Fiscal Policy Sustainability and Economic Growth in Nigeria (1980-2015)

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Abstract
The study examined fiscal policy sustainability and economic growth in Nigeria between1980-2015. To achieve this objective, secondary data obtained from Central Bank of Nigeria were used. Descriptive analysis was employed to determine the trends of the variables, and econometrics techniques were employed to investigate the sustainability of the fiscal policy on Nigeria economic growth. Augmented Dickey Fuller and Philips-Perron statistics were used to check whether the variables were stationary. Autoregressive Distributed Lag (ARDL) was used to test long run relationship of variables and examined the sustainability of fiscal policy. Error Correction Model (ECM) was used to examine the impact of fiscal policy on Nigeria economic growth. The results of the study showed that government revenue, government expenditure and fiscal deficit increased tremendously during the period covered. The results of ARDL which further subjected to Wald test revealed that fiscal policy was weakly sustainable in Nigeria during the period 1980-2015with the results of (t-statistic=3.0127, F-statistic = 8.5641, P<0.005 and β-value = 0.8564). In addition, the results showed that there is a long run relationship between fiscal policy and economic growth in Nigeria, and fiscal policy variables have impact on economic growth. Therefore, the study recommended among others that Nigeria government needs to ensure strict compliance with the policies that would increase government revenue and reduce expenditure.

Keywords: *Fiscal Policy, Economic Growth, Sustainability, Fiscal Deficit, Nigeria.*

Introduction

Fiscal policy is the means by which government monitor its revenue and expenditure to control economic activities of a country. It is coordinated policy of government in respect to revenue, expenditure, budget surplus or deficit and public debt with the objective of retaining a stable economy (Afonso, 2000 and Ebimobewei, 2010). Fiscal policy sustainability is essentially a macroeconomic concept which is related to the solvency of government's treasury. This solvency exists when current financial responsibility does not threaten the future expenditure of the government. The fiscal policy is sustained when the implementation of the government policies does not threaten the solvency of country now or in the future. Fiscal policies are said to be sustainable if an economy is able to finance its debts without an unrealistically large future correction to the balance of government revenue and expenditure, resorting to debts repudiation or excessive debt monetization; and that a reasonable level of external shocks is not expected to bring a country into perpetual debts (Kojo, 2010).

While unsustainable fiscal policy will cause increase in public debt over time, reduce financial resources of social amenities and worse poverty conditions of the citizens. Oyeleke (2013) opines that unsustainable fiscal policies will adversely affect the macro- economic performance; retard the smooth operation of private sector; generates economic instability and poor economic growth which could necessitate policy change. Fiscal policy unsustainable has been blamed on economic crises in recent times, high inflation and poor investment that affect economic growth. Budget deficit is the extent to which government expenditure exceeds government revenue that need to be financed by either borrowing internally or externally or through monetization. The accumulated budget deficits over a period of years will lead to debt. Therefore, there is a need to coordinate country's fiscal policy because today's overspending (expenditure more than revenue) will pose a threat for the well-being of future generations.

Nigeria like many other countries in the world has a long profile of fiscal imbalances, in respect to budget deficit. Nigeria recorded budget surplus only in 1995 with budget surplus of ₦0.99 billion, other years during the period 1980 to 2015 recorded budget deficits. The budget deficit moved from ₦1.98 billion in 1980 to ₦22.14 billion in 1990, ₦103.75 billion in year 2000 and ₦1557.78 billion in 2015. The causes of these budget deficits have been traced to factors like: reduction in revenue generation as a result of oil glut in 1975, 1982, 1996 and 2015 and reduction in oil price which is the major source of country revenue; increase in government expenditure as a result of reconciliation, reconstruction and rehabilitation in the mid of 1970's after the civil war that ended in 1970; implementation of Structural Adjustment Programme in the mid 1980's and increase in cost of governance as a result of monetization of fringe benefits of public officers and political office holders (Owolabi, 2011).

In Nigeria, past governments have introduced various economic reforms to change the country fiscal policies either, to change revenue generation or expenditure profile, among such economic reforms introduced are: austerity measure in 1980's, structural adjustment programme 1985, privatization and commercialization of some government parastatals, passage of debt management act 2007, passage of fiscal responsibility act 2007 and public procurement act 2007. All these economic reforms were introduced either to increase revenue or to reduce expenditure. Despite all these economic reforms the country continues to record budget deficit.

