

# **FISCAL POLICY AND ECONOMIC GROWTH IN NIGERIA**

**Adeyemi Babatope Ayodeji**

Department of Economics, Olabisi Onabanjo University, Ago-Iwoye, Nigeria

E-mail: topmostay@yahoo.com

**Awogbade Adefisayo**

Department of Accounting, Caleb University, Imota, Lagos, Nigeria

E-mail: awogbade01@gmail.com

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## **ABSTRACT**

The study examined the effect of fiscal policy on economic growth in Nigeria from 1986 to 2020. Some econometric tools were employed to explore the relationship between these variables. Fiscal policy was a proxy by total public expenditure, external debt, external reserve, and tax revenue while economic growth was a proxy with Real GDP. The study examines stochastic characteristics of each time series by testing their unit root using Augmented Dickey Fuller (ADF) test. A bound test was employed for the Co-integration(s) was done to exact the long run relationship among the variables of interest. Also, the Autoregressive Distributed Lag Model (ADL) was used to provide complementary information on the dynamic behaviour of the variables in the system and the lost information of the adjusted period to equilibrium. Then, the effect of fiscal policy on economic growth was ascertained using the long run coefficient of Autoregressive Distributed Lag Model. The findings of the analysis show that while Tax revenue, External Debts stock, and External Reserves exact an inverse effect on economic growth, Public Expenditure exact a positive and significant effect on economic growth in Nigeria. The T-statistics show that only external reserve is not statistically significant to explain the economic growth in Nigeria as the P-value of 0.0913 is more than 0.05. The study concluded that fiscal policy has a significant effect on economic growth in Nigeria. The study recommended that government should endeavour to reduce their borrowing from international institutions or bodies by looking inward for other means of financing the government expenditure, this will reduce the proportion of revenue set aside for debt servicing. More so, the government should allocate effectively resources for development such as education, health, and infrastructural sectors of the economy.

**Keywords:** Economic Growth, External Debt Stock, External Reserve, Fiscal Policy, Public Expenditure.

**JEL Classification:** O40, E62, O55

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## 1.0. INTRODUCTION

Fiscal policy is how a government adjusts its level of spending to monitor (Rena, 2006) and influence a nation's economy usually it is deployed along with the monetary policy instruments of government by the central bank to influence the money supply in a nation. These two policies are used to achieve macroeconomic goals in a nation (Campos & Pradhan, 1996). These goals include price stability, full employment, reduction of poverty levels, high and sustainable economic growth, a favorable balance of payment, and reduction in a nation's debt. A nation cannot achieve macroeconomic stability without fiscal policy. Fiscal policy is required for economic growth and stabilization. It can be used to control the production and consumption of particular goods, services, and products. The government increases aggregate demand by stabilizing taxes and increasing expenditure. It also boosts demand through tax cuts and increased transfer payments. These measures increase average household incomes and encourage consumer spending. In addition to regulating the demand side of the economy, fiscal policy influences aggregate output and employment by raising the level of infrastructure spending. As an instrument for stabilizing fluctuations in economic activity, fiscal policy can reflect discretionary actions by the government or the influence of 'automatic stabilizers' A fiscal stimulus package is an example of discretionary action by the government intended to support aggregate demand by increasing public spending and/or cutting taxes.

The Nigerian economy has been plagued with several challenges over the years. Researchers have identified some of these challenges as gross mismanagement/misappropriation of public funds, corruption and ineffective economic policies, lack of integration of macroeconomic plans, and the absence of harmonization and coordination of fiscal policies as well as inappropriate and ineffective policies. Imprudent public spending and weak sectorial linkages and other socioeconomic maladies constitute the bane of rapid economic growth and development (Amadi, 2006). Thereafter, it started rising again and reached N5,241,667 million in 2010. The expenditure pattern of Nigeria has been on the increase. In 2000, the total expenditure was N701,059 million. It has increased steadily, and in 2010, it was N4,199,429 million. Generally, an increase in expenditure should lead to a reduced unemployment rate but in Nigeria, the reverse is the case As total expenditure increases, the rate of unemployment increases. This is because a greater percentage of the total expenditure is channeled to recurrent expenditure, and the proportion is worsening. In 2000, the percentage of the total expenditure spent on recurrent was 66% and increased to 79% in 2010. The implication is that the unemployment rate soars because less percentage of the total expenditure is spent on the capital project which creates jobs in an economy.

