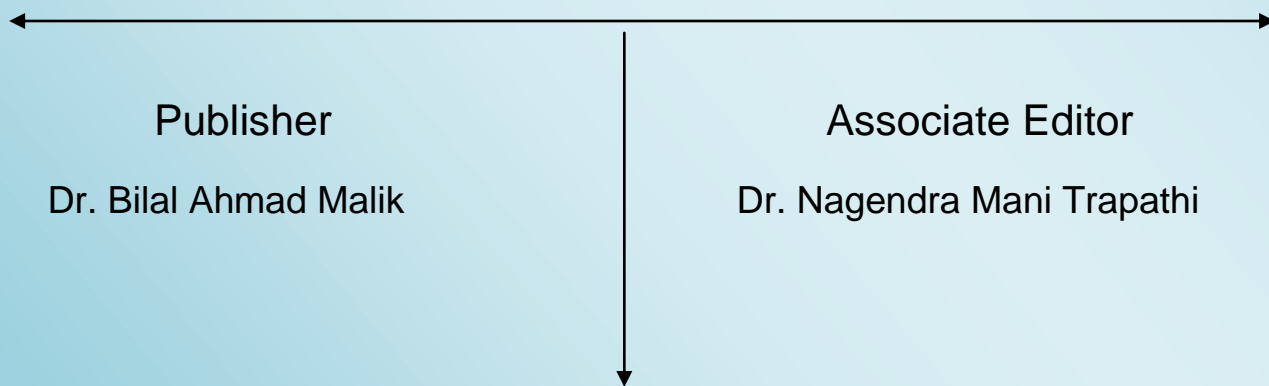


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# FISCAL POLICY AND MACROECONOMIC STABILITY IN NIGERIA

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## **ABSTRACT**

*This study examines the impact of fiscal policy measures on major macroeconomic goals in Nigeria from 1980 to 2013. The ordinary least square approach was adopted for the study. The study employed the co-integration and error correction technique to establish the long run relationship between variables in the models. Data for the study were obtained from secondary sources. It was found out from the study that fiscal policies increased growth but its long run effects were ineffective. Fiscal policies have not affected inflation rates; and they have encouraged large importations thereby creating deficits in its balance of payments. Finally, it was recommended that the government should direct its focus on improving capital expenditures, government's Internally Generated Revenue should be well-coordinated by enhancing adequate domestic resource mobilization, government's domestic and external borrowings should be geared into productive sectors of the economy to create adequate job opportunities.*

**Keywords:** *Fiscal Policy, Macroeconomic stability, Unit Root, Error Correction*

## **1. INTRODUCTION**

The most critical obligation of the government is to impact positively on the lives of its citizens. Governments over the years have embarked on various macroeconomic policy options in order to manage and improve the economy in terms of growth and development. Most of them have fulfilled such obligations by initiating different Action plans on a short, medium and long-term basis.

Fiscal policy is the deliberate and conscious attempt by any government to formulate decisions on how to raise government revenue through taxation and other means; to make decisions on the level and pattern of expenditure for the purpose of influencing economic activities or attaining some desirable national objectives. Another way to view government fiscal activities is to look at the public budget - being a statement of government estimated revenues and expenditures within a given period of time, usually a year (Onuchuku, Ofoezie and Nteegah, 2006).

Overtime the annual budget on government spending of many countries assumed expansionary dimension out-spacing available financial resources. It is important to know that the state also has much larger borrowing facilities and uses them not to keep it going, but to influence the economy. Government plans and objectives are usually articulated in her macroeconomic policies. The essence of these policies can be summarized as: (1) Achieving acceptable growth rate, (2) Maintaining acceptable price stability, (3) Achieving full employment, and (4) Maintaining healthy balance of payment position. These form the cardinal objectives against which government fiscal accomplishments are evaluated (Onuchuku *et al.*, 2006).

The Nigerian government has made efforts to achieve acceptable growth and development. They have done this by initiating sound fiscal policies to help achieve the major macroeconomic goals. In the first, second, third, and fourth National development plans, the government adopted expansionary fiscal policies in a quest to compete with the advanced countries of the world. But one year after the implementation of the fourth plan, it was scaled down to contractionary fiscal policy because of the oil glut and fall in oil prices. This led to import compression and strangulation as many imported commodities were banned. It also led to the promulgation of the Economic Stabilization Act in 1982, otherwise called Austerity measures. The adoption of the Structural Adjustment Programme (SAP) in the country in 1986, aimed at increasing the balance of payment disequilibrium, inflation, and unemployment rate, yielded little impact in the economy. As a result, standards of living fell and there was suffering in the country.

