



# An Analysis of the Relationship between Fiscal Deficits and Selected Macroeconomic Variables in Nigeria, 1980 - 2016

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**Abstract:** *This research aims at investigating the true relationship that exists between Government Deficit Spending and key macroeconomic indicators (GDP, Inflation, Government Expenditure and Unemployment). The period covered is 1980 to 2016. The study employed multiple regression methods relying on the Ordinary Least Square technique in estimating the equation. Augmented Dickey Fuller (ADF) test, Johansen Co-integration, Vector Error Correction Mechanism and Granger Causality Test were conducted respectively. However, the empirical findings showed that fiscal deficits even though that it met the economic a prior in terms of its negative coefficients yet, did not significantly affect macroeconomic output. The result also shows that Government Deficit Spending has positive significant relationship with Private Domestic Investment and Money Supply while it has an inverse relationship with Economic Growth. The granger causality test established the fact that Government deficit does not granger cause economic growth. The result of the OLS also reveals that one percent increase in fiscal deficit is capable of diminishing economic growth by about 0.24 percent; Based on the findings, the researcher made the following suggestions: government should as a matter of urgency and importance adopt fiscal management actions that aim at minimizing borrowing and capable of reducing fiscal deficits that often result in large chunk of transfer payments, and questionable extra budgetary expenses. Finally, government should minimize the level of deficit e.g by borrowing less for effective control of inflation rate in Nigeria. The need arises because this study has shown that increase in fiscal deficit increases money supply which negatively affects output growth. Efforts should therefore be made to control the excess liquidity in the economy by a combination of a good fiscal and monetary policy framework to curb the unending inflationary cases in the country.*

**Keywords:** *Fiscal deficit, Domestic private investment, Broad money supply, Inflation, GDP*

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## 1.0 INTRODUCTION

The aim of every government is to achieve the macroeconomic goals of low and stable domestic prices, high and sustained aggregate demand, low and acceptable level of unemployment, high and sustainable economic growth amongst others. To achieve these goals government often rely on the use of a mix or either of monetary and fiscal policy. Whereas the former involves government effort to directly control the movement and direction of monetary aggregates such as credit facilities the latter involves the collection of taxes and government spending. When government spending exceeds its revenue the government is said to be running deficit budgeting. To finance this deficit, government use at least one of four ways which include: (i) money printing; (ii) running down foreign exchange reserves; (iii) borrowing abroad; and (iv) borrowing from the domestic economy. The method chosen to finance government deficit affects resource allocation and by implication macroeconomic activities. The focus of this study is on financing public deficit through domestic and external borrowing.

The Nigerian government has greater influence on the nations economic activities through the use of fiscal instruments amongst which are budget deficit operation. However, this has effect on macroeconomic variables such as interest rate, exchange rate, inflation, consumption, investment, etc which serve as media through which budget deficit affects economic development. In Nigeria, for example, high incidence of projected budget deficit persists and the risk of severe adverse consequences must be taken very seriously, although it is impossible to predict when such consequences may occur. For instance, Oyejide (1972), established, that Nigeria started experiencing budget deficit in her budgetary system since 1957 and became persistent in the 1970s prior to the civil war of 1967 to 1970, and up till date, Nigeria only has seven years of budget surplus CBN (2005). The budget deficit recorded for the remaining years were as a result of many factors that made the proposed expenditure to exceed the expected revenue. Some of these factors are: mismanagement of available resources, fall in the price of oil in the world market, corruption, social and religious crises, creation of more states and local governments, Egwaikhide (1996). Inflation is one of the variables affected by budget deficit operation over the years in Nigeria. Government has continuously pursued an expansionary fiscal policy with the exception of the years 1970, 1971, 1973, 1974, 1979, 1980 and 1996 (CBN, 2005). This was in a view to improve economic growth and economic development. However, the major impact of the increase in budget deficit was felt in 1993, with high rate of inflation which shows an evidence of a positive relationship between budget deficit and inflation in Nigeria,

### Statement of the Problem

The relationship between government deficit spending and macroeconomic variables such as GDP, government deficit, Inflation, money supply, and private domestic investment etc. represents one of the most widely discussed issues among macroeconomists. Advocate of Keynesian postulation argue that government deficit spending may be necessary especially when the economy is in a recession or depression. However, the monetarists maintain that government deficit spending is detrimental to the economy. Besides different scholars have carried out empirical studies into the impact of fiscal deficit on the performance of

macroeconomic variables. However, their submissions have been conflicting. For example Eze(2015), Agbo (2015), Anyanwu & Oaikhenan (2000), hold the view that government deficit spending will result in increase in economic growth (GDP). In other hand, some researchers believe that deficits are negatively related with output growth (see Soludo 1998, Dalyop 2010, Wosowei 2013,).