Nigeria has for a long period implemented a deficit fiscal policy. The country's successive fiscal policy has in most cases recorded deficits (Eze & Nwambeke, 2015). Although it should be noted that at times deficit financing is deliberately undertaken by any government, to stimulate economic activities in the country which it controls, establish more industries to absorb those who are unemployed, provide more social amenities to the people, and in fact, improve the general well-being of the populace but in Nigeria, the reverse occurs. This contributes immensely to worsening the socioeconomic problems in Nigeria. Such problems include low per capita income (PCI), high rate of inflation, low Gross Domestic Product (GDP), high level of poverty, low level of saving and investment, high level of unemployment, high level of income inequality, adverse balance of payments, low standard of living, etc.

## **2.0. LITERATURE REVIEW**

### **2.1. Conceptual Review**

Researchers have written on different aspects of fiscal policy especially as it relates to and affects the macroeconomics of the economy. Fiscal policy is defined as how a government adjusts its levels of spending to monitor and influence a nation's economy (Reem, 2009). The fiscal policy operates through changes in the level and composition of government spending, the level and types of taxes levied, and the level and form of government borrowing. Governments can directly influence economic activity through recurrent and capital expenditure, and indirectly, through the effects of spending, taxes, and transfers on private consumption, investment, and net exports. The policy is used along with monetary policy in different combinations to direct a country's goals. According to Reem (2009), fiscal policy is based on the theories of British economist John Maynard Keynes whose theory states that governments can influence macroeconomic productivity levels by increasing or decreasing tax levels and public spending. This influence, in turn, curbs inflation, increases employment and maintains a healthy value of money.

### **2.2. Theoretical Review: Keynesian Theory**

This theory was based on the work of British economist John Maynard Keynes (1936). The question of whether an expansionary fiscal policy will help to raise industrial output forms the basis of the Keynesian model. In general, whether an increase in government expenditure will lead to an increase in output. Nevertheless, for many years, and to some extent and even now, there is the view that Keynesians ascribe that only fiscal policy can affect income and output. It turns out, therefore, that in certain special cases fiscal policy works. The accounts of Keynesian theory concentrate on the liquidity trap as the extreme Keynesian special case. The important implication of the liquidity trap is that once the rate of interest has fallen to the level at which the liquidity trap occurs, an increase in the money supply will not reduce the interest rate any further. Therefore, if the level of investment, which could occur at this minimum rate of interest, is still not great enough to provide expenditure equal to full employment output, then monetary policy will not be able to increase investment and thereby restore full employment and income by this route.

However, in a liquidity trap, an increase in government expenditure will still increase output. As long as the economy remains in a liquidity trap, an increase in government expenditure will have the full effect on income predicted by the multiplier, because interest rates do not rise at all and there is no crowding out of the private investment to offset any of the effects of the increase in government expenditure. Hence, this becomes the basis for supporting the fiscal action of the government to boost output. On the other hand, those who accuse Keynesians believe that only fiscal policy can work and that monetary policy cannot, then point out the extreme unlikelihood of a liquidity trap, and the lack of evidence that it has ever occurred.

### **2.3. Empirical Review**

Many studies of the relationship between fiscal policy and growth were conducted before the relevant endogenous growth models were developed, i.e. from the early 1980s. For example, Landau (1983) using cross-sectional data from 104 countries found a negative relationship between public consumption as a share of GDP and growth per capita using Summers-Heston data, while Kormendi & Meguire (1985) used cross-section/time series data for 47 countries found no statistically significant relation of the same variables for the post-World War II period. Barro (1991), with data from 98 countries in the post-World War II period, found that

government consumption decreases per capita growth, while public investment does not affect growth.

