structural Equation Modelling (SEM) over an unbalanced panel dataset of 21 high-income OECD countries during the period of 1972 to 2006. The results indicate that income inequality is a significant determinant of fiscal policy outcomes, and both the expenditure and taxation produces a negative effect on the economic growth.

More supportive evidence is given by Rena and Kefela (2011) who examine the potential impacts of fiscal policy on economic activity, and investigates the economic roles and prospective methods of domestic and foreign debt financing. The study focuses on the methodology of fiscal policy for evaluating the impacts of alternative tax policies and the requirement of debt management among African countries. Annual time series data are obtained from the official publication of the World Bank and are also analysed using the descriptive approach and content-analysis methods. The result shows the effect of administrative lags and lapses in the implementation of fiscal and tax-related policies. Given the negative impact of persistent unsustainable fiscal deficits on many developing countries in Africa, there is now a consensus among interested economies on the need to address the problem effectively. Hence, accuracy of revenue projection is a necessary condition for devising an appropriate framework for managing fiscal deficit in many developing countries.

Similarly, Karagyozova-Markova, Deyanov and Iliev (2013) investigate the impacts of fiscal policy on the economic activities of Bulgaria and provides a range of estimates for the taxation and spending multipliers. The paper tried to compare results of linear VAR models with the output from time-varying parameters Bayesian VAR with stochastic volatility with the aim of investigating changes in the effectiveness of fiscal shocks in Bulgaria over the sample period spanning 1999 to 2011. In all estimations, fiscal multipliers do not exceed 0.4 implying less gain in terms of economic growth from the Bulgarian fiscal policy even during the period of economic downturn, hence supporting the negative relationship between the examined phenomena.

3.3. The keynesian – classical: mixed reaction?

Despite the literature being more divided over the impact of fiscal operations on the strain of Keynesian and Classical school of thought, other studies established a concluding findings base on a mixed reaction. While other fiscal variables are positively affecting economic growth, some are growth-retarding in the same model. As such, findings from these literature can neither be Classical nor Keynesian postulations and therefore includes but not limited to the followings: Quashigah, Abebrese and Pickson (2016) examine the effect of fiscal policy on economic growth in Ghana. To generate the data for estimation, annual data covering the period of 1983 to 2012 are obtained and interpolated into quarterly series. In addition, the Vector Error Correction model (VECM) and Vector Autoregression (VAR) approaches are uti-

lised for the estimation. Findings indicate that tax revenue positively affect economic growth, while government consumption expenditure has a negative and significant long-run effect on economic growth.

Using multi-country analysis, Boldeanu, Tache and Ion (2015) examine the effects of fiscal policy on economic growth among 10 countries of Eastern Europe. According to the article, these countries are selected based on their adopted fiscal framework and similarities of economic development. Panel regression analysis is used to analyse the impact of fiscal variables on economic growth for the countries under consideration. Using two different statistical model for the estimation, result shows that expenditure and public deficit has a positive impact on growth in the first model while revenue, taxes and social distribution reveal a negative effect in the second model.

In a similar approach, Abdenour and Tounsi (2015) investigate the nature of the relationship between fiscal policy and economic growth among 36 developing countries taking into cognisance the existence of possible nonlinear effects of the fiscal policy. Due to the use of the methodology of endogenous thresholds, the iterative procedure for the determination of endogenous thresholds will be employed to allow for the identification of an optimal budget deficit threshold of 5.1%, which makes the relationship between fiscal deficit and economic growth to become non-linear. Below this threshold level, the Keynesian expansionary fiscal policy is effective and significant on economic growth, and above this threshold level, the policy becomes negative hence unfavourable on output growth.

In addition, Moreover, Attinasi and Klemm (2014) investigate the impact of discretionary fiscal policy on economic growth for a sample of 18 EU countries over the period spanning 1998 to 2011. Using static and dynamic panel data techniques, results show that government expenditure based adjustment have a less harmful effects than revenue-based adjustment in the model. In the expenditure scenario, reductions in government investment and consumption have a growth retarding effects on aggregate output. With respect to revenue, increase in the indirect taxes are found to have a particularly strong negative impact. This implies that, while expenditure has a positive effects, revenue established a negative impact on output growth.

Furthermore, Onyinyechi, Ihendinihi, Ekwe and Azubuike (2016) examine the impact of fiscal policy on the economy of Nigeria covering the sample period of 1994 to 2014 using annual time series data. In order to estimate or analyse the data, multiple regression of ordinary least square analysis is employed. Result shows the existence of no significant relationship between government expenditure, tax revenue and the real GDP representing the economy. However, the study established a significant and negative relationship existing between external debts and the real GDP growth.