As regards Money Supply and Inflation, Onwioduokit (1999), opines that government deficit spending causes inflation. This is contrary to the findings of Omoke and Oruta (2010), whose work concludes that government deficit do not cause inflation.

Aisen & Hawner (2008), hold the view that increase in budget deficit may not have significant effect in developed countries but may be significant for developing countries but on country specific. The existence of these differences has inspired this study based on these points. First, conclusions from earlier works on government deficit spending on selected macroeconomic variables are conflicting as explained above. Secondly, in the context of the works, most deal on developed countries. But even in the studies done in Nigeria, there are varying results and conclusions. Thirdly, the timeframe of previous studies seen by the researchers in the literature are shorter periods than the period of the present study that spanned 1980-2016 (i.e. 36 years). Even the most current work in the literature seen by the researcher ends in 2015. This study then can arguably be said to be very current, being two years more current than the last study. Thus the study is justified based on the gaps identified above.

### **Objectives of the Study**

The broad objective of the study is to determine the relationship between fiscal deficit and macroeconomic performance in Nigeria. Specifically, the study will:-

1. Determine if fiscal deficit predict domestic private investment in Nigeria.
2. Examine to what extent fiscal deficit have explained the broad money supply in Nigeria
3. Evaluate if fiscal deficit predicts the growth of Nigeria`s GDP
4. Establish the existence or not of any significant causal relationship between fiscal deficit and selected macroeconomic variable.

## **2.0 LITERATURE REVIEW**

### **Theoretical Literature**

Theories of budget deficits run in two general directions. Some theories look on the effect of fiscal deficits on economic variables. Others look on the reverse direction, that is, what macroeconomic and fiscal variables (including budget rules and institutions) affect and determine fiscal deficits.

### **The Monetarist Hypotheses (MH) on budget deficits and money supply**

While reflecting on the effect of money supply, monetarists argued that the model of real economic activity should maintain a definite amount of actual money supply. The theory maintained that price is determined by the amount of money in circulation. The logic behind this position is that following the nominal money supply which is usually fixed by the central

bank of a country, changes in the price of goods will be assumed as a single price which will in turn make the purchasing power of the amount of money in circulation equal to the expected level of real balances. In practical terms, what it implies is that the central bank always makes sure that the quantity of money agents want for their dealings is fixed within a desired range. When the money in circulation is not equal to the planned balances at a given time, this will result to price changes. As a result, changes in prices will be elastic and fixed solely by other factors outside the money in circulation.

### **MUNDSELL- FLEMING MODEL**

This study was anchored on the famous model developed by the works of Robert Mundell (1968) and J. Marcus Fleming (1967), other wise known as Mundell-Fleming model. It provided another way of analyzing how the budget and the selected macroeconomic variables are related. In a nutshell, the Mundell-fleming model captures the general objective of this thesis, which is to analyze effects of budget deficits on selected macroeconomic variables. The model assumes capital is mobile across the globe with a uniform interest rate. (Olga, 2000). It maintains that a positive link exists among the two deficits (budget and trade deficits) and as put by Olga (2000), "causality runs from budget deficit to current account deficit and not the reverse as discovered by some authors". The model is often used by the conventional Keynesians to argue that a rise in the budget deficits and domestic absorption are positively related. This will increase aggregate demand and put upward pressure on domestic interest rate above the world rate. This in turn increases imports, reduce export and bring about a rise in the rate of exchange thus worsening the current account balance. In all, the summary of this hypothesis is that as budget deficit rises, demand for interest will be stimulated thereby attracting inflows. This will as well cause rise in the prices of exchange rates thus facilitating rise in trade account deficit.

### **Empirical literature**

Large number of scholar have carried out series of studies on the effect of deficit on the growth of the Nigerian economic, hence, the need to highlight some of these study is essential. Isah, (2012), examined the impacts of deficit financing on private investments in Nigeria. The study also meant to establish how budget deficit financing can reduce domestic private investment. The study employed Secondary data collected largely from CBN statistical bulletin, Bureau of statistic bulletin for various years. The multiple regression econometric method was also adopted in determining the influence of deficit financing on private savings in Nigeria. The study shows that there exist an inverse a negative correlation between budget deficit and private savings in Nigeria. The paper recommended that government should fashion out measures that would support the private investor more by reduction in the size of budget deficits. In addition, the study suggested that deficit funded from the capital market should be emphasized as this is the only sure way of minimizing the reduction of domestic private.

Blejar & Khan (2010), carried out a study in Cote'Divore, Thailand and Argentina. They used panel data spanning from 1986 to 2008. Applying multiple regression method, the study discovered that budget deficits have an inverse impact on private savings in the countries sampled. On the other hand, the impact is more significant in Thailand but showed that in

Cote'diovre, the significant level is weaker. The study also revealed that deficit financing have more significant and an inverse on Argentina economy. Moreover, Blejar & Khan (2010), also discovered that government spending or expenditure in the above countries reduced domestic private investment. The study therefore concluded that budget deficit and government spending reduces domestic private investment through domestic market in Argentina, Cote'diovre and Thailand.