Levine & Renelt (1992) found that most results from earlier studies on the relationship between long-run growth and fiscal policy indicators are fragile to small changes in the conditioning set. In the next generation of studies, Halkos and Paizanos (2015) (ER from now on) used cross-section data for 100 countries from 1970-1988 and panel data for 28 countries from 1870-1988. They found that public transportation, communication, and educational investment are positively correlated with growth per capita and aggregate public investment is negatively 1 correlated with growth per capita, although they admitted that many fiscal policy variables are highly correlated with initial income levels and fiscal variables are potentially endogenous. Cashin (1995) estimated a positive relationship between government transfers, public investment, and growth and a negative one between distortionary taxes and growth from panel data for 23 developed countries between 1971 and 1988.

Devarajan (1996) showed that public current expenditures increase growth, whilst government capital spending decreases growth in 43 developing countries 5 over 1970-1990. Kneller, *et al.* (1999, 2001) showed that the biases related to the incomplete specification of the government budget constraint present in previous studies (see section 2 above) are significant and after taking them into account, they found for a panel of 22 OECD countries for 1970-1995 that: (1) distortionary taxation hampers growth, while non-distortionary taxes do not; (2) productive government expenditure increases growth, while non-productive expenditure does not; (3) long-run effects of fiscal policy are not fully captured by five-year averages commonly used in empirical studies. Poot (2000) in a survey of published articles from 1983-1998 did not find conclusive evidence for the relationship between government consumption and growth, while he found empirical support for the negative effect of taxes on growth. Also, he reported a positive link between growth and education spending, while the evidence on the negative growth impact of defense spending is moderately strong.

Finally, Poot presented evidence of a robust positive association between infrastructure spending and growth. Easterly (2005) found a significant growth effect on budget balance, which disappeared when extreme observations were excluded from the analysis. It, therefore, seems that there is widespread non-robustness of coefficient signs and statistical significance even within similar specifications for similar variables. There are some possible explanations for these differences. The most important, in our opinion, is the absence of a generally accepted theoretical framework to guide empirical research (Galor, 2005). This framework would pin down the most important determinants of growth, being fiscal policy variables or not. If such a framework were available, we could test the statistical significance of the postulated fiscal and non-fiscal determinants of growth and avoid the omitted variable bias that empirical results possibly suffer. Another issue is the inappropriate classification of some expenditure types as productive/unproductive, a question over which there is some debate in theoretical literature (Appah, 2010).

Another problem of most empirical studies of growth and fiscal policy concerns the misspecification of the growth equation in relation to the government budget constraint (for details refer to Section 2 of the paper). Oke (2013) investigated the budget implementation and economic growth in Nigeria. The econometric model of ordinary least square (OLS) regression test was employed for analysis and time series data spanning from 1993 to 2010. The dependent variable was proxied by gross domestic product, while the independent variables were public total expenditure, public recurrent expenditure, public capital expenditure, and external debt. The results revealed that budget implementation has a positive effect impact on Nigeria's

economic growth. The results further showed a positive relationship between GDP and public total expenditure, public recurrent expenditure, public capital expenditure, and external debt, while public capital expenditure shows a negative relationship to GDP. The study recommends that government should enact an enabling law that will ensure the workability of its budgets according to plans and increase the proportion of capital expenditure to recurrent expenditure so that the budget can have growth and development inducement among others.

In addition, existing empirical studies on fiscal policy and growth differ in terms of countries included in the sample, period/method of estimation, and measures of public sector activity. Data quality is also a problem since, for example, various countries have different conventions for the measurement of public sector size and there are limited data at the required level of disaggregation, implying measurement errors. Also, the dynamic effects of fiscal policy are either ignored completely or not modeled carefully in existing empirical work, i.e. not sufficient attention is paid to distinguishing the transitional from the long-run effects of fiscal policy. Moreover, even if there is a correlation between explanatory variables and the rate of growth, the direction of causation is not clear (Wagner's law). Besides these, there might be a correlation between fiscal variables with initial GDP (Easterly & Rebello, 1993). Furthermore, the linear structure imposed on most empirical models is convenient but not necessarily realistic and consistent with the underlying theory (Halkos & Paizanos 2015).