4. Data collected

Data required for this study are obtained from the official publication of the Central Bank of Nigeria (CBN) covering the period of 1980 to 2015. The choice of this period is based on the fact that it covers different political and economic events in Nigeria. Meanwhile, real values of the variables are utilised with the view to reducing the effects of inflation, which are later transformed into logarithm in order to ensure uniformity of scaling among the variables. The logarithm transformation of the variables allow to obtain the normal distribution of the data. The estimated coefficients in the log-form are the elasticities of the explanatory variables to the output growth, hence, the results will be easy to interpret because elasticity is unit-free; it measures the effect of one percent change in an independent variable on the dependent variable regardless of the units of each variable.

5. Methods of analysis

There is no consensus in the literature regarding the choice of econometrics model for solution whenever there is a shock or fluctuations in the system. As a result, this study employed a standard econometrics method known as Autoregressive Distributed Lag (ARDL) model to analyse the relevant data collected. The ARDL model is sub-divided into two (2) sets of empirical models; namely: Baseline Model and Alternative Model. The interaction of variables in the models will have important implications for estimating the coefficients. Furthermore, a dummy variable is introduced into the two models (Baseline model and Alternative model) to capture the effects of regime switch from military to democracy administration. The general framework for the ARDL model is formulated algebraically as follows:

$$LRGDP_t = \beta_0 + \beta_1 LRTGE_t + \beta_2 LRGTR_t + \beta_3 LRGDD_t + \beta_4 LRDOP_t + \beta_5 LCPI_t + \beta_6 LDUM_t + \mu_t \quad (1.1)$$

Where, LRGDP = Logarithm of Real Gross Domestic Product; LRTGE = Logarithm of Real Total Government Expenditure; LRGTR = Logarithm of Real Government Total Revenue; LRGDD = Logarithm of Real Government Domestic Debt; LRDOP = Logarithm of Real Degree of Openness; LCPI = Logarithm of Consumer Price Index; LDUM = Logarithm of the Dummy Variables. Therefore, this can further be sub-divided into two different empirical models labelled as model 1 and model 2 as shown below:

5.1. Model 1: the baseline model

The baseline model is regressed against real GDP as the explained variable. The model is intended to examine the effects of economic growth due to operations in each fiscal policy components as used in this study.

Going by the traditional analysis of ARDL model, equation (1.1) can be redefined and expressed into an ARDL framework as follow:

$$\Delta LRGDP_t = \varphi_o + \pi_1 LRGDP_{t-i} + \pi_2 LRTGE_{t-i} + \pi_3 LRGTR_{t-i} + \pi_4 LRGDD_{t-i} + \pi_5 LRDOP_{t-i} + \pi_6 LCPI_{t-i} + \pi_7 LDUM_{t-i} + \sum_{i=1}^{p} \lambda_{1i} \Delta LRGDP_{t-i} + \sum_{i=0}^{p} y_{1i} \Delta LRTGE_{t-i} + \sum_{i=0}^{p} \alpha_{1i} \Delta LRGTR_{t-i} + \sum_{i=0}^{p} \beta_{1i} \Delta LRGDD_{t-i} + \sum_{i=0}^{p} \theta_{1i} \Delta LRDOP_{t-I} + \sum_{i=0}^{p} \psi_{1i} \Delta LCPI_{t-i} + \sum_{i=0}^{p} \phi_{1i} \Delta LDUM_{t-i} + \varepsilon_1 \quad (1.2)$$

Where, φ_o = represent the constant term; Δ = represent the first difference operator; π = are the long-run coefficient; λ, y,α, β, θ, ψ, ϕ = are the short-run dynamics; ε_t = is the white noise.

5.2. Model 2: the alternative model

This model is regressed against Consumer Price Index (CPI) as the dependent variable, and it is projected to find out the effects of fiscal operations on the CPI (proxy for macroeconomic stability) and by extension to the aggregate economic performance of the Nigerian economy. The linear framework of this model is given as follows:

$$\Delta LCPI_t = \varphi_o + \pi_1 LCPI_{t-i} + \pi_2 LRTGE_{t-i} + \pi_3 LRGTR_{t-i} + \pi_4 LRGDD_{t-i} + \pi_5 LRDOP_{t-i} + \pi_6 LDUM_{t-i} + \sum_{i=1}^{p} \lambda_{1i} \Delta LCPI_{t-I} + \sum_{i=0}^{p} y_{1i} \Delta LRTGE_{t-i} + \sum_{i=0}^{p} \alpha_{1i} \Delta LRGTR_{t-i} + \sum_{i=0}^{p} \beta_{1i} \Delta LRGDD_{t-I} + \sum_{i=0}^{p} \theta_{1i} \Delta LRDOP_{t-i} + \sum_{i=0}^{p} \phi_{1i} \Delta LDUM_{t-i} + \varepsilon_1 \quad (1.3)$$