Omoke & Orunta (2010), studied Budget Deficits, Money Supply and Inflation in Nigeria. Using inflation as independent variable and budget deficit and Money supply as dependent variables and with the application of ADF and P-P techniques to test for unit root, they concluded that there is no long term relationship between fiscal deficits, money supply and inflation in Nigeria. In another study, Onwiodukit (2001), studied fiscal deficits and inflationary dynamics in Nigeria. Using time series data from 1970-1994, he wanted to ascertain the impact of fiscal deficits (deficit spending of government) on inflation as well as impact of inflation on deficits spending. In other words he wanted to establish whether it is deficit spending that causes inflation or the other way round. Using Granger Causality test, his study says that fiscal deficits cause inflation. He recommended that government should not only control deficit spending but also the mode of financing the deficits.

Olusoji & Oderinde (2011), in their study of fiscal deficit and inflation Trend in Nigeria, like Onwioduokit (2001), wanted to find out whether deficit spending causes inflation or is it inflation that causes deficit spending. Their study did not establish any clear evidence of causality relationship between fiscal deficit and inflation in Nigeria for the period of study, 1970-2006. Their finding is somewhat close to the finding of Onwioduokit (2001). The findings indicate a causality link between deficit spending and inflation but not from inflation to deficit spending. Olusoji & Oderinde (2011), also reported the work of Folorunso & Abiola (2000), whose study also established a significant relationship between fiscal deficits and inflation in Nigeria.

Ezeabasili, Mojekwu & Herbert (2012), made empirical study of fiscal deficits and inflation in Nigeria, using Co-integration and Ordinary Least Squares (OLS) techniques. Their results reveal a positive but insignificant relationship between inflation and fiscal deficits in Nigeria. They also reported a positive long run relationship between money supply and inflation suggesting that money supply is procyclical and tends to grow at a faster rate than inflation rate.

Folonrunsho & Abiola (2006), examined the long-run determinants of inflation in Nigeria. Applying cointegration and error correction mechanism on annual time-series data for the period 1970 to 1980, the results showed that inflation in Nigeria is caused by the level of income, money supply, and public sector imbalance.

Wosowei (2013), analyzed the relationship between fiscal deficit and macroeconomic aggregated in Nigeria from 1980-2010. The study revealed that government expenditure does not stimulate economic growth in Nigeria.

### 3.0 METHODOLOGY

#### Research Design

The data will be annual data covering the period 1980 – 2016 for all variables used for the empirical estimation. The research work will make use of the econometric procedure in estimating the relationship between the variables. The ordinary least square (OLS) technique will be employed in obtaining the numerical estimates of the coefficients of the equation. Argumented Dicky-fuller test of stationarity would be adopted after which Granger causality test can be used to determine the causation between government deficit and GDP, Inflation rate and GDP and also unemployment rate and GDP, after which Johansen cointegration test would be employed to test the existence of long run relationship between government deficit, inflation, unemployment rate and the gross domestic product. The Error Correction Model was also employed to test the convergence between short term disequilibrium and long term equilibrium

#### Model Specification

The study made use of secondary data and our analytical tool was ordinary least square (OLS). Following the broad objective of this study which is to “Investigate the Relationship between Government Deficit and Macroeconomic Performance in Nigeria”, below are the models that will be tested:

#### Model Specification for Objective One

To determine if budget deficits predict domestic private investment in Nigeria within the sample period, the researcher specified the model below to address the above stated objective. The model that will capture this relationship is specified below:

$$PI_t = \beta_0 + \beta_1 GDEF_t + \beta_2 MS_t + \beta_3 GDP_t + \varepsilon_{1t} \quad (1)$$

Where;

$PI_t$  = Value of Domestic private investment

$Bd_t$  = budget deficits at time t

$MS_t$  = money supply

$GDP_t$  = Gross Domestic product at time t

$\beta_0 - \beta_3$  refers to the parameters to be estimated

$\varepsilon_t$  = omitted variable

A priori expectation: ( $\beta_0 - \beta_3 > 0$ )

#### Model Specification for Objective Two

The second objective for this study is to determine to what extent budget deficits have explained the broad money supply in Nigeria from 1980 to 2016. The structural model that addressed this objective was specified as shown below:

$$M_{2t} = \alpha_0 + \alpha_1 GDEF_t + \alpha_2 INFL_t + \alpha_3 GDP_t + \mu_{2t} \quad (2)$$

Where;

$M_{2t}$  = Broad money supply at time t

$Bd_t$  = Budget Deficits at time t  
 $INFL_t$  = Nominal Inflation rate at time t  
 $GDP_t$  = Nominal Gross Domestic Product at time t  
 $\mu_{2t}$  = omitted variable  
 $\alpha_0 - \alpha_3$  = parameters estimated.