In addition, examination of the sample searching for outliers as well as testing for parameter heterogeneity is not conducted in most studies. Other potential problems include serial correlation in the error terms. In our work, we take some of the above problems into account and refine existing research, disaggregating government spending and revenue, searching for evidence that is robust to changes in specification and estimation methods Osuala and Jone (2014) in their "Empirical Analysis of the impact of Fiscal Policy on Economic Growth of Nigeria" found that about 68.5% of the total variation in the real gross domestic product was as a result of variation in the independent variables namely: Federal government non-oil taxes; federal government recurrent expenditure; federal government capital expenditure and federal government total debt defined as domestic and foreign borrowings, included in the model. They further revealed that there is evidence of a long-run equilibrium relationship between fiscal policy and economic growth in Nigeria. However, Bergh and Henrekson (2011) suggest that these estimates are driven by the unique dataset and specification used. Finally, for details see Bergh and Henrekson (2011).

Also, Osuala and Jone (2014) opined that specific fiscal policy variables that have a significant impact on economic growth in Nigeria are government recurrent and capital expenditures while non-oil taxes and government total debts have no significant relationship. They maintained that only capital expenditure has a short-run equilibrium relationship with economic growth. Finally, Koester and Kormendi (1989) reported that marginal tax rates have a significant negative relationship with the level of per capita GDP only and not with economic growth. Factors that influence the effect of government size on economic growth, many studies have stressed the role of a number of factors that can influence the magnitude and significance of the effect of government size on economic growth.

Pasichnyi (2020) investigated the *mechanisms of fiscal policy formation and realization as an instrument of economic development regulation. a set of methods and approaches of dialectical, systemic, and structural approaches, methods of analysis and synthesis, comparison, generalization, economic and mathematical modeling, and scientific abstraction are applied. The study showed that regulation of the tax burden on labor and capital influences the conjuncture of these factors in the market.*

Thanh, Hoai and Lam (2014) employed an endogenous growth model, panel data from 62 provinces and cities from 2000-2011, and PMG and Arellano-Bond difference GMM, to analyze empirically the relationship between the fiscal policy and economic growth in Vietnam. The study's main findings are (i) fiscal decentralization and economic growth cointegrate in the long run, but the government's efforts to adjust its fiscal policy during economic shocks that cause disequilibrium or make the economy deviate from its long-term trend produce very low effects; (ii) fiscal income decentralization and fiscal support have positive effects on economic growth while expenditure decentralization does not; (iii) current expenditure and spending on education, scientific research, health care, and environmental issues produce positive effects on the economic growth while public investment fails to do so.

Hodžić, S., Demirović, A., & Bečić, E. (2020) effects between fiscal policy and economic growth have been an important theoretical and empirical research topic. The neoclassical models imply that the economic effects of changes in government spending will be neutralized by the impact of consequent changes in private spending. Endogenous growth models, on the other hand, imply that changes in the level and composition of taxation and government expenditure can affect economic growth. The paper aims to explore the relationship and effects of fiscal policy and economic growth in 21 Central and Eastern European (CEE) countries over the period 2000-2018. The results, after controlling for various common and country-specific variables, imply that an increase in taxation, but not in non-productive expenditures, can positively affect economic growth. Our main findings are: (i) there is a significant and positive contemporaneous relationship between the general level of taxation and economic growth; and (ii) there is no relationship between the government's final consumption and economic growth. Therefore, our results contributed to the scientific literature by providing empirical evidence on the contemporaneous relationship between the general government tax receipt and economic growth in CEE countries.

Aremo and Abiodun (2020) investigated the causality among fiscal policy, economic growth, and income inequality in some twenty-six selected sub-African countries with a view to identifying the direction of causation among these variables. The methodology of multivariate Granger causality was applied to investigate the causality among fiscal policy, economic growth and income inequality variables. The findings show that in low-income countries and lower-middle-income countries, no designable causality could be established among the three variables probably suggesting a lack of effective policy coordination in SSA countries. However, a uni-directional causality running from economic growth to income inequality was found in upper middle income countries.