Many empirical studies on the Fiscal policy sustainability and economic growth have been examined in literature. However most of these studies (Bohn, 1998; Colingnon, 2012; Semmler & Zhang, 2004) focused on developed economy countries, while only few studies focused on developing economy countries. Most of the few studies (Oshikoya & Tarawalie, 2010; Owolabi, 2011; Kojo, 2010) on developing economy focused on fiscal policy sustainability only. This study therefore differs from most of the previous studies in the following ways: it focused on fiscal policy sustainability and examined the impact of fiscal policy's individual variable on economic growth, this study also used combine variables of fiscal policy rather than single variable used by many studies, for a long period of thirty-six years, 1980 to 2015. Hence, the objectives of this study are to examine the trends of government revenue, government expenditure, budget deficit and economic growth in Nigeria from 1980 to 2015; to investigate fiscal policy sustainability in Nigeria over the period under review and to examine the impact of individual fiscal policy's variable on Nigeria economic growth. Following this introductory section, the rest of this study is

organised as follows: section 2 reviews the conceptual, the theoretical and empirical literature; section 3 describes model specification and methods of data analysis; section 4 contains results and discussions; the last section concludes the study.

Literature Review

Concept Framework

Fiscal policy refers to the means by which government monitor its revenue and adjusts its expenditure to influence the country's economy. It can be defined as the use of income and expenditure instruments or policies to regulate the economic activities in a country. Fiscal policy plays an important role in determining the stability of an economy because it affects the level of income and employment (Semmler & Zhang, 2004). Fiscal policy sustainability is the ability of government to maintain its expenditure and revenue in the long run without threatening of solvency. Collingnon (2012) explained that fiscal policies are sustainable when a nation is able to continue servicing its debt without an unrealistically large future correction to the balance of revenue and expenditure, and/or without resorting to debt excessive, debt monetization, and that a reasonable level of external shocks is not expected to bring a country into debt distress.

Sharma & Jaddy (2009) posited that fiscal policy sustainability occurred when government budget can be smoothly financed without generating explosive increases in public debt over time. Bravo and Silvestre (2002) stressed that a country's fiscal policy is sustainable when its inter-temporal government budget constraint is met, implying that the stock of outstanding public debt is offset by expected future primary surpluses. Some of the objectives of fiscal policy include: to achieve full level of employment; maintain desirable price level; adjust the consumption habits of the citizens and maintain a certain desirable level of consumption; achieve equal distribution of wealth; maintain equilibrium in the balance of payments and achieve desirable level of economic growth and development.

Budget deficit is the difference between government revenue and government expenditure. It is difference between expenditure items and revenue items in country's balance sheet. Budget deficit measures the extent to which government expenditure exceeds government revenue that needs to be financed either by borrowing or through monetization. It also measures the resources needed during a fiscal year after government income has been deducted from total expenditure. Like other countries in the world, Nigeria also recorded budget deficit in most of the years. The country recorded budget surpluses in 1961 to 1969. The oil boom in early 1970's led to increase in revenue generation which brought budget surplus for the period of 1971 to 1974. From 1975 when there was oil glut, which led to the emergence of budget deficit, the trend of budget deficits continued till present moment except 1979 and 1995. Apart from oil glut of 1975, other causes of budget deficits in Nigeria includes: post war programme of reconciliation, reconstruction and rehabilitation in the mid of 1970's; introduction and implementation of Structural Adjustment Programme (SAP) in the mid of 1980's; civil service reform programme which expanded the size of civil servants all over the country and resulted to more recurrent expenditure; increase in cost of governance due to monetization of fringe benefits of public officers and political office holders after the country returned to democratic government in 1999; and upward review of the fringe benefits of civil servants and harmonization of pensions paid to retired public officers.

Theoretical Literature

The following theories and approaches related to fiscal policy were identified in the literature. The Fiscal Theory of the Price Level (FTPL) explained relationship between the trend in the

level of inflation and trends in fiscal variables. This theory is also called Non-Ricardian, where fiscal disequilibrium would be restored by neither government expenditure nor taxes and inflation must adjust to ensure that the inter-temporal budget constraint on fiscal policy is satisfied. The Extrapolation Approach identified the steps to be taken in decomposition of expenditure and revenue on demographic characteristics of the population in a given base year, and combine this with a population forecast to generate paths for future public sector expenditures and revenues.