The next step in the analysis of ARDL bound test is to estimate the coefficient of the long-run relationship among the variables in

both models. Once an evidence of cointegration relations exists among the examined variables, a long-run model shall be estimated thus:

$$\Delta LRGDP_t = \varphi_1 + \sum_{i=1}^{p} \lambda_{1i} LRGDP_{t-i} + \sum_{i=0}^{p} y_{1i} LRTGE_{t-i} +$$

$$\sum_{i=0}^{p} \alpha_{1i} LRGTR_{t-i} + \sum_{i=0}^{p} \beta_{1i} LRGDD_{t-i} + \sum_{i=0}^{p} \theta_{1i} LRDOP_{t-i} +$$

$$\sum_{i=0}^{p} \psi_{1i} LCPI_{t-i} + \sum_{i=0}^{p} \phi_{1i} LDUM_{t-i} + \varepsilon_{1t} \quad (1.4)$$

Furthermore, after estimating the long-run model, the short-run elasticity of the variables is estimated through the ECM framework of the ARDL model. Hence, the ECM of this study can be derived from equation (1.2) as follows:

$$\Delta LRGDP_t = \varphi_2 + \sum_{i=1}^{p} \lambda_{2i} \Delta LRGDP_{t-i} + \sum_{i=0}^{p} y_{2i} \Delta LRTGE_{t-i} +$$

$$\sum_{i=0}^{p} \alpha_{2i} \Delta LRGTR_{t-i} + \sum_{i=0}^{p} \beta_{2i} \Delta LRGDD_{t-i} + \sum_{i=0}^{p} \theta_{2i} \Delta LRDOP_{t-i} +$$

$$\sum_{i=0}^{p} \psi_{2i} \Delta LCPI_{t-I} + \sum_{i=0}^{p} \phi_{1i} \Delta LDUM_{t-i} + \delta ECM_{t-i} + \varepsilon_{1t} \quad (1.5)$$

Where δ is an error correction form, it indicates the speed of adjustment parameters back to long-run equilibrium after short-run shock. The absolute value of adjustment parameter lies between zero and one. The larger the error correction coefficient is, the faster is the adjustment back to its long run equilibrium after short-run shock (Pesaran & Shin, 1999).

6. Results and discussion

In this section, the results are presented according to the model procedures for estimating the ARDL framework. A unit root test is conducted to determine the stationary properties of the variables since spurious regression and its associated inferences are inevitable when nonstationary data is used for estimation. Afterwards, a cointegration analysis is conducted to determine the possible existence of short-run and long-run relationship among the variables taking into consideration the error correction model. Subsequently, several diagnostic tests are conducted to ensure the reliability of the findings.

6.1. Unit root test

In this study, unit root tests are conducted on the time series data using both the Augmented Dickey-Fuller (ADF) and the Phillip-Perron (PP) tests, respectively. The ADF test uses a parametric autoregression to approximate the ARMA structure of the errors in test regression. While the PP test correct the Dickey-Fuller test with bias induced by the omitted autocorrelation. The result is presented as follow:

The findings presented in Table 1.1 shows the results of the unit root test based on the ADF and PP approaches. The Schwarz Information Criterion (SIC) was automatically selected as the chosen lag length for the ADF test. Although, the results are almost identical to each other for each variable when both Akaike Information Criterion (AIC) and SIC are used for selecting significant lags in ADF test. Meanwhile, the Newey-West Bandwidth is selected for the PP test, hence only results from the latter show mixed findings. In the ADF test, the result indicates that all the examined variables are stationary at first difference since their absolute value of the ADF statistics are greater than the critical values in both 1%, 5% and 10% significance levels, respectively. On the other hand, the PP test shows that only LGDP and LCPI are found to be stationary at level as indicated by 1%, 5% and 10% significance levels in the model, while the remaining series are first difference stationary using both constant and linear trend.