It is expected that

$\alpha_0, > 0, \alpha_1 < 0, \alpha_2 > 0, \alpha_3 > 0, .$

### Model Specification for Objective Three

Objective three was set out to evaluate if budget deficits predict the growth of Nigeria's Gross domestic product or not between 1980 and 2016. This model becomes necessary especially now that the Keynesian fiscal policy is under scrutiny as the only panacea to the myriads of economic ills besetting the developing countries, including Nigeria. The model was specified as follows:

$$GDP_t = \pi_0 + \pi_1 GDEF_t + \pi_2 INF_t + \pi_3 PI_t + \mu_{4t} \quad (3)$$

### Model Specification for Objective Four

To establish the existence or not of any significant causal link among budget deficits and the chosen macroeconomic aggregates in Nigeria, the researcher used system equation generated from the OLS residuals and supported by Granger causality tests to establish whether there is feedback or not among the included variables. Granger causality is specified as:

$$lnFD_t = \sum \vartheta_1 lnMS_{t-i} + \sum \beta_1 lnPI_{t-i} + \sum \beta_2 GDP_{t-i} + \mu_{1t} \quad (4)$$

## 4.0 PRESENTATION AND ANALYSIS OF DATA

Presented below are the results of the regression on budget deficits and the performance of selected macroeconomic variables in Nigeria between 1980 and 2016. To achieve this objective, the following variables were selected for examination, namely, growths in budget deficits (GDEF), Private investment (PI), Broad money supply (M2) and Gross Domestic Product (GDP), Inflation (INF). The model was specified into three distinct Equations. Equation 1 related Private investment (PI) as a function of Budget (GDEF); Equation 2 specified broad money supply (M2) as a function of Budget deficits (GDEF). Equation 3 related Gross Domestic Product (GDP) as a function of Budget deficits (GDEF).

### PRESENTATION OF RESULT

#### Model 1: Private Investment Model

$$PI = a_0 + a_1 GDEF + a_2 INF + a_3 MS + a_4 GDP + U_t$$

#### Model 2: Broad Money Supply Model

$$MS = a_0 + a_1 GDEF + a_2 INFR + a_3 GDP + a_4 PI + U_t$$

#### Model 3: Broad Money Supply Model

$$GDP = a_0 + a_1GDEP + a_2INFR + a_3MS + a_4PI + Ut$$

A simple linear ordinary least square method of estimation was applied to our earlier outlined methods. The overall results are expressed below.

**Model 1 Regression result**

$$PI = 3.263 + 4.021a_1 + 2.740a_2 - 3.543a_3 + 0.713a_4 + e$$

t-value (2.671) (3.353) (2.032.76) (-2.490) (5.279)  
p-value 0.053 0.001 0.048 0.052 0.000  
Coefficient of determination ( $R^2$ ) 0.89

**Model 2 Regression result**

$$MS = 9.654 + 2.363a_1 + 0.09a_2 + 3.844a_3 + 0.653a_4 + e$$

t-value (2.376) (2.335) (2.256) (2.465) (5.279)  
p-value 0.046 0.036 0.052 0.045 0.000  
Coefficient of determination ( $R^2$ ) 0.68

**Model 3 Regression result**

$$GDP = 36.986 - 0.245a_1 - 2.199a_2 + 0.003a_3 + 1.270a_4 + e$$

t-value (6.232) (-2.181) (-2.574) (0.345) (2.543)  
p-value 0.00 0.043 0.014 0.731 0.058  
Coefficient of determination ( $R^2$ ) 0.57

**Analysis of Result**

**Model 1: Private Investment Model**

**Government Deficits**

Government deficits have coefficient 4.021, this implies that an increase in Government deficits increases private investment by 4.021. This result conforms to expectation because deficit spending always increases private investment following economic theory. It is statistically significant judging from its t-value of 3.353.

**Gross Domestic Product**

The coefficient of GDP is positive, implying that there is positive relationship between GDP and private investment. A unit increase in GDP will cause private investment to increase by 2.740 units. GDP is statistically significant as evidenced by the t-value of 2.032.

**Inflation**

The coefficient of inflation is -3.543; implying that a unit increase in inflation rate will decrease private investment by -3.543. This result meets our economic expectation since inflation reduces income. It was not statistically significant as evidenced from the t-value of - 2.490.

**Money Supply**

Money supply has a coefficient of 0.713. The coefficient depicts a positive relationship between money supply and private investment. This implies that as money supply increases in an economy, there is an increase in private investment. From the result in Appendix 2, it is shown that a unit increase in money supply will lead to approximately 0.713 units increase in private investment. This is in line with the apriori expectation or the dictates of economic theory.