Accounting approach centre on pre-defined macroeconomic targets in the economy, which include inflation rate, growth rate and interest rate. This approach focuses on debt growth rate to GDP growth rate. Accounting approach also gives attention to steady-states and assumes that budget deficit (or surplus) that leads to unchanging Debt/GDP ratios over time is sustainable. This approach has been used to assess the consistency among various macroeconomic policy targets of which they are conceived to be sustainable. For sustainability of the policy that sets the targets to hold, the left hand side must be equal to right hand side of balance sheet. The Present Value Constraint Econometric Approach used to analyse fiscal sustainability which includes econometric test of the government budget constraint or the Non-Ponzi Game for a set of data on government expenditure, revenue, deficits and/or debt. Deficit is sustainable if and only if the stock of debt held by the government is expected to growth not faster than the average real rate of interest, which is viewed as a proxy for the growth rate of the economy (Jibao, Schoeman & Naraidoo, 2012).

Review of Empirical Studies

There are many studies on fiscal policy some of them were conducted to establish the sustainability or otherwise in different countries, using different methodologies. In the context of United States, Bohn (1998) examined the response of budget surplus to changes in the debt-income ratio. He concluded that positive response of surpluses to the Debt/GDP ratio can be interpreted as a new test for sustainability of U.S fiscal policy. He also established that U.S. fiscal policy has been strongly sustained during the sampled period 1916-1995. Fiscal policy sustainability in 15 European Union Countries was studied by Afonso (2000). The study conducted stationary test on public data, after which cointegration tests were done to validate the necessary and sufficient conditions of sustainability. The results of the study showed that fiscal policies were not sustained in most of the European countries with the exceptions of Germany, Netherlands, United Kingdom, Spain and Austria.

Bravo & Silvestre (2002) examined sustainability of fiscal policies in 11 European Union member countries for the period 1960 to 2000. They used cointegration technique to test sustainability of fiscal policies, the results of their study showed that fiscal policies were sustainable in Austria, France, Germany, United Kingdom and Netherlands but not sustainable in Denmark, Ireland, Portugal, Italy and Finland. Polio & Wickens (2005) investigated fiscal policy stances in United States, United Kingdom and Germany for the period of 1970 to 2005, using Vector Auto Regression (VAR) analysis. Their findings showed that fiscal policies were sustainable in the three countries.

Oshikoya & Tarawalie (2010) used the present value budget constraint to analysis the sustainability of fiscal policy in West African Monetary Zone (WAMZ) countries. The empirical results of the study showed that fiscal policies were weakly sustainable in all the countries except Sierra Leone whose fiscal policy was found to be unsustainable. The Granger causality results indicated a unidirectional causality from revenue to expenditure for Gambia, Guinea and Sierra Leone, while bi-directional causality was established for Nigeria

and Ghana. Ebimobewei (2010) evaluated the effect of fiscal policy on the economic growth in Nigeria for the period 1991 to 2005. The author employed Ordinary Least Squared (OLS) method of estimation, the results of OLS showed that there existed a significant relationship between fiscal policy variables and gross domestic product. There was no significant relationship between the specific explanatory variables and gross domestic product.

Ogbole, Amadi and Essi (2011) investigated the existence of relationship between fiscal policy and economic growth in Nigeria for the period of 1970 to 2006. They employed Johansen's cointegration test and Granger causality test. The results of their study showed that there exists a causal relationship between the fiscal policy and economic growth and a unidirectional causality running from fiscal policy variables to economic growth variable. Jingwen (2011) examined the United Kingdom fiscal policy with an inter-temporal budget constraint for a long period of 1955 to 2006. The study results found evidence of sustainability with three structural breaks and concluded that UK fiscal policy has been sustainable.

Medee and Nenbee (2011) used Vector Auto Regression (VAR) and Error Correction Model (ECM) to examine impact of fiscal policy variables on Nigeria's economic growth for the period 1970 to 2009. The results of the study revealed that there is a long run equilibrium relationship between economic growth and fiscal policy variables in Nigeria. Ezeabasili, Tsegba & Ezi-Herbert (2012) investigated relationship between fiscal deficits and economic growth within Nigeria context, for the period of 1970 to 2006. They adopted a modeling technique that incorporates cointegration and structural analysis. They found that fiscal deficit affected economic growth negatively, with an adjustment lag in the system and also found a strong negative relationship between government expenditure and economic growth.

Collignon (2012) examined fiscal policy and sustainability of public debt in Europe for the period of 1978 to 2009. The study results revealed that European public debts were sustainable. Oyeleke (2013) investigated fiscal policy sustainability in three West African Monetary Zone (WAMZ) countries for the period of 1980 to 2010. The study employed econometric techniques to investigate the sustainability of fiscal policy. The findings revealed that fiscal policy was weakly sustainable in those countries and the speed of adjustment of government revenue to government expenditure was relatively high in Nigeria compared to Ghana and Guinea.