Table 1.1: Summary Findings of the ADF and PP Unit Root Tests

Augmented Dickey-Fuller test			
Variables	Level	First difference	Decision
LGDP	t-stat -2.26 Prob. 0.4381	t-stat -15.08*** Prob. 0.0000	1(1) stationary
LTGE	t-stat -0.50 Prob. 0.9782	t-stat -5.19*** Prob. 0.0028	1(1) stationary
LGTR	t-stat -1.14 Prob. 0.9067	t-stat -4.35*** Prob. 0.0080	1(1) stationary
LGDD	t-stat -1.42 Prob. 0.8355	t-stat -4.51*** Prob. 0.0052	1(1) stationary
LDOP	t-stat -0.43 Prob. 0.9984	t-stat -4.83*** Prob. 0.0030	1(1) stationary
LCPI	t-stat -0.47 Prob. 0.5010	t-stat -7.84*** Prob. 0.0000	1(1) stationary
Phillips-Perron test			
Variables	Level	First difference	Decision
LGDP	Adj. t-stat -24.94*** Prob. 0.0000	Adj. t-stat -135.28 Prob. 0.0000	1(0) stationary
LTGE	Adj. t-stat -1.90 Prob. 0.6327	Adj. t-stat -7.00*** Prob. 0.0000	1(1) stationary
LGTR	Adj. t-stat -1.19 Prob. 0.8960	Adj. t-stat -5.87*** Prob. 0.0001	1(1) stationary
LGDD	Adj. t-stat -1.67 Prob. 0.7425	Adj. t-stat -4.50*** Prob. 0.0053	1(1) stationary
LDOP	Adj. t-stat -1.61 Prob. 0.7660	Adj. t-stat -7.58*** Prob. 0.0000	1(1) stationary
LCPI	Adj. t-stat -4.57*** Prob. 0.0044	Adj. t-stat -23.50 Prob. 0.0000	1(0) stationary

Note: *** indicates significance at 1%, 5% and 10% levels.

6.2. Results for model 1: the baseline model

In this model, the effects of fiscal operations on the economic growth is estimated taking into considerations the other fiscal components in the model. One of the basic reasons for estimating an ARDL model is to utilise it as a platform for applying the Bound test. The model utilises both the F and t-statistics to test the significance of lagged levels of the variables in a univariate error correction system when it is unclear if the data generating process underlying a time series is trend or first difference stationary. The result for this Bound test is given as follows:

Table 1.2: Result for the Bound Test

Variables	F statistic	Decision
LGDP, LTGE, LGTR, LGDD, LGDOP, LCPI.	7.62*	Cointegration
Critical Value Bounds		
Significance	Lower Bound	Upper Bound
10%	2.75	3.79
5%	3.12	4.25
2.5%	3.49	4.67
1%	3.93	5.23

Note: * indicates significance at 10%, 5%, 2.5% and 1% level, respectively.

The result in Table 1.2 indicates that the F- statistic for this Bound test is 7.62, which is greater than the critical values of both the lower and the upper bounds at all levels of significance, respectively. As a result, the null hypothesis of no long-run relationship shall be rejected based on this empirical finding. This implies the existence of a cointegrated relationship between economic growth and other fiscal components in the model. Furthermore, the coefficient of determination (R^2) is 0.824288, which implies that about 82% of total variation in economic growth is explained by the variation in fiscal components within the sample period. In addition, the findings for the long-run coefficient of the variables under investigation are estimated using the optimal ARDL selection according to the AIC criterion. The long-run elasticities and its corresponding coefficients are given below:

Table 1.3: Estimated Long-Run Coefficients

Regressors	Coefficients	Std. Error	t- Statistic	Prob.
LTGE	-0.451	0.170	-2.651	0.0149
LGTR	0.027	0.079	0.338	0.7382
LGDD	-0.367	0.125	-2.929	0.0080
LDOP	0.448	0.185	2.414	0.0250
LCPI	0.177	0.073	2.429	0.0242
Dummy	0.235	0.138	1.701	0.1036
C	8.907	0.488	18.242	0.0000
Trend	0.208	0.035	5.890	0.0000

Table 1.4: Estimated Short-Run Coefficients

Regressors	Coefficient	Std. Error	t-Statistics	Prob.
LTGE	-0.065	0.027	-2.427	0.0243
LGTR	0.005	0.017	0.335	0.7407
LGDD	-0.078	0.025	-3.053	0.0060
LDOP	0.019	0.025	0.771	0.4482
LCPI	-0.016	0.006	-2.481	0.0216
Dummy	0.050	0.024	2.083	0.0496
Trend	0.044	0.006	6.853	0.0000
ECM_{-1}	-0.214	0.047	-4.497	0.0002

It can be observed from Table 1.3 that government expenditure (LTGE) in the long-run has a significant but negative effect on economic growth. This shows that, one percent increase in the level of government expenditure leads to a decrease in economic growth by 0.45% in the long-run. This result is not surprising, given the rising and excess level of fiscal deficit in the country. Undeniably, in an economic environment of high deficit and inflation rate, continuous increase in government expenditure (in the long-run) becomes more challenging. As evidenced by Singh (1998), who argued that large government expenditure over long-run period is detrimental to a nation's growth. On the other hand, the coefficient of tax revenue (LGTR) is positive but not significant on the economic growth. The combined effects of these two variables (expenditure and tax) implies a reduction of government expenditure and a corresponding increase in tax revenue. This policy effect is called a discretionary fiscal policy. Meaning that, discretionary fiscal operations will ensure a sound balance of payment and price stability that will provide the atmosphere needed for private sector growth and sustainable development in the Nigerian economy. Notably, discretionary fiscal operations is a situation when the government increases taxation and reduces spending in an attempt to reduce the circulated money in the economy.