### **3.0. METHODOLOGY**

This study made use of an ex-post facto research design. Ex-post facto design is the type of research involving events that have already taken place (Onwumere, 2009). The implication for this was that the data already exist and no attempt would be made to control the relevant independent variable. It aims at determining and measuring the implications of one variable on another.

To address the methodology aspects, the study employs the Keynesian theoretical framework by John Meyer Keynes, 1935 in order to determine the effect of fiscal policy on economic growth in Nigeria, we assume that there exists a considerable level of relationship among macroeconomic variables. The Keynesian model allows this study to trace the effects of fiscal policy in place of government spending and tax on economic growth which is referred to as the GDP. Consider that the growth responds to a change in both tax revenue and government

expenditure; if the government expenditure decline, economic growth will decline, and if tax revenue increase, economic growth will decline as well. Thus, to Keynes, an economy is said to be efficient when all the resources are being fully employed which will lead to effective demand for its output. Keynesian recognizes the possibility of the government crowding-out investment through increased cost of borrowing, that is, interest rate (Okpanachi, 2007).

Let's assume that the equation is given as:

$$Y = C + I + G \dots\dots\dots (1)$$

Where Y is the gross domestic product, C is the consumption/Savings, I is the investment. And G is the government expenditure. In accordance with the Keynesian model, we can incorporate other macroeconomic variables in order to run up the statistical analysis. Therefore, the equation will be:

$$Y = C + I + I + G \dots\dots\dots (2)$$

In summary, fiscal policy is influenced by many economic variables and it influences most macroeconomic indicators.

### 3.1. Model Specification

The modeling structure of the study on the fiscal policy and economic growth in Nigeria follows the works of Kesavarajah (2012) in the study of Wagner's Law in Sri Lanka and Oke (2013) in his study of Fiscal policy and Economic Growth in Nigeria: the empirical function in which this study proposed to stand is giving as:

$$RGDP = F(, PEX, PRE, PCE, EXD) \dots\dots\dots (3)$$

Where:

- RGDP –Real Gross Domestic Product
- PEX - Public Total Expenditure
- PRE - Public Recurrent Expenditure
- PCE - Public Capital Expenditure
- EXD - External debt

Arising from equation 3, we adapted it and present our model as.

$$RGDP = F(PEX, EXD, EXTR, TXR) \dots\dots\dots (4)$$

Where

- RGDP –Real Gross Domestic Product
- PEX - Public Total Expenditure
- EXD - External debt
- EXTR-External Reserve
- LTXR is the Log of Tax Revenue

$$RGDP_t = \beta_0 + \beta_1 PEX_t + \beta_2 EXD_t + \beta_3 EXTR_t + \beta_4 TXR_t + \mu_t \dots\dots\dots (5)$$

include the t subscript

Some variables were log transformed so that the problem of heteroskedasticity can be reduced since it compresses the scale in which the variables are measured, thereby reducing a tenfold difference between two values to a twofold difference (Gujarati, 2014). While some variables were not log transformed because they are already in their rates examples include real interest rate and exchange rate. The model will be re-structured into:

$$\ln \text{RGDP}_t = \beta_0 + \beta_1 \ln \text{PEX}_t + \beta_2 \ln \text{EXD}_t + \beta_3 \ln \text{EXTR}_t + \beta_4 \ln \text{TXR}_t + \mu_t \quad (6)$$

The study on comparative analysis of determinants of investment in Nigeria using secondary time series data for the period 1986 – 2020. Thus, the measurement of the variables intended to use is discussed below.