Methodology

This study examined fiscal policy sustainability and investigated the impact of fiscal policy variables on economic growth. The study employed annual time series data on government revenue, government expenditure, budget deficit and gross domestic product obtained from Central Bank of Nigeria statistical bulletins and annual reports, for the period of 1980 to 2015. In line with previous empirical studies like studies of Bravo & Silvestre (2002) Ogbole, Amadi & Essi (2011) and Oyeleke (2013), we used government revenue, government expenditure and budget deficit to capture fiscal policy, while gross domestic product was used to measure economic growth. The government revenue is the sum of monies received from all sources of revenue including oil revenue and non-oil revenue. The government expenditure involves public spending on consumption and capital formation including subsidies, grants and interest payments on debts. Budget deficit or fiscal deficit is measured the difference between government revenue and government expenditure, however, financed by borrowing.

Model Specification

Following the studies of Afonso (2000), Polito & Wickens (2005) and Jingwen (2011), economic growth (Y) can be expressed as a function of fiscal policy (X). This can be expressed in equation form as:

$Y = f(X)$……..……(1)

Expand the equation 1 to accommodate economic growth variable and fiscal policy variables, then, becomes equation 2.

$RGDP = f(GREV, GEXP, BDEF)$…….……..……..(2)

The relationship between the economic growth variable and fiscal policy variables can be expressed as:

$RGDP = \alpha_0 + \beta_1(GREV) + \beta_2(GEXP) + \beta_3(BDEF) + \varepsilon_t$……...…….……(3)

To determine sustainability of fiscal policy use regression model;

$GREV = \alpha_0 + \beta_1 GEXP + \varepsilon t$……..…….……....(4)

Then calculate the linear restriction β, If β is more than 1 the fiscal policy is strongly sustainable, if β value is less than 1 it means the fiscal policy is weakly sustainable, and if β is equal to 0 fiscal policy is not sustainable.

When equation (3) above express in Error Correction Model, becomes:

$\Delta RGDP = \alpha_0 + \beta_1(GREV) + \beta_2(GEXP) + \beta_3(BDEF) + ECM(-1) + \varepsilon_t$…….……..…...(5)

Where :

RGDP = Real Gross Domestic Product.

GREV = Government Revenue.

GEXP = Government Expenditure.

BDEF = Budget Deficit.

α = The intercept which shows the degree of X NFdrift in the parameters.

β = The slop of the equation that shows the extent to which changes in independent variables affects dependent variable.

ε_t = Error Term.

Methods of Data Analysis

The study adopted both descriptive and econometric techniques to achieve the objectives of the study. The trend analysis was carried out by using table and graph to describe the trends of government revenue, government expenditure, budget deficit and gross domestic product. Augmented Dickey-Fuller (ADF) and Phillip-Perror (PP) Statistics were used to test the stationarity or otherwise of the variables employed and their order of integration. Autoregressive Distributed Lag was used to determine whether or not there is long run relationship among the variables. Error Correction Model was used to examine the impact of fiscal policy variables on economic growth variable. The Error Correction Model generated Error Correction Terms (ECTs) which was negative and statistically significant, further confirmed the existence of long run cointegration relationship between fiscal policy and economic growth and showed the impact of individual variable of fiscal policy on economic growth variable.