With respect to the effect of domestic debt (LGDD), the coefficient is negative and significant with a probability value of 0.0080. This shows that, one percent increase in domestic debt leads to a decrease in economic growth by 0.36%, hence domestic debt has growth-retarding effect on the Nigerian economy. In addition, the coefficient of degree of openness (LDOP) is positive and statistically significant with a probability value of 0.0250. This implies that, one percent increase in degree of openness leads to an increase in economic growth by 0.44% in the long-run. This result established that, degree of openness of the Nigerian economy contributes effectively to the realisation of sustainable growth and development through its impact in integrating global countries and development of broader markets within the international environment. Furthermore, the coefficient of inflation (LCPI) is positive and significant with the probability value of 0.0242 in the long-run. This implies that price stability contributed to the fiscal sustainability in the Nigerian economy. It shows that one percent increase in this variable leads to 0.17% increase in economic growth. This is necessary for the attainment of desired level of sustainable growth relative to the currency of the industrialised economies. Lastly, the coefficient of the dummy variable is found to be insignificant in the long-run. This implies that, the changes in economic governance and leadership style from the military regime to democratic system has no any impact on the growth of the Nigerian economy.

Furthermore, the existence of cointegrated relationship among the variables provide more evidence for the estimation of Error Correction Term (ECM_{-1}) in the model with the view to estimate the short-run dynamics. The estimated ECM_{-1} for this model is shown in Table 1.4:

Findings presented in Table 1.4 show the result of short-run dynamics associated with the long-run relationship obtained from the ECM_{-1}. Interestingly, the coefficient of ECM_{-1} is negative and statistically significant with the probability value of 0.0002 in the model. This further affirms the existence of long-run equilibrium relationship between fiscal operations and economic growth in Nigeria. The coefficient of the ECM_{-1} is found to be 0.21, which implies that only 21% of the deviations or disequilibrium in GDP from the previous shocks will converge back to the long-run equilibrium in the current period. In addition, the speed of adjustment suggested a moderate convergence to the equilibrium state following the short-run shocks.

To ensure the robustness and stability of the model, several diagnostic tests are conducted with the view to determining the validity of the findings. These diagnostic tests include the serial correlation test, heteroskedasticity test, normality test, and CUSUM and CUSUMSQ test, respectively. The estimated result from each diagnostic test is presented as given below:

Table 1.5: Results of the Serial Correlation- Breusch-Godfrey LM Test

F-statistic 0.336732	Prob. F(2,19) 0.7183
Obs*R-squared 1.163892	Prob. Chi-Square (2) 0.5588

Table 1.5 reveals the summary findings from the serial correlation LM test. The test is based on the null hypothesis of no serial correlation in the model. As such, if the p-values are significant, then the conclusion is that there is a serial correlation otherwise, there is no serial correlation. Results from the estimation show no evidence of serial correlation in the residuals. As the probability values are all insignificant in the model, they suggested that the error terms in this model are serially independent.

Table 1.6: Results of the Heteroskedasticity- Breusch-Pagan-Godfrey Test

F-Statistic 0.541724	Prob. F(12,21) 0.8628
Obs*R-Squared 8.037017	Prob. Chi-Square (12) 0.7822
Scaled Explained SS 2.425662	Prob. Chi-Square (12) 0.9984

Findings from Table 1.6 reveal the estimated result for Breusch-Pagan-Godfrey test for heteroskedasticity. The test is based on the null hypothesis of no heteroskedasticity in the residuals. As such, if the p-value of either of the statistic coefficient is significant, then there is an evidence of heteroskedasticity; otherwise there is no any. Result from the estimation shows that the variance of the error term is constant across the observations, hence errors are homoscedastic, meaning that there is no presence of heteroskedasticity in the residuals, as justified by the insignificant probability values.

Finally, the model stability is tested using the CUSUM and CUSUMSQ tests which are applied to assess the parameter stability of the model coefficient. Below is the graphical presentation of these tests as follows:

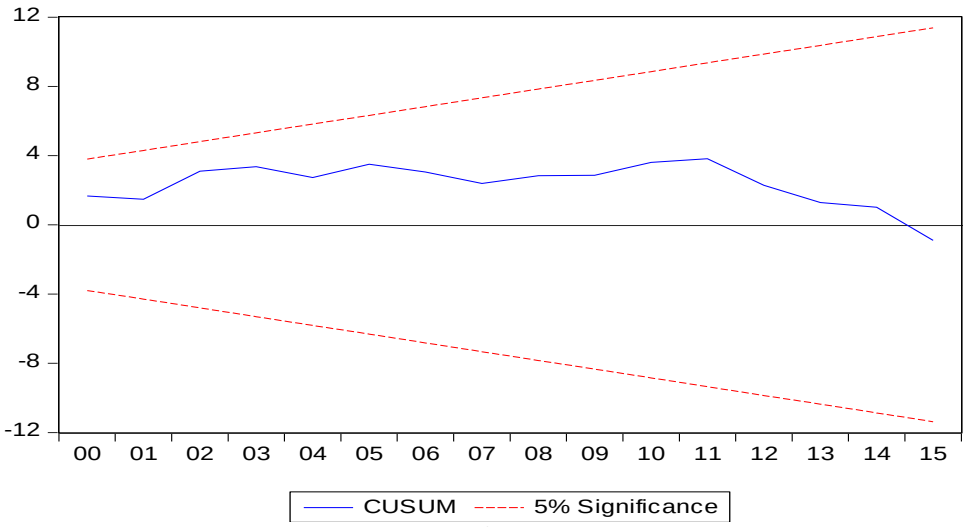


Fig. 1.1: Plot of CUSUM Test.

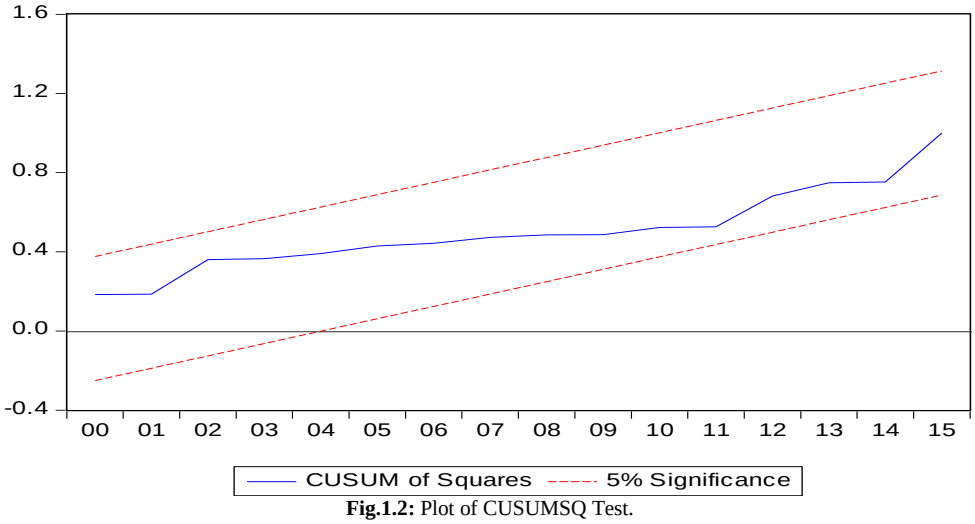


Fig.1.2: Plot of CUSUMSQ Test.

It can be observed from the Figure 1.1 and Figure 1.2 that both the CUSUM and CUSUMSQ statistics are rightly positioned within the critical bounds of 5% significance level. This implies that the model coefficients are stable and all inferences are also valid and reliable.

6.3. Results for model 2: the alternative model

In this model 2, the effects of fiscal operations on the economic stability is estimated taking into considerations the other fiscal components in the model. The estimated results along with other associated findings are given as follows:

Table 1.7: Results for the Bound Test

T-statistic	Value	Variables
F- statistic	6.67*	LCPI, LTGE, LGTR, LGDD, LDOP.
Critical Value Bounds (Lower and Upper)		
10% 5% 2.5% 1%		
[2.45, 3.52] [2.86, 4.01] [3.25, 4.49] [3.74, 5.06]		

Note: * indicates significance at all levels, respectively.

Information from Table 1.7 reveals the summary estimates from the computed Bound test. Finding shows that the F-statistic for this Bound test is 6.67, which is greater than the critical values of both the lower and the upper bounds at all levels of significance, respectively. Meaning that, there exists a cointegrated relationship between fiscal operations and macroeconomic stability in the Nigerian economy given the period under this study.

Table 1.8: Estimates of the Long-Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTGE	-7.735	3.386	-2.225	0.0076
LGTR	2.935	1.238	2.370	0.0063
LGDD	3.985	2.177	1.829	0.1268
LDOP	1.698	1.140	1.488	0.1968
Dummy	1.452	1.031	1.408	0.2181
C	3.784	4.955	-0.763	0.4795