### **Model 2: Money Supply Model**

#### **Government Deficit**

Increase in government deficit increases the money supply within the period under study and also statistically significant. This is in line with economic postulations because while huge fiscal deficit leads to high government borrowing, and injecting fund in the economy.

The coefficient of GDEF is 2.363; implying that a unit increase in government deficit will increase money supply by 2.363

#### **Inflation**

The coefficient of inflation is positive, implying that there is positive relationship between inflation and money supply. A unit increase in inflation will cause money supply to increase by 0.09

#### **Gross Domestic Product**

The coefficient of GDP is 3.844; implying that a unit increase in GDP will increase money supply by 3.844,

### **Model 3: Gross Domestic Product Model**

#### **Government Deficits**

Government deficits have coefficient -0.245, this implies that a decrease in Government deficits increases GDP by 0.245. This result conforms to previous research by Soludo (1998), Wosowei (2013). It is statistically significant judging from its t-value of 2.181.

#### **Inflation**

The coefficient of inflation is -2.199; implying that a unit increase in inflation rate will decrease GDP by -2.199. This result meets our economic expectation since inflation reduces income. It was also statistically significant as evidenced from the t-value of - 2.574.

#### **Money Supply**

Money supply has a coefficient of 0.003. The coefficient depicts a positive relationship between money supply and GDP. This implies that as money supply increases in an economy, there is an increase in gross domestic product

#### **Coefficient of determination R<sup>2</sup>**

The coefficient of determination R<sup>2</sup> which is 0.57, show that the explanatory variables explained 57% of the total variation in the dependent variable

The reported Durbin Watson (DW) statistics is 1.17 indicating that there is slight negative autocorrelation among the variables.

#### **Unit Root Test**

This test tries to examine the property of the variables. It is used to check for the presence of a unit root i.e. no stationarity of the variables. This test is carried out using the Augmented Dickey Fuller (ADF) test.

#### **The hypotheses to be tested are:**

H<sub>0</sub>: Presence of unit root

H<sub>1</sub>: Stationarity

#### **Decision Rule**

If t statistics value is > ADF critical value we reject H<sub>0</sub> and accept if otherwise

The result revealed that all the variables of the model are found to be stationary at both 1 percent, 5 percent, and 10 percent level with first difference (d(1), which is indicated by ADF results at all levels is greater than the critical values in negative direction. Thus, we conclude that the variables under investigation are integrated of order one. i.e.I (1)). Since the variable are integrated of the same order. We therefore, examine their co-integrating relationship using Johansen co-integration procedure.

**COINTEGRATION TEST**

The Johansen cointegration test result contains **Appendix 7** confirm the existence of long run relationship between the dependent and independent variables as indicated by the TRACE-statistic.

This test seeks to identify the number of co-integrating relationships that exist among these variables. We adopts the co-integration method developed by Johansen (1991) popularly called the Johansen co-integration test. This test identifies the number of stationary long run relationship that exists among the set of integrated variables.

The co-integration test was carried out using Eviews software package and it produced the following results:

**JOHANSEN COINTEGRATION TEST**

Series: GDP GDEF INF GEXP UNEMP

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No of CE(s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob **
None*	0.774255	114.6296	69.81889	0.0000
At most 1*	0.560050	62.53730	47.85613	0.0012
At most 2*	0.529057	33.79898	29.79707	0.0164
At most 3	0.191239	7.443332	15.49471	0.5267
At most 4	0.000415	0.014519	3.841466	0.9039

**Source: Author`s Computation using Eview 9.5**

The Johansen cointegration test results contain in the table above confirm the existence of long run relationship between the joint variables as indicated by the TRACE-statistic. The TRACE statistic results revealed that there are 3 cointegrating equation at 5 percent level . The result of the maximum eigenvalue test also supports the above findings.

**Granger Causality Test**

This section looked at the direction of causality between government deficit and the macroeconomic variables used in this study. This becomes necessary because of the strong contention in economic circle that in some cases an increase in one variable may lead to an increase in another variable but actually there may be no causality relationship between them. The pair wise Granger Causality Test shown in **Appendix 8** showed that bilateral relationship exists between private investment and government deficit and also money supply and fiscal deficit while unilateral relationship exist between gross Domestic product and private investment.

### **Error Correction Mechanism (ECM)**

The purpose of the error correction model is to indicate the speed of adjustment from short run equilibrium to the long run equilibrium state. The greater the coefficients of the parameter, the higher the speed of adjustment of the model from the short run to the long run equilibrium.