Results and Discussions

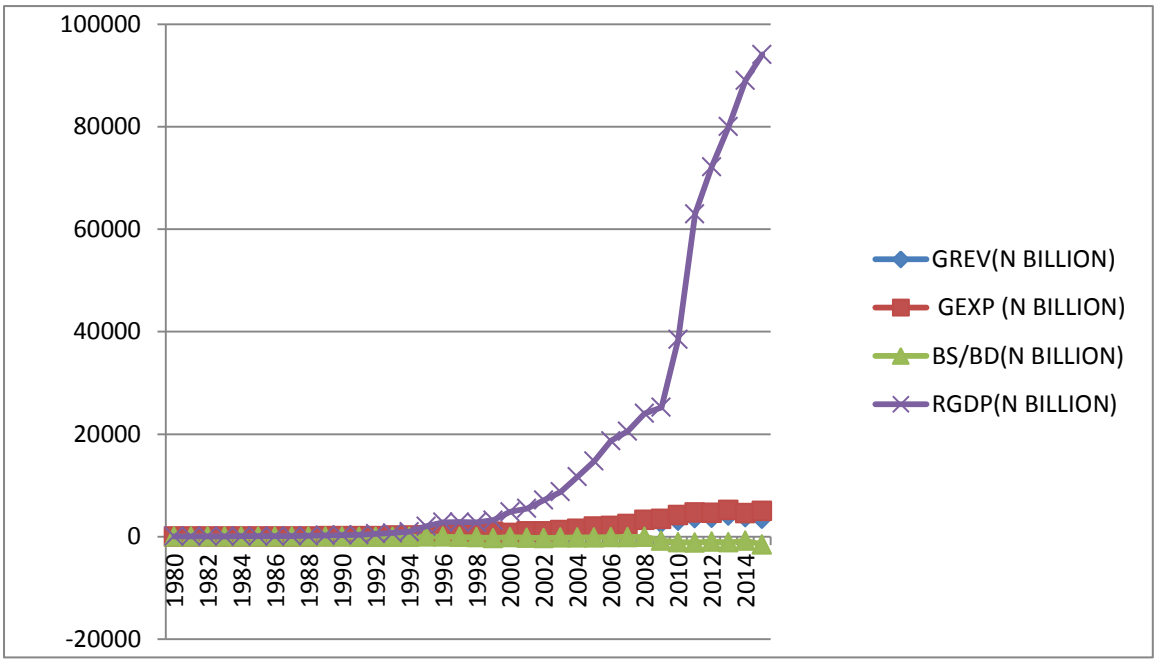
The analysis of this study begins with descriptive analysis. Table 1 and figure 1 below present trend of variables used in this study.

Table 1 Trends of Government Revenue, Government Expenditure, Budget Deficit and Real Gross Domestic Product

Year	GREV (₦'Billion)	GEXP (₦'Billion)	BS/BD (₦'Billion)	RGDP (₦'Billion)
1980	12.99	14.97	-1.98	49.62
1981	7.51	11.41	-3.9	51.71
1982	5.82	11.92	-6.1	53.69
1983	6.27	9.64	-3.37	57.95
1984	7.27	9.93	-2.66	64.34
1985	10.01	13.04	-3.03	73.6
1986	7.97	16.22	-8.25	75.54
1987	16.13	22.02	-5.89	111.94
1988	15.59	27.75	-12.16	147.91
1989	25.89	41.03	-15.14	228.5
1990	38.15	60.29	-22.14	281.55
1991	30.83	66.54	-35.71	329.03
1992	53.26	92.8	-39.54	555.37
1993	126.07	191.23	-65.16	715.08
1994	90.62	160.89	-70.27	945.93
1995	249.76	248.77	0.99	2007.72
1996	325.14	337.2	-12.06	2798.11
1997	351.26	428.22	-76.96	2835.01
1998	353.74	487.11	-133.37	2765.67
1999	662.59	947.69	-285.1	3193.65
2000	597.28	701.06	-103.78	4842.19
2001	796.97	1018.03	-221.06	5488.01
2002	716.75	1018.16	-301.41	7124.75
2003	1023.24	1225.06	-201.82	8745.64
2004	1331.6	1504.2	-172.6	11673.6
2005	1758.3	1919.72	-161.42	14735.3
2006	1937.2	2038.01	-100.81	18709.6
2007	2333.7	2450.9	-117.2	20583.63
2008	3193.4	3240.81	-47.41	24048.53
2009	2642.98	3452.98	-810	25243.36
2010	3089.18	4194.57	-1105.39	38477.46
2011	3553.54	4712.06	-1158.52	63005.77
2012	3629.65	4605.41	-975.66	72199.21
2013	4031.83	5185.32	-1153.49	80092.24
2014	3751.72	4587.4	-835.68	89043.62
2015	3431.14	4988.92	-1557.78	94144.96

Source: Central Bank of Nigeria Statistical Bulletins and Annual Report Various Issues

Figure 1: Growth Rate of Government Revenue, Government Expenditure, Budget Deficit and Real Gross Domestic Product.



Source: Authors' Computation

The table 1 and figure 1 revealed that government revenue increases gradually from 1980 to 2015, the revenue moved from ₦12.99 billion in 1980 to ₦38.15 billion in 1990, ₦597.28 billion in year 2000 and ₦3,431.14 billion in 2015 with averaged value of ₦1117.09 billion for the period 1980 to 2015. Likewise, government expenditure also recorded upward trend, by increased from ₦14.97 billion in 1980 to ₦60.29 billion in 1990 and ₦4988.92 billion in 2015, and with averaged value of ₦1390.04 billion for the period covered by the study. Budget deficit recorded in all the years except 1995, when the country recorded budget surplus of ₦0.99 billion. The real gross domestic product (RGDP) increased from ₦49.62 billion in 1980 to ₦281.55 billion in 1990, moved to ₦4842.19 billion in year 2000 and ₦94,144.96 billion in 2015. The averaged RGDP during the period 1980 to 2015 was ₦16, 541.66 billion.