**Table 1: Data Measurement**

Variables	Measurement
RGDP	Real Gross Domestic Product. This is the total monetary output produced in an economy within a fiscal year. It is the proxy value of economic growth and is measured in billion naira (#'Billion).
TGEX	This is the total public expenditure. This is calculated in billion naira (#'Billion)
EXD	These are debt owns by foreign bodies, persons, or countries. This is calculated in billion naira (#'Billion)
EXTR	This is an external reserve and is calculated in billion naira (#'Billion)
LTXR	Tax revenue calculated in billion naira (#'Billion)

Source: Authors' Computation, 2021

### 3.2. Estimation Technique

The research intends to employ a sound econometric technique appropriate for empirical problems; the study adopts Auto regressive distribution lag modeling. Several pre-estimation tests were employed with the intention to give clarification on the modeling. Such test includes descriptive statistics stationary test and co-integration test. These tests are discussed below.

#### Unit Root Test

Standard econometric methodologies assume stationarity in the time series while they are in the real sense non-stationary. Hence the usual statistical tests are likely to be inappropriate and the inferences drawn are likely to be erroneous and misleading (Stefan, 2009). The essence of testing for unit root is that if the series is not stationary then all the results from the classical linear regression analysis are not valid. Thus, the difference between stationary and non-stationary time series should be realized before examining the unit root process, Gujarati (2014). The following model will be used to consider the unit root test

$$Y_t = Y_{t-1} + \mu_t$$

Where  $\mu_t$  is the stochastic error term that follows the classical assumption, namely, it has zero mean, constant variance, and is none autocorrelated. Such an error term is also known as a white noise error term.

If the coefficient of  $Y_{t-1}$  is equal to 1, we face what is known as the unit root problem, i.e. a non-stationary situation. Therefore, if we run the regression:

$$Y_t = \rho Y_{t-1} + \mu_t$$



And actually if  $\rho = 1$ , we say that the stochastic variable  $Y_t$  has a unit root. In (times series) econometrics, a time series that has a unit root is known as a random walk (times series). A random walk in turn is an example of a non-stationary time series. An alternative form of  $Y_t = \rho Y_{t-1} + \mu_t$  is expressed as

$$\Delta Y_t = (Y_t - Y_{t-1})$$

### **Autoregressive Distributed Lag Modeling**

The bound test is computed based on an estimated error correction version of Autoregressive Distributed Lag (ARDL) model, by the Ordinary Least Square (OLS) estimator (PESARAN *et al.*, 2001). The bound testing procedure was chosen over other approaches to cointegration due to the following:

- i. The bounds testing procedure does not require that the variables under study be integrated in the same order unlike other techniques such as the Johansen cointegration approach. It is applicable irrespective of whether the regressors in the model are purely I(0), purely I(1), or mutually cointegrated.
- ii. The bounds testing approach is suitable for small or finite sample data, unlike another conventional cointegration approach. Its suitability for a small sample study is worth noting given that the sample period of this study is large (35 years).
- iii. The bounds test is a simple technique because it allows the co-integration relationship to be estimated by OLS once the lag order of the model is identified, unlike other multivariate co-integration methods.
- iv. The long and short-run parameters of the model can be estimated simultaneously. An F-test of the joint significance of the coefficients of the lagged levels of the variables was used to test the hypothesis of no co-integration among the variables against the presence of co-integration among the variables.

## **4.0. RESULTS AND DISCUSSION OF FINDINGS**

The results of the empirical analysis of the effect of fiscal policy on economic growth in Nigeria. The study begins with the verification of the time series properties of the variables used in the model such as the descriptive statistics, unit root testing break test, lag length selection test, co-integration testing, etc. The variables used in the course of this research work were: real gross domestic product proxied by economic growth, fiscal policy proxied by the total public expenditure, total debts stock, and external reserves while institutional qualities are proxy by the ratio of the difference in broad money supply and total money in circulation and broad money supply.