The regression result in **Appendix 9** shows the output of the Error Correction Mechanism using the Generalized Least Square Method. This model has to be transformed to take care of serial correlation and heteroskedasticity problems. The apriori for the vector error correction coefficient (alpha) is that it must be negative.

The ECM is of the Form:

$$PI_t = 2.147 + 0.187GDEF + 0.091GDP + 0.241MS + 0.639INF - 0.52ECM$$

From the above equation, the rate of the adjustment from the short-run disequilibrium to the long run equilibrium is approximately 0.5. This result is significant at 1%, 5% and 10% levels. The result meets this expectation and this implies that 51 percent of the errors are corrected in the long run. So it will take approximately 2 years for the disequilibrium in the short-run to be cleared.

## **5.0 CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

Based on the results of the data analysis, we draw the following conclusions.

1. That fiscal deficit predicts domestic private investment in Nigeria for the period under review.
2. That deficit spending, gross domestic product and money supply are positively and significantly related to private investment
3. That budget deficits spending is negatively related to economic growth in Nigeria. It is shown that a 1 percent increase in fiscal deficit is capable of dampening economic growth by about 0.245%. This result is consistent with prior studies (see, for example, Soludo 1998, Wosowe 2013)
4. That a significant long run and causal relationship between fiscal deficit and macroeconomic variable.

### **Recommendation**

Based on our findings and the conclusions, we suggest the following recommendations.

1. We also recommend that the government should reduce its recurrent expenditure and spend the deficit on economically viable and productive ventures that will boost economic activities and provide jobs for the teeming Nigerian labour force. This will help to reduce unemployment.
2. The government should diversify and broaden its revenue base so as to reduce the vulnerability of the economy to negative shocks from oil revenue. This will ensure greater revenue to take care of government's proposed expenditure than to resort to

deficit budgets to bridge the gap between proposed expenditure and actual revenue. Hence the negative consequences of deficit financing would be reduced.

3. Government should minimize the level of deficit e.g by borrowing less for effective control of inflation rate in Nigeria. The need arises because increase in fiscal deficit increases money supply which negatively affects output growth
4. Government should as a matter of urgency and importance adopt fiscal management actions that aim at minimizing borrowing and capable of reducing fiscal deficits that often result in large chunk of transfer payment, and extra budgetary expenses of questionable viability. For instance, government should ensure that unjustifiable frivolous expenditure proposals do not find their way into the overall budget proposals of the government.
5. There should be probity, transparency, accountability and fiscal discipline on the part of government officials charged with the responsibility of executing government policies and programmes. This will ensure that money earmarked for development projects are judiciously spent
6. Government must adopt fiscal adjustment mechanism that increases revenue through improved taxes rather than borrowing to finance deficit and dependence on crude oil.

## REFERENCES

- Aisen, A. & Hauner D, (2008). Budget Deficits and Interest Rates. A Fresh Perspective. *IMF Working Paper*. WP/08/42.
- Anyanwu J.C & Oaikhenan H.E. (1995) *Modern Macroeconomics: Theory and Application in Nigeria* Onitsha, Joanee Educ. Publishers
- Barro R (1991). Are Government Bonds Net Wealth? *Journal of Political Economy*, 82,6, Nov/Dec, PP:1097-1117.
- Central Bank of Nigeria (2012), *Statistical Bulletin*. Abuja: Central Bank of Nigeria
- Dalyop, T. G (2010). Fiscal deficits and the growth of domestic output in Nigeria, Jos. *Journal of Economics* 4(1) pp 153-173
- Egwaikhide, F.O. (1991) Determinants of Fiscal Deficits in Developing Economy; evidence from Nigerian. *Journal of Economic and Social Studies* Vol. 33. No 3.
- Ezeabasili, V.N., Tseghe, I.N; & Ezi-Herbert, W. (2012). Economic growth and fiscal deficits: Empirical evidence from Nigeria. *Economics and Finance Review*, 2(6) 85- 96.
- Eze, T. C. (2015). Budget deficit and performance of macroeconomic variables in Nigeria: *Unpublished Ph.D Thesis*: Ebonyi State University.
- Folunsho, B.A., & Abiola, A.G. (2000). The long-run determinants of inflation in Nigeria, (1970-1998). *The Nigerian Journal of Economics and Social Studies*, 42(1): 37-52.
- Kim, J. (2006). Fiscal policy and exchange rate-current account nexus: *International Monetary Fund Working Paper* 07(27).
- Maji, A., Bagaji, A.S.Y., Etila, M.S., & Sule, J.G. (2002). An investigation of causal relationship between fiscal deficits economic growth and money supply in Nigeria (1970-2009). *Canadian Social Sciences*, 8(2): 219-229.