Undoubtedly, one of the macroeconomic goals which the government strives to achieve is the maintenance of stable domestic price level. This goal is pursued in order to avoid cost of inflation or deflation and the uncertainty that follows where there is price instability (Ibrahim and Agbaje, 2013). Inflation rate (measured by the consumer price index, CPI) and the unemployment rate have been on the rise suggesting that past government attempts to addressing these and achieving growth have been ineffective. Inflation increased from 10% in 1980 to 30.4% in 1996. It became 18% in 2005 and reduced to 5.3% in 2006 due to some fiscal discipline, but heightened in 2008

to 11.5% (CBN, 2010) which resulted from the economic meltdown that affected the global economy. It became 13.8%, 12.2%, 8.5% in 2010, 2012 and 2013 respectively (CBN, 2013).

The unemployment rate worsened from 7.4% in 1980 to 11.5% in 2000. It was low in 2006 but more than doubled in 2008 to 12.8% (CBN, 2010). Unemployment rate in Nigeria increased to 23.9% in 2011 from 21.0% in 2010. It averaged 14.6% from 2006 until 2011, reaching an all-time high of 23.90% and a record low of 5.30% in 2006 ([www.Tradingeconomics.com](http://www.Tradingeconomics.com)). The balance of payment and total debt stock has not been encouraging. The balance of payment moved from ₦2, 402million in 1980 to an 18-out-of-24-year deficits. The periods from 2005 until 2012 were characterized by high deficits which were not favorable. The total debt was not any better as aggregate debt grew from ₦10million in 1980 to ₦4billion in 2000. In 2004, it grossed ₦6billion. The total debt stock reduced to ₦2.5billion in 2007 and ₦2.7billion in 2008(CBN, 2010). The gross reduction was as a result of the rescheduling/refinancing of debt in Paris club and London club in September 2006. The debt of 2008 was as a result of borrowings from multilateral organizations: ₦2.3billion domestic borrowings and ₦0.4billion external borrowings. Total debt stock as at 2012 was ₦7, 564,400billion (CBN, 2013).

Government has consistently made frantic efforts to achieve economic growth and development. It has set the target of maintaining some stability in the general price level and reducing unemployment among other macroeconomic objectives (Onuchuku *et al.*, 2006). As such, there have been various fiscal policy measures initiated by the government since the period under study. Despite these laudable measures and programmes, macro-economic problems such as inflation, the balance of payment deficit, unemployment etc still persists in the Nigerian economy. There seem to be an inverse relationship between the efforts being made to boost the performance of the macro economy and the actual performance of the macro economy. It is therefore pertinent to ask why these many policies and measures of government have not succeeded in achieving the desired results. It is for this reason the research is being undertaken to:

- i. examine the effect of government expenditure, government revenue, domestic debt, and external debt on economic growth;
- ii. examine the effect of government expenditure, government revenue, domestic debt, and external debt on unemployment rate;
- iii. ascertain the impact of government expenditure, government revenue, domestic debt, and external debt on inflation rate; and

- iv. examine the effect of government expenditure, government revenue, domestic debt, and external debt on balance of payment.

## 2. LITERATURE REVIEW

### 2.1 THEORETICAL FRAMEWORK

#### A. Classical Theory: Macroeconomic Stability

The classical economists were inspired by Adam Smith's (1723-1790) concept of the invisible hand, which implied that individuals pursuing their own self-interest would contribute to the general interest. The classical doctrine revolved its analysis around Says law of markets. This theory was propounded in 1803 by the French economist Jean Baptiste Say (1767-1832). The law states that 'supply creates its own demand'. In a sense, the law states that overproduction is impossible by its very nature. Hence the rationale for Says law rest on a view that whenever an output or supply is produced, factor incomes such as wages and profits are generated which are just sufficient, if spent, to purchase the output produced. Simply put, whatever factories can produce, workers can afford to buy.

The classical model of macroeconomic equilibrium implied that excessive unemployment and unused productive capacity would set up market forces that would eventually increase real GDP and eliminate cyclical unemployment. In other words, the economy has a self-correcting mechanism that keeps it working at full employment most of the time (Gbanador, 2007). The classical view of the economy is that changes in the money supply, fiscal policy, or other spending have no lasting impact on output or employment. Prices and wages move flexibly to maintain full employment quickly (Samuelson, 2005). Thus the classical economists thought that time should be allowed for the invisible hand to restore equilibrium should there be a temporary disequilibrium. However, the uncritical acceptance of Say's law of market appears to have delayed the study of business cycles for many decades, and there came a time when the self-correcting mechanism of the market faced a serious challenge. This gave rise to the prolonged great depression of the 1930s - something notable classical economists did not expect.

## **B. The Keynesian Theory: Macroeconomic Stability**

The classical economists understood the economy to possess a natural tendency, when disturbed, to revert readily to full employment. But in the real world, things are unfortunately very different - the macro economy insisted on misbehaving. Professional views were divided. One position was that workers became unemployed because the wage rate is not flexible downward, that is, they refuse to accept wage cuts. Incidentally, this view was championed by a very humane economist of the period who had received attention and praise for his work on Economics of welfare (A. C. Pigou, {1877-1959}).