Table 2 Statistical Analysis of Government Revenue, Government Expenditure, Budget Deficit and Real Gross Domestic Product (RGDP)

	Government Revenue (₦' Billion)	Government Expenditure (₦' Billion)	Budget Deficit (₦' Billion)	Real Gross Domestic Product (₦' Billion)
Mean	1117.09	1390.04	-272.94	16541.66
Medium	352.50	457.67	-73.62	2816.56
Maximum	4031.83	5185.32	0.99	94144.96
Minimum	5.822	9.64	-1557.78	49.62
Standard Deviation	1385.75	1760.25	425.52	27559.02
Probability	0.0473	0.0287	0.000053	0.000004
Observation	36	36	36	36

Source: Authors' Computation

Table 2 showed that all the variables displayed a high level of consistency as their mean and medium values were clearly within the minimum and maximum values of these series. However, the relatively low standard deviation for the series indicates that the deviations of the actual data from their mean values were very small. The probability values are statistically appealing.

Table 3: Correlation Analysis of the Variables

	GREV	GEXP	BDEF	RGDP
GREV	1.0000	-	-	
GEXP	0.9916	1.000	-	
BDEF	-0.8862	-0.8753	1.000	-
RGDP	0.8969	0.9248	-0.8374	1.0000

Source: Authors' Computation

Table 3 indicated that Government Revenue (GREV) and Government Expenditure (GEXP) were positively correlated to Real Gross Domestic Product (RGDP), while Budget Deficit (BDEF) was negatively correlated to the Real Gross Domestic Product (RGDP).

Table 4 Stationary Test (Augmented Dickey Fuller (ADF) and Phillip Perron Tests (PP)

Variable	Model Specification	Augmented Dickey-Fuller (ADF) Test		Phillip-Perron (PP) Test		Order of Integration	
		Level	First diff	Level	First Diff		First Diff
GREV	Intercept	-2.6514	-3.054***	-4.973**	-6.731***	I(1)	-6.731**
	Tend and intercept	-2.236	-3.446***	-5.169**	-6.643***	I(1)	-6.643**
GEXP	Intercept	-2.214	-3.172***	-2.307	-8.166***	I(1)	-8.166***
	Trend and intercept	-1.674	-4.031***	-3.517**	-7.913***	I(1)	-7.913***
BDEF	Intercept	-2.516	-6.142***	-8.121**	-10.847***	I(1)	-10.847***
	Trend and intercept	-3.437**	-8.035***	-8.513**	-10.378***	I(0)	-10.378**
RGDP	Intercept	-5.391***	-9.692***	-5.672***	-12.301***	I(0)	-12.301***
	Trend and intercept	-5.936***	-9.154***	-5.863***	-12.173***	I(0)	-12.174***

Note *** and ** indicate rejection of the null hypothesis of non-stationary at 1% and 5% significant level based on the Mackinnon critical values.

Source: Authors' Computation

Table 4, showed the stationary test, which used to determine the order of integration of the variables used for this study. Two stationary tests were employed the Augmented Dickey-Fuller (ADF) and the Phillip-Perron (PP) statistics tests. The results indicated that all variables were not integrated in the same order. Real Gross Domestic Product (RGDP) was

stationary at level in both the ADF and PP statistics test, others variables were stationary at the first difference, and then first difference of all variables was then applied. This showed that all the variables were integrated order 1 at 5% and 1%, and then the Autoregressive Distributed Lag (ARDL) method was used to find out the long run relationship among the variables.

Cointegration Analysis

The cointegration test showed whether or not there is long run relationship among the variables. Table 5 below showed the results of ARDL which further subjected to Wald test.