- Okogu, B. (2014). Citizen's guide to the federal budget 2014: *Budget Office of the Federation: Federal Ministry of Finance.*
- Olga, V. (2000). Twin deficits hypothesis: The case of Ukraine. A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy (Ph.D) in Economics at the national University Kyiv-Mohyla Academy
- Olusiji M.O & Oderinde L.O (2011). Fiscal Deficit and Inflationary Trend in Nigeria: A Cross-casual Analysis, *Journal of Economic Theory* 5(2)
- Omoke Philip C. & Oruta Lawrence I. (2010). Budget Deficit, Money Supply and inflation in Nigeria, *European Journal of Economics, Finance and Administrative Sciences*, Issue 19, <http://www.eurojournals.com> retrieved 23/3/2012
- Onwioduokit E.A. (1999). Fiscal Deficits and Inflation Dynamics in Nigeria: An Empirical Investigation of casual Relationship, *CBN Economic and Financial Review* Vol. 37(2) pp. 1-16
- Oyejide, T.A. (1972), Deficit financing, inflation and capital formation. An Analysis of the Nigeria Experience, 1959-1970. *The Nigeria Journal of Economic and Social Sciences* 14:22-43.
- Soludo, C.C. (1998a) Fiscal Deficit. Exchange rates and External balance: Evidence from Nigeria: Paper accepted for publication in *Africa Economy and social review*. Vol. 3. No.1-2
- Wosowei, E. (2013). Fiscal deficits and macroeconomic aggregates in Nigeria. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 29(9): 72-82.

### Regression Result Appendix 1

Dependent Variable: PI

Method: Least Squares

Date: 09/06/17 Time: 13:18

Sample: 1980 2016

Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDEF	4.021748	1.200050	3.353437	0.0013
GDP	2.740921	1.351774	2.032382	0.0482
INF	-3.543459	1.428203	-2.490277	0.0522
MS	0.712967	0.135041	5.279648	0.0000
C	3.263691	1.220954	2.671060	0.0535
R-squared	0.899494	Mean dependent var		942.0795
Adjusted R-squared	0.886930	S.D. dependent var		1153.118
S.E. of regression	3.745530	Akaike info criterion		14.88366
Sum squared resid	1.080318	Schwarz criterion		15.10136
Log likelihood	-44.34778	Hannan-Quinn criter.		14.96041
F-statistic	16.59697	Durbin-Watson stat		1.051725
Prob(F-statistic)	4.236590			

### Regression Result Appendix 2

Dependent Variable: MS  
 Method: Least Squares  
 Date: 09/06/17 Time: 14:37  
 Sample: 1980 2016  
 Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.654070	4.079945	2.376396	0.0463
GDEF	2.362942	1.010206	2.335526	0.0363
GDP	3.843897	1.563719	2.465597	0.0457
INF	0.092624	0.040100	2.256403	0.0527
PI	0.652976	0.123678	5.279648	0.0000
R-squared	0.684426	Mean dependent var		24.70081
Adjusted R-squared	0.782479	S.D. dependent var		23.41137
S.E. of regression	31.07395	Akaike info criterion		14.79577
Sum squared resid	7.954597	Schwarz criterion		15.01346
Log likelihood	-28.72171	Hannan-Quinn criter.		14.87251
F-statistic	5.683060	Durbin-Watson stat		1.257983
Prob(F-statistic)	0.048521			

### Appendix 3

Dependent Variable: GDP  
 Method: Least Squares  
 Date: 09/06/17 Time: 14:14  
 Sample: 1980 2016  
 Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	36.93635	5.926743	6.232151	0.0000
GDEF	-0.245370	0.115240	2.181811	0.0434
INF	-2.199725	0.854352	-2.574729	0.0149
MS	0.002584	0.007477	0.345597	0.7319
PI	1.270023	0.507158	2.543824	0.0582
R-squared	0.576566	Mean dependent var		19.63486
Adjusted R-squared	0.486137	S.D. dependent var		17.43088
S.E. of regression	15.72516	Akaike info criterion		8.473489
Sum squared resid	12.98081	Schwarz criterion		8.691181
Log likelihood	-151.7596	Hannan-Quinn criter.		8.550236
F-statistic	3.058368	Durbin-Watson stat		1.178041
Prob(F-statistic)	0.030534			

**Appendix 4**

Null Hypothesis: D(PI) has a unit root  
 Exogenous: Constant  
 Lag Length: 0 (Automatic - based on SIC, maxlag=0)

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	<b>-2.124924</b>	<b>0.0046</b>
Test critical values:		
1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(PI,2)  
 Method: Least Squares  
 Date: 09/14/17 Time: 13:21  
 Sample (adjusted): 1982 2016  
 Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PI(-1))	-1.454127	0.178971	-8.124924	0.0000
C	97.86062	60.90990	1.606646	0.1177
R-squared	0.666715	Mean dependent var		31.05429
Adjusted R-squared	0.556616	S.D. dependent var		9.309623
S.E. of regression	7.049433	Akaike info criterion		14.64907
Sum squared resid	81.83025	Schwarz criterion		14.73795
Log likelihood	-254.3587	Hannan-Quinn criter.		14.67975
F-statistic	66.01439	Durbin-Watson stat		1.933887
Prob(F-statistic)	2.125874			