A younger colleague of his and the first major economist to challenge the classical position on macroeconomic stability was John Maynard Keynes (1883-1946) in his book, "the general theory of employment, interest and money" published in 1936. He was well acquainted with real-life economics and rebutted the reasoning of Pigou by declaring: "in the long run, we are all dead". He insisted that there was an effective short run way out. This was apparently a clear reaction to the failure of the invisible hand in allocating resources effectively as depicted by the Great depression of 1929-1932. As an observer of the real world, he pointed out that most workers were unemployed against their will or were part of involuntary unemployment (a vast army of unemployed workers begging for work), and while they remained unemployed, factories also remained closed, or were running below capacity. Keynesian analysis indicated that high unemployment may plague a market economy in a short run equilibrium that may persist for so long that the long run becomes almost irrelevant. A nation could remain in its low-output, high-misery condition for a long time, because there is no self-correcting mechanism or invisible hand to guide the economy back to full employment.

Hence government policies influencing aggregate demand are necessary and when there is considerable slack in the economy, increase in aggregate demand results primarily in increases in real GDP, with little upward pressure on the price level. Through monetary and fiscal policies, the government can stimulate the economy and help maintain high levels of output and employment. In more sophisticated ways, Keynes was implying that government spending by deficit budgets, increasing expenditures more than it collects as income, had a major role in the system and that public works were the best way out of the depression.

## **C. Neoclassical Theory (Rational Expectation): Macroeconomic Stability**

The new classical economists such as Robert Emerson Lucas Jr. (1937 till date), Thomas John Sargent (1943 till date), and Robert Barro (1944 till date) attached great importance to the flexibility of prices and wages and the

role of expectations in influencing macroeconomic equilibrium. They were of the opinion that existing Keynesian macroeconomic models cannot provide reliable guidance in the formulation of monetary, fiscal or other type of policy and that there is no hope that minor or even major modifications of these models will lead to significant improvements in their reliability.

Definitely, economist like Lucas has views similar to the classical economists in that they believe the economy is inherently stable and has a self-correcting mechanism. Additionally, their hypothesis holds that people form their expectations on the basis of all available information. Hence, under such assumption, the government cannot fool the people, for the people are well informed and have access to the same information as the government. The new classical economists believe the policies designed to stabilize the economy often end up destabilizing it. They believe that expansionary fiscal policy is powerless to increase real GDP in the long run because it tends to increase inflationary pressures.

In summary, the rational expectation theorist is of the opinion that rather than running the risk of systematic policy mistakes, it is better to rely on the self-regulating and self-correcting forces of the economy to restore and maintain equilibrium. Having considered the stabilization debate, the study is designed with respect to the Keynesian position that it is the responsibility of government to ensure full employment. Also justifiable is the rational expectation theorist's position that policies designed by the government to stabilize the economy often end up destabilizing it.

## 2.2 EMPIRICAL LITERATURE REVIEW

Many studies have been undertaken on the influence fiscal policies have on individual macroeconomic components or indicators. Nevertheless, very few scholars have analysed the overall effect of fiscal policy on macroeconomic stability. Butkiewicz (1982) analysed fiscal policy in the context of a variable price IS-LM model with a full employment constraint. Debt-financed fiscal actions are shown to be destabilizing, regardless of the impact of debt finance on aggregate demand. The difficulty arises because growth of the capital stock is required to increase aggregate supply sufficiently to match the increase in demand necessary to balance the budget. However, debt financing raises the interest rate and reduces investment. As the deficit persists, further debt issued and higher interest rates will further dampen investment. Since the necessary increase in investment is not forthcoming, balance budget equilibrium is never attained.



In analysing the specific role of fiscal policy on welfare effects of macroeconomic stabilisation policies, Marzo and Lubik (2004) extended the dynamic stochastic general equilibrium models *a la* Schmitt-Groha and Uribe (2003) to a non-standard fiscal policy framework. He focused on distortionary and progressive taxation which alters the trade-off between inflation and output stabilisation in a non-trivial manner. A DSGE model with nominal rigidities in form of costs of price and wage adjustments was developed. The government levies distortionary taxes on labour and capital income. Here, fiscal policy was described by a feedback function on outstanding debt. It was discovered that distortionary taxes substantially increase output volatility unless an implausibly high degree of real rigidity was included. Welfare was evaluated using the conditional second-order accurate expected utility function. The results do not confirm the findings of Schmitt-Groha and Uribe (2003), where the optional output targeting coefficient was found to be negative.

Kirsanova, Vine and Wren-Lewis (2006) analysed the stability of countries within a monetary union in the face of asymmetric shocks using a simple but widely applicable mode. They showed that members of the union may be subject to severe, and possibly unstable cycles following asymmetric shocks if there is a significant backward looking element in inflation behaviour and if real interest rate influence the level of aggregate demand. The cyclical instability can be mitigated if fiscal policy in each member country reacts to inflation differences, but it can be aggravated if fiscal feedback on debt is too strong.