Table 5: Cointegration Test (Autoregressive Distributed Lag (ARDL)–Wald Test

Test Statistic	Value	Lag	Probability	Level	Bound Critical Value	
					Level I(0)	First diff I(1)
F-Statistic	4.9081	2	0.0036	1%	4.324	5.642
Chi-square	14.3142	-	0.0017	5%	3.116	4.094

Source: Authors' Computation

Since sample size of this study was 36, a lag length of 2 was used in the ARDL further subjected to Wald test in table 5. The calculated F-statistic of 4.9081 was greater than upper critical bound value of 4.094 at the 5% significance level. This suggested that there was a long run relationship between the fiscal policy variables and economic growth variable. To determine whether there exists strong or weak sustainability of fiscal policy in Nigeria's economy during the period 1980 to 2015, we employed Lusinyan and Thornton (2009) study that submitted that the slop coefficient of β in OLS regression will determine the sustainability of fiscal policy. The two variables of fiscal policy were used that is government revenue and government expenditure to test the sustainability. We employed Wald test coefficient of restriction. Table 6 below showed the results:

Table 6: Wald Test coefficient Restriction

Equation	Co-efficient (β – value)	F-statistic	t-statistic	Probability
Δ(GREV) = fΔ(GEXP)	0.8564	8.5641	3.0127	0.0013

Source: Authors' Computation

The results from table 6 showed that t-statistic value was 3.0127, F-statistic value was 8.5641 and probability value of 0.0013. These values showed that the fiscal policy was sustained during the period covered by the study. The coefficient (β) value of 0.8564 which less than 1 indicated that Nigeria's fiscal policy was weakly sustainable. This finding is at variance with the results of Owolabi (2011) that found that Nigeria's fiscal policy was strongly sustainable.

Error Correction Model

Error Correction Model (ECM) was used to examine the impact of fiscal policy variables on economic growth variable. The choice of ECM based on the fact that it capable of estimating both short and long run effects of the explanatory variables on the explained variable.

Table 7 Error Correction Model (Dependent Variable ΔRGDP)

Variable	Co-efficient	Std Error	t-statistic	Probability
C	0.1685	0.5792	-0.4176	0.0193
ΔGREV	0.3912	0.0698	8.0693	0.0027
ΔGEXP	0.4645	0.0753	9.0753	0.0016
ΔBDEF	-0.3710	0.3136	-4.8312	0.1028
ECT(-1)	-0.9862	0.1742	-6.3748	0.0000

R-squared =0.8732 F – Statistic = 52.0274
Adjusted R- square = 0.8136 Prob.(F-Statistic) = 0.0000
Dubin – Waston = 2.1386 S.E of Regression = 2.5816

Source: Authors' Computation

From table 7, the Durbin-Waston statistic was 2.1386 which were higher than 2, which prove that autocorrelation problem does not exist. The F- statistic that test overall significance of the variables was relatively high (52.0274) which provide a good fit for the estimate model. The coefficient of determination (R-square) of 0.8732 indicated that all the explanatory variables explained more than 87% of explained variation in explained variable. The computed coefficient of the Error Correction Terms (ECTs) showed the conventional negative figure of -0.9862 with probability of 0.0000, which significant at 1% further confirmed the long run cointegration relationship between fiscal policy variables and economic growth variable. It also showed that fiscal policy has impact on economic growth. The table 7 showed impact of individual fiscal policy variable on economic growth variable. The government revenue has positive impact on real gross domestic product (0.3912) and it is statistically significant at 1% (0.0027). Similarly, the government expenditure has positive impact on gross domestic product (0.4645) with probability of 0.0016, which is statistically significant at 1%. Unlike the two other variables, the budget deficit has negative impact on gross domestic product (-0.3710) with probability of 0.1028 which is higher than 0.05, negative impact and insignificant.

Conclusion

Nigeria recorded budget deficit in most of the years in the period 1980 to 2015, apart from 1995 that recorded budget surplus. This imbalance in fiscal operations traced to many factors, among them are: oil glut in oil market which led to decrease in oil price and decrease in revenue and increase in cost of governance due to monetization of fringe benefits of public officers and political office holders. The trends analysis of government revenue, government expenditure, budget deficit/surplus and real gross domestic product showed that all the variables continue to increase. Despite the growth recorded in gross domestic product, government revenue fell short of government expenditure which led to budget deficit in almost all the years covered by this study.

On sustainability of fiscal policy over the period covered by the study, the results of stationary tests showed that the four variables of interest were integrated of order 1 after the first difference. The Autoregressive Distributed Lag (ARDL) cointegration test results indicated that there was a long run relationship between the fiscal policy variables and economic growth variable. While Wald test co-efficient restriction results showed coefficient β of 0.8564 at 1% level of significance, since β value is less than 1, it indicated that Nigeria's

fiscal policy was weakly sustainable. This result supported the findings of Oshikoya & Tarawalie (2010) and Oyeleke (2012).

Furthermore, the coefficient of Error Correction Terms (ECTs) which was negative figure of -0.9862 and statistically significant at 1% further confirmed the existence of long run relationship between fiscal policy variables and economic growth variable. It also showed that government revenue and government expenditure has positive impact on economic growth, while budget deficit has negative impact on economic growth.