### **Descriptive Statistics**

**Table 2: Descriptive Statistics**

	LRGDP	LTXR	LTGEX	LEXTD	LEXTR
<b>Mean</b>	8.711360	6.779955	6.416990	6.705194	11.78491
<b>Median</b>	8.838581	6.781604	6.925595	6.475140	11.46509
<b>Maximum</b>	11.52878	7.929500	8.479155	8.495003	13.46123
<b>Minimum</b>	4.902307	5.606583	2.786861	3.724488	9.848086
<b>Std. Dev.</b>	2.000189	1.100571	1.808011	1.158163	1.084436
<b>Skewness</b>	-0.285130	0.084013	0.577343	-0.411264	0.042037

<b>Kurtosis</b>	2.000604	1.704323	2.057289	2.943099	1.662317
<b>Jarque-Bera</b>	1.710150	2.204889	2.870089	0.878060	2.320434
<b>Probability</b>	0.425251	0.332058	0.238105	0.644661	0.313418
<b>Sum Sq. Dev.</b>	120.0226	57.303434	98.06712	40.24022	35.28001
<b>Observations</b>	35	35	35	35	35

**Source: Authors' Computation, 2021**

*Note: LRGDP IS Log of Real Gross Domestic product, TXR is Log of Tax Revenue, LTGEX is Log of Total Government Expenditure, LEXTD is Log of External Debts stock, LEXTR is Log of External Reserves.*

The descriptive statistics of the Log of Real Gross Domestic Product (LRGDP), Log of Tax Revenue (TXR), Log of Total Government Expenditure (LTGEX), Log of External Debts stock (LEXTD), and Log of External Reserves (LEXTR) were presented in Table 2. The mean of the LRGDP, TXR, LTGEX, LEXTD, and LEXTR were 8.711, 6.780, 6.417, 6.705, and 11.785 while their standard deviations were 2.000, 1.101, 1.808, 1.158 and 1.084 respectively. All the series display high variability from their mean as displayed by the standard deviation values. The skewness of the variables shows that while the LRGDP, LTGEX, and LEXTD are negatively skewed, both TXR and LEXTR were positively skewed. The implication for this skewness is that the distribution of these variables is not symmetric as the tail of the normal distribution is farther from 0. It could also be deduced from the table that all of the variables are leptokurtic except LEXTD which displayed mesokurtic as the value of approximately 3. Contrary to the Jarque-Bera statistics, all variables were normally distributed; this is evident from the probability of Jarque-Bera statistics which accepted the null hypothesis of the existence of normality of the series in the model.

### **Correlation Matrix**

**Table 3: Correlation Matrix**

	LRGDP	TXR	LTGEX	LEXTD	LEXTR
LRGDP	1				
LTXR	0.702505	1			
LTGEX	0.985903	0.653213	1		
LEXTD	0.656481	0.141530	0.698643	1	
LEXTR	0.851050	0.812323	0.851539	0.357938	1

**Source: Authors' Computation, 2021**

Table 3 presents the correlation coefficients of Log of Real Gross Domestic Product (LRGDP), Log of Tax Revenue (LTXR), Log of Total Government Expenditure (LTGEX), Log of External Debts stock (LEXTD) and Log of External Reserves (LEXTR). While the coefficient between LTGEX and LTXR exact a correlation of 0.653, the correlation coefficient between the LEXTD and LTXR, LEXTR and LTXR, LEXTR and LTGEX were 0.142, 0.812, and 0.852 respectively. Since the correlation coefficients between the independent variables are less than 0.95, the study concluded that the occurrence of multicollinearity problems in the analysis is minimal

### **Unit Root Test**

The unit root with breaks was first noticed by Perron (1989), he showed that failure to allow for an existing break leads to a bias that reduces the ability to reject a false unit root null hypothesis. To overcome this, Perron proposed allowing for a known or exogenous structural break in the Augmented Dickey-Fuller (ADF) tests. Augmented Dickey-Fuller (ADF) Unit root testing along with breakpoint was applied with the intention of avoiding the variable(s)

being the integration of order 2. Table 4 presents the Augmented Dickey-Fuller (ADF) Unit Root break Test

**Table 4: Unit Root with Structural Break Point (ADF)**

Variable	Level	First Difference	Critical Value	Break Year	Lag	Order of Integration
LRGDP	-2.740061	-5.915983***	-4.443649	1997	2	I (1)
LTXR	-2.143041	-7.403114***	-4.443649	1994	2	I (1)
LTGEX	- 4.695045 **	-10.93637	-4.443649	2013	2	I (0)
LEXTD	-2.503871	-6.583068***	-4.443649	2006	2	I (1)
LEXTR	-3.213661	-7.652816***	-4.443649	2008	2	I (1)

Source: Authors' Computation, 2021

Note: \*, \*\*, & \*\*\* implies 10%, 5% & 1% significance level.