Considering a study conducted by Onuchuku *et al.* (2006) which was to see the impact of fiscal operations on macroeconomic goals in Nigeria for the period 1980 to 2004, econometrics method of multiple regressions was used in analyzing the impact of the various government policies on key macroeconomic variables of GDP, inflation, balance of payment and unemployment. Short-run regression analysis was employed. The results showed a weak relationship between these variables and fiscal policy variables. According to them, this suggested that fiscal policy measures have not succeeded in stabilizing the macro economy.

Vilarino and Domingo (2006) analysed the impact of fiscal rules on the effectiveness of fiscal policy as a macroeconomic stabilizing instrument. Firstly, they reviewed the available evidence on the effects of fiscal policy to affect output in the short run and real interest rate and investment and growth in the long run, and they showed how the use of fiscal rules had proven useful in restraining debt and deficits. Secondly, they discussed if debt consolidation rules trade-off higher output instability in exchange for lower deficits using three alternative representations of the intertemporal substitution mechanism in a SDGE framework. The conclusion drawn was that both the impact of discretionary fiscal policy and the strength of automatic stabilizers are largely unaffected

by the tightness of these rules. They went further concluding that there is nothing in the design of fiscal rules aimed at preventing huge and long-lasting deviations of debt from the steady state level, which makes them an impediment to fiscal policy carrying out its job as a significant stabilizing policy instrument.

Hebous (2011) surveyed the theoretical predictions with recent empirical vector auto regression (VAR) evidence on the short-run effects of discretionary fiscal policy on macroeconomic aggregates. His findings were as follows: output increases following the expansionary fiscal shock; there were some exceptions though. The magnitude of the effect depended on the country under consideration and the sample period. These findings were consistent with the Keynesian and most DSGE models; consumption increases in most studies particularly in those that tended to capture unanticipated shocks. Although the findings indicated a Keynesian effect, consumption decreased or showed no significant effect in empirical studies that tended to capture unanticipated shocks in line with theories of forwards-looking behavior.

Furthermore, it was discovered that employment seemed to increase following an expansionary fiscal shock. It was discovered that expansionary fiscal shock had a negative effect on the trade balance and the current account in some studies while the effect was muted in others. The conclusion was that the effectiveness of fiscal policy in stimulating the economy depended on various underlying and real-life factors.

Debrun and Kapoor (2010) revisited the empirical link between fiscal policy and macroeconomic stability. The basic presumption, according to him is that, by definition, the operation of automatic stabilisers should always and everywhere contribute to greater macroeconomic stability (output and consumption). However, two stylised facts seemed at odds with that prediction. First, the moderating effect of automatic stabilisers appeared to have weakened in advanced economic between the mid-1990s and 2006. Second, automatic stabilisers did not seem to be effective in developing economies. His analysis addressed these apparent puzzles by accounting for the government's ambivalent role as a shock absorber and a shock inducer for determinants of macroeconomic volatility over time. Results provided strong support for the view that fiscal stabilization operated mainly through automatic stabilisers.

Dricu (2011) analysed fiscal policy as an anchor in achieving macroeconomic stability in Romania during the economic crisis. "What are the most appropriate policies to be applied?" was a relevant question raised due to the significant economic down turn that ravaged all national and international markets. According to him, the current conditions are the result of policies pursued in the past both nationally and internationally. In assessing Romania,

one of the targets made during the current fiscal policy objective was reconciliation of nominal convergence criteria in a sustainable budget, with required mitigation measures and the global financial crisis on the economy. Hence, it was discovered that fiscal policy in Romania can be an anchor in achieving macroeconomic stability, reduce the budget deficit, and slow from aging and stress which guarantee long-term healthy growth.

In assessing the short term macroeconomic effect of fiscal policy in Columbia, Lozano and Rodriguez (2011) used a structural vector auto regression (SVAR) model for the period 1980 to 2007. The author's benchmark was a five-variable SVAR model which included government spending, output, tax revenues, inflation, and short term interest rates. In addition, the authors specified a six-variable VAR model, adding in turn private consumption, private investment, the unemployment rate and the real minimum wage to the last set of variables. Also two alternative identification techniques were used in the VARs to check the robustness of the results. Their findings were that effects of positive government spending shock were discovered. First, the GDP responded positively and significantly during the first six quarters. The cumulative output multiplier fluctuated between 1.12 and 1.19. Secondly, both inflation and nominal interest rates responded positively and significantly. Thirdly, the authors found a significant positive response by both private consumption and private investment. Finally, the unemployment rate reacted negatively and significantly. Hence, their results supported the smoothening role of fiscal policy on output fluctuations, which implied its capacities to restore real activity effectively in critical time like the ones forecasted.

Corsetti, Kuester, Meier, and Muller (2013) analyses the impact of strained government finances on macroeconomic stability and the transmission of fiscal policy. Using a variant of the model by Curdia and Woodford (2009) - a simple Dynamic Stochastic General Equilibrium model with credit friction - they studied a sovereign risk channel through with sovereign default risk raises funding costs in the private sector. They asserted that if monetary policy cannot offset increase credit spreads because it is constrained, the sovereignty risk channel exacerbates indeterminacy problem: private – sector beliefs of a weakening economy may become self-fulfilling. This also amplified the effects of cyclical shocks. Under those conditions, according to them, fiscal retrenchment can help curtail the risk of macroeconomic instability and, in extreme cases, even bolster economic activity.