Recommendations

Based on the findings of this study the following recommendations were suggested:

►Nigeria government needs to ensure strict compliance with the policies that would increase government revenue and reduce expenditure, and ensure that other sources of revenue apart from oil are fully utilized and reduced expenditure by cut salaries and fringe benefits of public officers and political office holders.

►New policies that will increase revenue and reduce expenditure need to be introduced, this will reduce budget deficit and sustain country fiscal policy.

References

Afonso, A. (2000). Fiscal Policy Sustainability: Some Unpleasant European Evidence, *IESG Working Papers,* Department of Economics, Technical University of Lisbon.

Bohn, H. (1998). The Behaviour of United States Public Debt and Deficits, *Quarterly Journal of Economics,* 112(2), 949-963.

Bravo, A.S & Silvestre, A.L (2002). Intertemporal Sustainability of Fiscal Policies Some Texts for European Countries, *European Journal of Political Economy,* 18(3), 517-528.

Central Bank of Nigeria (1999). *Annual Report and Financial Statement.*

Central Bank of Nigeria (2004). *Annual Report and Financial Statement.*

Central Bank of Nigeria (2008). *Annual Report and Financial Statement.*

Central Bank of Nigeria (2009). *Statistical Bulletin, Vol. 20.*

Central Bank of Nigeria (2012). *Annual Report and Financial Statement.*

Central Bank of Nigeria (2013). *Statistical Bulletin, Vol. 20.*

Central Bank of Nigeria (2015). *Annual Report and Financial Statement.*

Collingnon, S. (2012). Fiscal Policy Rules and the Sustainability of Public Debt in Europe, *Journal of International Economic Review,* 53(1), 539-567.

Ebimobewei, A. (2010). The Relationship Between Fiscal and Economic Growth in Nigeria, International Journal of Economic Development, *International Journal of Economic Development, Research and Investment,* 1(2 & 3), 37-47.

Ezeabasili, V. Tsegba, I. & Ezi-Herbert, W. (2012). Economic Growth and Fiscal Deficits: Empirical Evidence from Nigeria, *Journal of Economic and Finance,* 2(6), 85-96.

Jibao. S. Schoeman, N. & Naraidon, J. (2012), Fiscal Regime Changes and the Sustainability of Fiscal Imbalance in South Africa: A Smooth Transition Error Correction Approach, *South Africa Journal of Economics,* 15(2), 112-127.

Jingwen, F (2011). Fiscal Policy Sustainability and Inflation in the United Kingdom: An Empirical investigation, A Ph.D Thesis Submitted to the Cardiff Business School, Cardiff University, England.

Kojo, N.C (2010). Diamonds Are Not Forever: Botswana Medium-Term Fiscal Sustainability, *World Bank Policy Research Working Paper.*

Lusinyan, P. & Thormton, A. (2009). The Sustainability of South African Fiscal Policy: Historical Perspective, *Journal of Applied Economics,* 41(7), 859-868.

Medee, P.N. & Nenbee, S.G (2011). Econometric Analysis of the Impact of Fiscal Policy Variables on Nigeria's Economic Growth, *International Journals of Economic Development, Research and Investment,* 2(1), 171-183.

Ogbole O., Amadi, S. & Essi, I. (2011). Fiscal Policy and Economic Growth in Nigeria: A Granger Causality Analysis, *American Journal of Social and Management Sciences,* 2(4), 356-359.

Oshikaya, T. & Tarawalie, A. (2010). Sustainability of Fiscal Policy: The West African Monetary Zone (WAMZ) Experience, *Journal of Monetary and Economic Integration,* 9(2), 1-29..

Owolabi, S.I (2011). Economic Analysis of Current Account Sustainability in Selected ECOWAS Countries, *Journal of Management Sciences,* 3(2) 56-72.

Oyeleke, O. J (2013). Analysis of Fiscal Policy Sustainability in West African Monetary Zone: An M.Sc. Thesis Submitted to the Department of Economic Faculty of Social Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria.

Polito, V & Wickens, M (2005). Testing for a Unit Root in Time Series Regression, *International Journal of Finance and Economics,* 62(3), 143-156.

Semmler, W. & Zhang, W. (2004). Monetary and Fiscal Policy Interactions in Euro Area, *International Journal of Monetary Economics,* 47(1), 19-30.

Sharmma, T. & Jaddy, M (2008). Is the Budget Deficit Sustainable When Fiscal Policy is Non-Linear?, The Case of Span, *Journal of Macroeconomics,* 27(3), 596-608.