## Appendix 7

Date: 09/15/17 Time: 11:56  
 Sample (adjusted): 1982 2016  
 Included observations: 35 after adjustments  
 Trend assumption: Linear deterministic trend  
 Series: PI GDEF GDP INF MS  
 Lags interval (in first differences): 1 to 1

### Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.774255	114.6296	69.81889	0.0000
At most 1 *	0.560050	62.53730	47.85613	0.0012
At most 2 *	0.529057	33.79898	29.79707	0.0164
At most 3	0.191239	7.443332	15.49471	0.5267
At most 4	0.000415	0.014519	3.841466	0.9039

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

### Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.774255	52.09227	33.87687	0.0001
At most 1 *	0.560050	28.73831	27.58434	0.0354
At most 2 *	0.529057	26.35565	21.13162	0.0084
At most 3	0.191239	7.428813	14.26460	0.4397
At most 4	0.000415	0.014519	3.841466	0.9039

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values



## Appendix 8

Pairwise Granger Causality Tests

Date: 09/15/17 Time: 12:22

Sample: 1980 2016

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
GDEF does not Granger Cause PI	35	4.53875	0.0190
PI does not Granger Cause GDEF		9.61666	0.0006
GDP does not Granger Cause PI	35	0.03039	0.9701
PI does not Granger Cause GDP		5.92061	0.0402
INF does not Granger Cause PI	35	6.21538	0.0807
PI does not Granger Cause INF		2.78958	0.0774
MS does not Granger Cause PI	35	6.34794	0.0050
PI does not Granger Cause MS		16.7630	1.E-05
GDP does not Granger Cause GDEF	35	0.69973	0.5046
GDEF does not Granger Cause GDP		0.46142	0.6348
INF does not Granger Cause GDEF	35	1.23070	0.3064
GDEF does not Granger Cause INF		3.46748	0.0442
MS does not Granger Cause GDEF	35	7.18893	0.0028
GDEF does not Granger Cause MS		9.05953	0.0008
INF does not Granger Cause GDP	35	1.12779	0.3371
GDP does not Granger Cause INF		1.02842	0.3698
MS does not Granger Cause GDP	35	4.54764	0.0584
GDP does not Granger Cause MS		0.47244	0.6280
MS does not Granger Cause INF	35	3.33428	0.0493
INF does not Granger Cause MS		0.41494	0.6641

**Appendix 9**

Dependent Variable: DPI  
 Method: Least Squares  
 Date: 09/15/17 Time: 15:01  
 Sample (adjusted): 1984 2016  
 Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.147340	0.138320	15.52444	0.0308
DPI(-1)	0.442687	0.267301	1.656138	0.1236
DPI(-2)	0.272246	0.480732	0.566315	0.5816
DPI(-3)	0.870554	0.415405	2.095673	0.0580
DGDEF	-0.149327	0.067959	-2.197305	0.0484
DGDEF(-1)	0.187662	0.104890	1.789124	0.0988
DGDEF(-2)	0.132551	0.116550	1.137287	0.2776
DGDEF(-3)	0.022496	0.078817	0.285417	0.7802
DGDP	0.218547	0.159557	1.369709	0.1959
DGDP(-1)	0.091549	0.109226	0.838161	0.4183
DGDP(-2)	0.240604	0.156201	1.540350	0.1494
DGDP(-3)	0.134235	0.167304	0.802340	0.4380
DMS	1.680426	0.789489	2.128499	0.0547
DMS(-1)	0.241786	0.661235	0.365658	0.7210
DMS(-2)	0.233990	0.549784	0.425604	0.6779
DMS(-3)	0.581757	0.401607	1.448574	0.1731
DINF	0.376789	0.313309	1.202609	0.2523
DINF(-1)	-0.639622	0.388282	-1.647312	0.1254
DINF(-2)	0.032174	0.239694	0.134229	0.8954
DINF(-3)	-0.146021	0.170020	-0.858847	0.4073
ECM(-1)	-0.523699	0.738993	-0.708666	0.0501
R-squared	0.593083	Mean dependent var	0.189171	
Adjusted R-squared	0.508511	S.D. dependent var	0.246986	
S.E. of regression	0.257282	Akaike info criterion	0.383840	
Sum squared resid	0.794330	Schwarz criterion	1.336163	
Log likelihood	14.66663	Hannan-Quinn criter.	0.704268	
F-statistic	0.874502	Durbin-Watson stat	2.128462	
Prob(F-statistic)	0.618027			