Gruevski, Gaber, and Gaber (2013) reviewed the evidence on the practice and effects of discretionary fiscal policy in the context of recent efforts to stimulate the economy. Two main conclusions were drawn. First, policy interventions have increased in this decade pre-dating the 2009 stimulus. Second, despite huge economic literature on the topic reviewed, the state of theory and evidence was not as 'shovel ready' as they liked. They

reviewed the paper methodologically using theoretical predictions and empirical vector Auto regression (VAR) evidence on the short run effects of discretion fiscal policy on macroeconomic aggregates. Although consumption and investment clearly responded to tax incentives, and the structural vector auto-regressions showed that lower taxes and higher government purchases can boost output. It was difficult to apply the findings in the current context in part because multipliers and policy lags are likely to vary with economic conditions.

Akanbi (2013) studied the macroeconomic effects of fiscal policy changes at stimulating and stabilising the South African economy. The study developed comprehensive full-sector macro-econometric models for the South African economy which aimed at explaining and providing the macroeconomic effects of fiscal policy changes. The models were applied to test the effectiveness of fiscal policy actions in an economic environment with existing structural supply constraints versus demand-side constraints and also to detect which components of the fiscal would be more effective in stabilising the economy. The models were estimated with times series data from 1970 to 2011, capturing both the long-run and short-run dynamic properties of the economy both the long-run and short-run dynamic properties of the economy. The results from the series of fiscal policy scenarios suggested that fiscal policy actions were more effective in an economic environment with limited or no supply constraints. Hence, fiscal expansion or consolidation that comes more from government spending changes will be more effective in an economic environment where structural supply constraints are absent, while tax revenue changes will be more effective in an economic environment where there exist major structural supply constraints.

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The study was designed to be empirical in nature (quasi-experimental). The ordinary least square (OLS) technique was employed in obtaining numerical estimates of the coefficient parameters. The OLS method is chosen because of its BLUE (Best Linearly Unbiased Estimator) properties. Also ordinary least square (OLS) is extensively used in regression analysis primarily because it is intuitively appealing and mathematically much simpler than any other econometric technique (Gujarati, 2003). Finally, the E-views regression software package was employed for the analysis.

### 3.2 Model Specification

As discussed in previous chapter, for an economy to achieve stability, there must be sustained economic growth, minimum inflation, reduced unemployment rate, and balance of payment deficit. However, to justify the impact of fiscal policy on these macroeconomic variables, relevant fiscal policy variables were used to represent fiscal policy in Nigeria. Based on the definition of fiscal policy, government expenditure and government revenue are the most important variables. The government expenditures and revenues used for the study comprise that of the Federal, State, and Local governments. Realistically, government may either deliberately or accidentally spend more funds than they receive in revenues. Whatever the case (a deficit or surplus in revenues and expenditure mix), a government facing a deficit must obtain the money to cover it if the government is to fulfill its obligations. Hence, the issue of borrowing (internally and externally) was not left out in our specifications. It is interesting to note that government expenditure and revenue cannot exist as independent variables in a particular model (since  $\text{Exp-Rev}=0$ ). Therefore, our macroeconomic models would be specified into 4 models with each model having 2 options (a and b).

‘Model A’ would use one of the macroeconomic variables as dependent and government expenditure, domestic debt and external debt as independent variables;

‘Model B’ would use one of the macroeconomic variables as dependent and government revenue, domestic debt and external debt as independent variables.

The models are specified below:

#### 3.2.1 Model 1 (GDP Model)

##### Model 1 A

$$\ln GDP = a_0 + a_1 \ln GE + a_2 \ln DDS + a_3 \ln EDS + U$$

##### Model 1B

$$\ln GDP = a_0 + a_1 \ln GR + a_2 \ln DDS + a_3 \ln EDS + U$$

**3.2.2 Model 2 (Unemployment Model)****Model 2 A**

$$UNE = b_0 + b_1 \ln GE + b_2 \ln DDS + b_3 \ln EDS + U$$

**Model 2 B**

$$UNE = b_0 + b_1 \ln GR + b_2 \ln DDS + b_3 \ln EDS + U$$

**3.2.3 Model 3 (Inflation Model)****Model 3 A**

$$INF = C_0 + C_1 \ln GE + C_2 \ln DDS + C_3 \ln EDS + U$$

**Model 3 B**

$$INF = C_0 + C_1 \ln GR + C_2 \ln DDS + C_3 \ln EDS + U$$

**3.2.4 Model 4 (Balance of Payment Model)****Model 4 A**

$$BoP = d_0 + d_1 \ln GE + d_2 \ln DDS + d_3 \ln EDS + U$$

**Model 4 B**

$$BoP = d_0 + d_1 \ln GR + d_2 \ln DDS + d_3 \ln EDS + U$$

Where:  $\ln = \text{Log}$ ,  $GDP = \text{Gross Domestic Product}$ ,  $UNE = \text{Unemployment Rate}$ ,