Table 1.8 shows the estimate of long-run coefficients computed for the Alternative model. Finding reveals by the estimation indicates that fiscal operations (expenditure and tax) have a significant impact towards ensuring macroeconomic stability in the Nigerian economy particularly in long-run period. The p-values are significant at 5% level and also found to be significant at 1% and 10% levels, respectively. Given the public sector spending (LTGE), one percent increase in government expenditure leads to a decrease in macroeconomic stability by 7.73% in the long-run. This result is not contrary, hence it is the ideal situation and true reflection of the Nigerian economy. On the other hand, the coefficient of tax revenue (LGTR) is positive and also significant at 1% and 10% levels, respectively. This implies that, one percent increase in the level of revenue leads to an increase in macroeconomic stability by 2.9% in the long-run. With regards to domestic debt (LGDD), the coefficient is positive although not significant in the long-run. Meaning that, domestic debt cannot explained the situation of macroeconomic stability in Nigeria particularly in the long-run. It is interesting to note that, much of the Nigerian outstanding debt were contracted during the military administration and lacked the required accountability thrust, hence, considered as odious debt. Furthermore, the coefficient of the degree of openness (LDOP) is

also positive but not significant in the model. This situation is even clearer given the global status of developing countries in terms of resource control.

Table 1.9: Estimates of the Short-Run Dynamics

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$LCPI_{-1}$	0.541	0.194	2.778	0.0390
$LTGE_{-1}$	-0.789	1.427	-0.552	0.6042
$LTGE_{-4}$	2.644	0.937	2.820	0.0371
$LGTR_{-1}$	0.554	0.597	0.927	0.3962
$LGDD_{-1}$	5.609	1.742	3.218	0.0235
$LDOP_{-1}$	-1.436	0.727	-1.973	0.1054
Dummy	1.434	0.898	1.596	0.1712
ECM_{-1}	-0.987	0.218	-4.512	0.0063

Table 1.9 shows the estimate of short-run dynamics in the model. Remarkably, the coefficient of ECM_{-1} is negative and statistically significant in the model with a probability value of 0.0063. This result confirms the convergence of short-run to the long-run equilibrium, respectively. The coefficient is approximately -0.98, indicating that, 98% of the deviations or disequilibrium in LCPI (macroeconomic stability) from the previous shocks will converge back to the long-run equilibrium in the following period. In relation to the relative adjustment, the speed of adjustment shows a very strong convergence towards the equilibrium period within the system.

Furthermore, numerous diagnostic tests are conducted and the results are presented with the view to ensuring reliability of the findings. Among these tests include the Lagrange Multiplier (LM) serial correlation test, the Normality test, the heteroskedasticity test, and the stability tests comprising of CUSUM and CUSUMSQ test, respectively.

Table 1.10: Summary Estimates of the Breusch-Godfrey LM Test for Serial Correlation

F-statistic 0.210143	Prob. F(2,3) 0.8215
Obs*R-squared 3.809299	Prob. Chi-Square(2) 0.1489

Available information in Table 1.10 shows the summary estimates of Breusch-Godfrey LM serial correlation test. As mentioned earlier, the test is based on the null hypothesis of no serial correlation in the model. As such, if the estimated p-values are significant in the model, then the conclusion is that there is a serial correlation, otherwise there is no serial correlation. As can be observed from Table 1.10, finding shows no evidence of serial correlation in the residuals as the estimated probability value is found to be insignificant, hence desirable.

Table 1.11: Estimates of the Breusch-Pagan-Godfrey Test for Heteroskedasticity

F-statistic 2.247584	Prob. F(25,5) 0.1872
Obs*R-squared 28.46689	Prob. Chi-Square(25) 0.2868
Scaled explained SS 0.534395	Prob. Chi-Square(25) 1.0000

Table 1.11 reveals the estimated result for the Breusch-Pagan-Godfrey test for heteroskedasticity. The test is based on the null hypothesis of no heteroskedasticity in the residuals. In view of this decision rule, finding shows no evidence of heteroskedasticity in the residuals as justified by the insignificant probability values. This implies that the variance of the error term is constant across the observations, hence errors are homoskedastic.

Furthermore, the stability test is conducted and the results are presented. The decision rule guiding this test is that, if the plots of the CUSUM and CUSUMSQ statistics stay within the critical bounds of five percent level of significance, then, the model coefficients are stable and desirable; otherwise the model is rejected. To show the output of this test, they are depicted below in the form of graphical presentation:

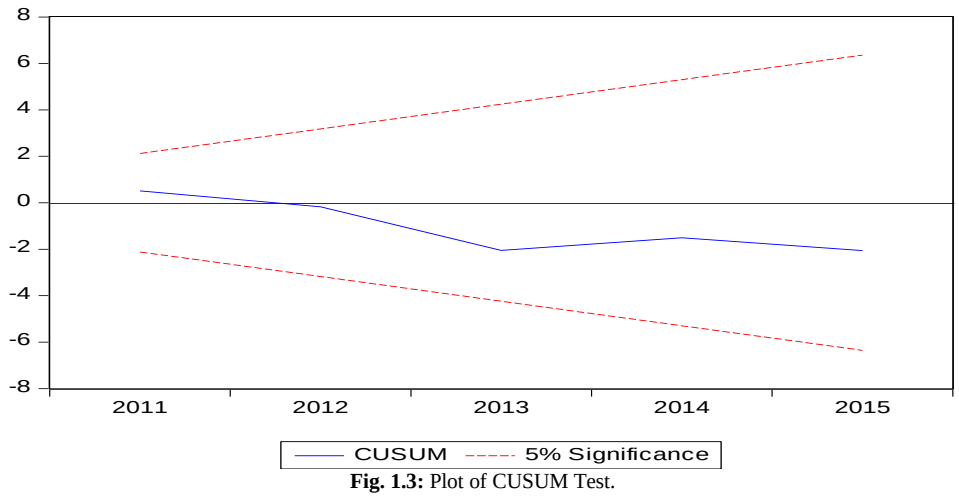


Fig. 1.3: Plot of CUSUM Test.

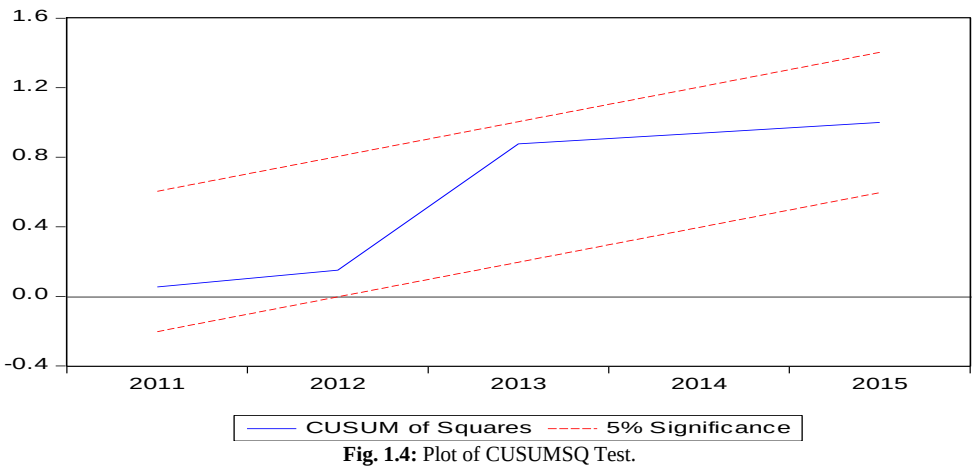


Fig. 1.4: Plot of CUSUMSQ Test.

Figures 1.3 and Figure 1.4 show the stability tests conducted on the model coefficients. Interestingly, it can be observed that both the CUSUM and CUSUMSQ statistics are rightly positioned within the critical bounds of 5% significance level. In other word, both the tests do not touch either of the red lines as indicated on the graph. This implies that the model is stable and the inferences are valid, hence the required and essential condition.

In summary, the overall results indicates that fiscal operations lead to economic growth as shown by the model 1 (the baseline model) and it can also leads to economic stability as revealed by the model 2 (the alternative model). This finding is consistent with the theoretical postulation of Keynes who argued that government spending and taxation can improve the public sector performance and produce a desirable outcome on output growth and strengthen the capability of fiscal policy in terms of economic stability. As stated in the literature by Macek (2014) and Laura (2008) who argued that, fiscal policy has an impact on economic growth and development and it is not surprising that they are interrelated. These findings are essential to the Nigerian economy and other developing countries, hence serve as a policy tool for designing feasible developmental programmes.

7. Conclusion and policy implications

This study examines the effects of fiscal operations on economic growth and stability in Nigeria by adopting the ARDL model using annual time series data covering 35 years from 1980 to 2015. The study is motivated by the poor performance of macroeconomic indicators in Nigeria relative to other developing countries within the last three decades. This situation becomes more apparent given the present decline and deterioration of the country's foreign exchange rate; high level of fiscal deficits, and lower rate of growth. In view of this, the study divides the ARDL model into two: the Baseline model and the Alternative model. While the former measures the effects of economic growth, the latter accounts for the effects of economic stability. Findings established the existence of long-run relationship among the examined variables in both the two models. Further result shows a discretionary fiscal operations and is expected to provide the atmosphere needed for private sector growth and sustainable development in the Nigerian economy. Notably, discretionary fiscal operation is a situation when the government reduces spending and increases taxation in an attempt to reduce the circulated money in the economy. There is a need for government to implement reliable fiscal programmes which are expected to play a vital role in overcoming these instabilities encircling the economy by providing a suitable framework for private sector development. Although, implementing a fiscal programme will not change the impacts of these instabilities on the economy unless viable and pro-active measures are taken by the public sector to fight corruption and to strengthen transparency and accountability in fiscal management. Furthermore, there is an urgent need to ensure that appropriate fiscal operations are conducted and do not result in excess liquidity beyond the absorptive capacity of the economy.

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