$INF = \text{Inflation Rate}$ ,  $BoP = \text{Balance of Payment}$   $GE = \text{Government Expenditure}$ ,  $GR =$

$\text{Government Revenue}$ ,  $DDS = \text{Domest Debt Stock}$ ,  $EDS = \text{External Debt Stock}$ , and  $U = \text{Error Term}$

**A Priori Expectation**

$a_1 > 0$ ,  $a_2 < 0$ , and  $a_3 < 0$ ;  $a_1 < 0$ ,  $a_2 < 0$ , and  $a_3 < 0$ .

$b_1 < 0$ ,  $b_2 > 0$  and  $b_3 > 0$ ;  $b_1 > 0$ ,  $b_2 > 0$ , and  $b_3 > 0$ .

$c_1 > 0$ ,  $c_2 < 0$  and  $c_3 < 0$ ;  $c_1 < 0$ ,  $c_2 < 0$  and,  $c_3 < 0$ .

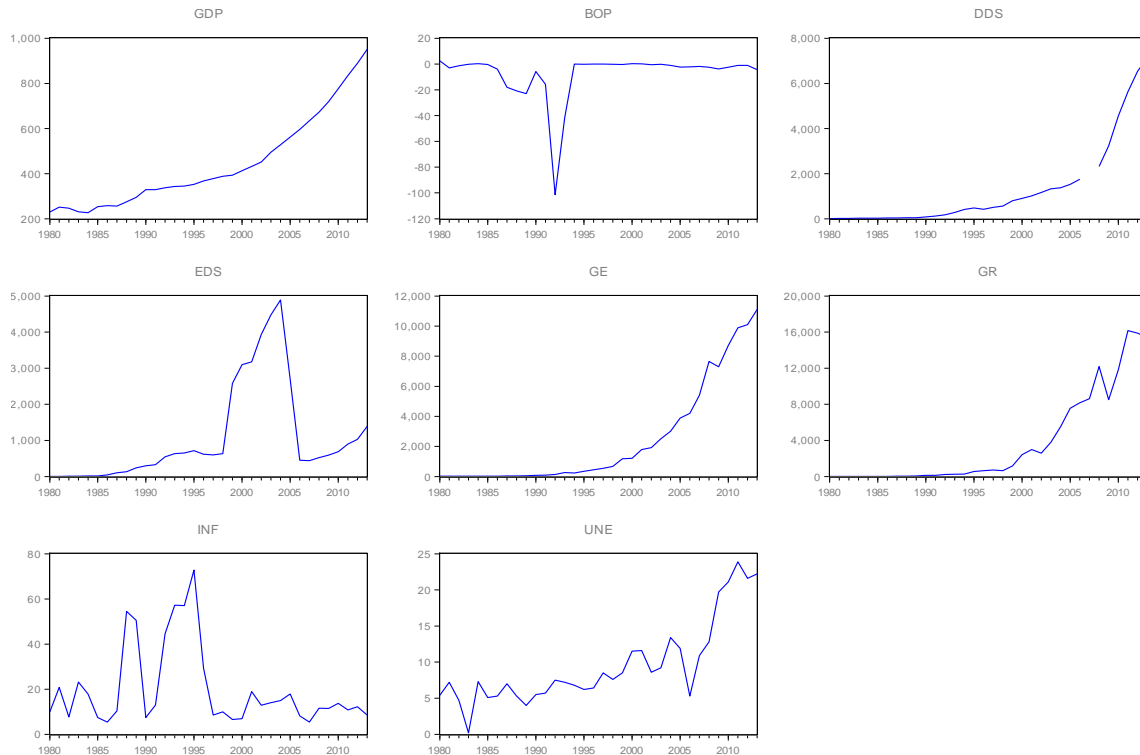
$d_1 > 0$ ,  $d_2 < 0$ , and  $d_3 < 0$ ;  $d_1 < 0$ ,  $d_2 < 0$ , and  $d_3 < 0$ .

**3.3 Data Required and Sources**

The data required for the study was secondary data and consisted of annual time series spanning 1980 to 2013. The variables for consideration are: Data on Nigeria's Gross Domestic Product (GDP), Data on Nigeria's Inflation Rate, Data on Nigeria's Unemployment Rate, Data on Balance of Payment of Nigeria, Data on Nigeria's total expenditure (Local, State and Federal), Data on Nigeria's total revenue (Local State and Federal), Data on Nigeria's total domestic debt stock, Data on Nigeria's total external debt stock. Data for the variable were sourced from central bank statistical bulletin 2013, and central bank's annual report 2014.

**4. ANALYSIS OF DATA AND DISCUSSION OF FINDINGS**

In an attempt to get answers to the big question (research topic), the results of the unit root tests, the static regression analysis, the co-integration tests, and the Error correction model in line with the specific objectives of this study, were presented and discussed. The various tests were conducted using E-views 9 statistical package. Since the study used time series data, the first step was to establish the stationarity of the variables. According to Gujarati and Sangeetha (2007), "a visual plot is usually the first step in the analysis of any time series". The graphs below show that the variables exhibit different degrees of fluctuations at levels; they seem to be trending upwards.



Source: E-views statistical software 9.0

The next step was to stabilize the time series by running a first-difference unit root analysis using the Augmented Dickey-Fuller (ADF) test. The Augmented Dickey-Fuller (ADF) test enabled us to avoid the problem of spurious or nonsense regression results that are associated with non-stationary time series data. The Augmented Dickey-Fuller tests are displayed in table 4.1

Table 4.1: Summary of Augmented Dickey-Fuller unit root test

Variable	Level	Critical Value	1st Difference	Critical Value	Order of Integration	Remark
BOP	-3.53	-2.95			I(0)	Stationary
Log(DDS)	-1.37	-2.96	-3.94	-2.96	I(1)	Stationary
Log(EDS)	-2.96	-2.96	-4.06	-2.96	I(1)	Stationary
Log(GDP)	2.31	-2.95	-4.12	-2.96	I(1)	Stationary
Log(GE)	-0.70	-2.96	-5.45	-2.96	I(1)	Stationary
Log(GR)	-0.82	-2.96	-5.80	-2.96	I(1)	Stationary
INF	-2.79	-2.96	-5.69	-2.96	I(1)	Stationary
UNE	0.70	-2.95	-6.68	-2.96	I(1)	Stationary

Source: E-views statistical software 9.0



The results of the unit root test above indicated that the variables used in the study are integrated at order I(1) except BOP which is integrated at order I(0). It is also argued that econometric results of the model in the levels of the series may not be ideal for policy making. Furthermore, we carried out a static regression analysis in line with section 3.2. The log models were preferred to their linear counterparts.

## 4.1 DIAGNOSTICS TESTS

### 4.1.2 Autocorrelation Tests

As analyzed in section 3.4.2, a general autocorrelation test was adopted for all models to enable us see whether the errors corresponding to different observations were serially correlated or not. Table 4.2 shows the Breusch-Godfrey serial correlation Lagrange Multiplier Test:

**Table 4.2: Breusch-Godfrey Serial Correlation LM Tests**

	Models	Obs* r-squared	Probability	Conclusion	Remark
GDP Models	1A	3.35874	0.1865	Accept Ho	No Autocorrelation
	1B	0.770863	0.6802	Accept Ho	No Autocorrelation
Unemployment Models	2A	0.189646	0.6632	Accept Ho	No Autocorrelation
Inflation Models	3A	2.119282	0.3466	Accept Ho	No Autocorrelation
BOP Models	4A	2.001373	0.3676	Accept Ho	No Autocorrelation
	4B	1.517489	0.4683	Accept Ho	No Autocorrelation

**Source:** E-views statistical software 9.0

Table 4.2 shows that there was no presence of serial correlation in the models. Therefore the null hypotheses of no serial correlation for the models were accepted.

### 4.1.3 Heteroskedasticity Tests

Since non-constant variance can cause the estimated models to yield a biased result, the general heteroscedasticity test was adopted for the study. It was aimed at testing whether the error variance of each observation was constant or not. The heteroskedasticity tests were conducted using White's heteroskedasticity test.

**Table 4.3: White's Heteroskedasticity Tests**

	<b>Models</b>	<b>Obs* r-squared</b>	<b>Probability</b>	<b>Conclusion</b>	<b>Remark</b>
GDP Models	1A	8.433508	0.5866	Accept Ho	Homoskedasticity
	1B	15.96584	0.6596	Accept Ho	Homoskedasticity
Unemployment Models	2A	10.42294	0.2366	Accept Ho	Homoskedasticity
Inflation Models	3A	6.866517	0.738	Accept Ho	Homoskedasticity
BOP Models	4A	14.6035	0.1024	Accept Ho	Homoskedasticity
	4B	14.36255	0.11	Accept Ho	Homoskedasticity

**Source:** E-views statistical software 9.0

Table 4.3 shows that a probability greater than 1%, 5%, and 10% (in this case 5%) means that the null hypotheses cannot be rejected, that is, there is every reason to believe that the data were Homoskedastic as desired.

**Table 4.4: Summary of Empirical Findings Long Run Analysis**

<b>Fiscal Policy Variables</b>	<b>Gross Domestic Product (GDP)</b>	<b>Unemployment Rate (UNE)</b>	<b>Inflation Rate (INF)</b>	<b>Balance of Payment (BOP)</b>
Government Expenditure (GE)	Positive and Significant	Negative and Non-significant	Negative and Significant	Positive and Non-significant
Government Revenue (GR)	Positive and Significant	Negative and Non-significant	Negative and Non-significant	Positive and Non-significant
Domestic Debt Stock (DDS)	Positive and Significant	Positive and Significant	Positive and Non-significant	Negative and Non-significant
External Debt Stock (DDS)	Negative and Significant	Negative and Significant	Positive and Non-significant	Negative and Non-significant

**Source:** E-views statistical software 9.0

Having established stationarity of the variables and their static relationships, we determined the existence of a long-run equilibrium relationship among the variables in the models. To realize this, the study employed the Johansen co-integration technique. The trace test was chosen because it examines the number of linear combinations to be equal to a given value and also more powerful than the max eigen test when it comes to having more than one stationarity process. The cointegration results of the variables are displayed in table 4.5.

**Table 4.5: Johansen Cointegration Tests**

	<b>Models</b>	<b>Trace Statistics</b>	<b>0.05 Critical Value</b>	<b>Probability</b>	<b>Remark</b>
GDP Models	1A	58.19052	47.85613	0.004	Cointegrated
	1B	59.93525	54.07904	0.0137	Cointegrated
Unemployment Models	2A	48.37217	47.85613	0.0447	Cointegrated
	2B	37.37062	47.85613	0.3303	Not Cointegrated
Inflation Models	3A	61.38554	47.85613	0.0016	Cointegrated
	3B	37.37062	47.85613	0.3303	Not Cointegrated
BOP Models	4A	75.25454	47.85613	0.0000	Cointegrated
	4B	57.90205	47.85613	0.0043	Cointegrated

**Source:** E-views statistical software 9.0

At this stage, the over parameterized models were found to be difficult to interpret in any meaning way but could still be explained to some extent based on the probability values. This then led to the simplification of the models into a more interpretable characterization of the data. That is, parsimonious ECM(s) were estimated. Parsimony helped to ensure data admissibility and proper classification on whether the models were consistent with theory. The parsimonious ECM(s) considered the variables that adjusted rapidly to equilibrium between the leading and the lagged variables. However, there were no error correction mechanisms for models 2b and 3b as no long run equilibrium relationship existed. The tables below show the results of the parsimonious ECM(s) conducted on the specified parameters:

**Table 4.6: Summary of Empirical Findings Short Run Dynamics**

<b>Fiscal Policy Variables</b>	<b>Gross Domestic Product (GDP)</b>	<b>Unemployment Rate (UNE)</b>	<b>Inflation Rate (INF)</b>	<b>Balance of Payment (BOP)</b>
Government Expenditure (GE)	Positive and Significant	Negative and Non-significant	Positive and Significant	Positive and Significant
Government Revenue (GR)	Positive and Significant			Positive and Significant
Domestic Debt Stock (DDS)	Positive and Significant	Positive and Non-significant	Positive and Non-significant	Negative and Significant
External Debt Stock (DDS)	Negative and Significant	Negative and Significant	Negative and Non-significant	Negative and Significant

**Source:** E-views statistical software 9.0

## 5. CONCLUSION AND RECOMMENDATIONS

This study examined the Keynesian claim that there is need for government intervention for the economy of a country to progress by modeling the short run and long run relationship between fiscal policy variable and selected macroeconomic variables. For our empirical analysis, we conducted a static regression analysis using Ordinary Least Square (OLS) multiple regression of the independent variables on the dependent variables to obtain the impact of fiscal policy variable on selected macroeconomic variables. Similarly, we conducted a stationarity test and determined the long-run impact of fiscal policy variables on Macroeconomic variables using the Johansen cointegration analysis and the Error correction mechanism (ECM). Based on the findings of this study, the following recommendations are given:

- i) The Nigerian government should focus on increasing its expenditures since it affects growth positively and significantly. Especially, the government should increase capital expenditures
- ii) The Nigerian government should adopt measures to diversify the productive sectors of the economy to create adequate job opportunities not just the oil industry (Agriculture, solid mineral, automobile, and Micro, small and medium enterprises (MSMEs) etc).
- iii) Revenue should be well-coordinated by enhancing adequate domestic resource mobilization. The FIRS (Federal Inland Revenue Service), along with all states' revenue services, should be committed to mobilizing resources for the effective functioning of the economy. This can be achieved via active tax reforms that would reposition the Nigerian tax system.
- iv) Government borrowings, if any, should be geared into productive sectors while sustainable debt payment mechanisms should be strictly adhered to.
- v) The Nigerian government needs to improve public financial management. This entails sound budget preparation and ensuring financial sector soundness to avoid financial reactions that would disrupt fiscal activities.
- vi) Enhanced focus on appropriate import substitution and export promotion acts to reduce huge external reliance on foreign goods.

Fiscal policy is an important tool in stabilizing the economy. Their effects, as macroeconomic management tools, have not been efficient. In other words, fiscal policies have been laudable in 'black and white' but with minimal implementation. The government must achieve its policy directions. They must engage in strategic planning in order to achieve the macroeconomic goals. Expenditure priorities should not only appear on paper; they should be

adequately implemented. If the Nigerian government can formulate and implement strong fiscal policies with a wide social network capability, then the effects of fiscal policy measures will impact positively on the economy.

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