The result of the breakpoint unit root in Augmented Dickey-Fuller (ADF) was presented in Table 4. It indicates that the log of total government expenditure (LTGEX) was integrated of order zero, that is stationary at its original series. Log of real gross domestic product (LRGDP), Log of Tax Revenue (LTXR), Log of external debts stock (LEXTD) and Log of external reserve (LETR) were integrated of order one. That is the series were not stationary at their level but stationary after their first difference. The conditions for testing for co-integration have been met. Hence, the application of Autoregressive Distributed Lag Modelling is sufficient, this is called for the Bound Co-Integration test.

### Bound Test for Co-integration Test

**Table 5: Bound Test for Co-integration Test**

F-statistic	K		Lower Bound	Upper bound
18.70398***	5	10%	2.45	3.52
		5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Source: Authors' Computation, 2021

Note: \*, \*\* & \*\*\* implies 10%, 5% & 1% significance level.

The bound testing for co-integration was presented in Table 5. The bound test compares the F-value of a model at a 5% level with the lower bound test and upper bound test. The model F-statistics value of 18.70398 shows that the value is greater than both the lower and upper bound values of 2.86 and 4.01 respectively at a 5% significant level. The result shows that there exists a long-run relationship between fiscal policy and economic growth in Nigeria.

**Table 6: Estimated Coefficients of the Dynamic effect and Error correction Model**

Variables	Coefficient	Stand. Error	T-Statistics	P-Value
Method: Autoregressive Distributed Lag Model (ARDL)				
D(LRGDP(-1))	-0.650734	0.123570	-5.266133	0.0062
D(LTEXTD(-1))	-0.443673	0.150019	-2.957444	0.0417

D(LEXTR(-1))	0.114053	0.211199	0.540025	0.6178
D(LEXTD(-1))	0.031472	0.053453	0.588782	0.5876
D(LTXR(-1))	-4.453911	1.907301	-2.335190	0.0798
D(LRGDP(-2))	-0.126614	0.118528	-1.068214	0.3456
D(LTEXD(-2))	-0.735491	0.438680	-1.676602	0.1689
D(LEXTR(-2))	-0.567101	0.174057	-3.258131	0.0311
D(LEXTD(-2))	-0.160522	0.065014	-2.469023	0.0690
D(LTXR(-2))	-1.474735	0.811786	-1.816654	0.1434
ECT(-1)	-0.718399	0.184576	-3.892148	0.0177
R-Squared	0.986338			
Adjusted R-Squared	0.911195			
F-Statistics	13.12623***(0.011248)			
Durbin Watson	2.332181			

**Source: Authors' Computation, 2021**

**Note:** \*, \*\* & \*\*\* implies 10%, 5% & 1% significance level.

The Error Correction Model results in Table 6 show that about 71.9 % percent represents the speed at which the independent variables adjust annually as warranted by the Error Correction Model value of -0.718399. The co-efficient of the Error Correction Model which is -0.718399 confirms a theoretical exposition of the Error correction modeling with the negative value of the Error Correction Model and corresponding Probability Value of 0.017 which shows that the Error Correction Model is significant at a 5% significance level.

The value of the R-squared of 0.911195 is an indication that about 91.1% variation in Log of real gross domestic product is explained by Log of Tax Revenue (LTXR), Log of Total Government Expenditure (LTGEX), Log of External Debts stock (LEXTD) and Log of External Reserves (LEXTR) while the remaining 8.89% is explained by other factors. The F-Test which is the test of the overall significance of the model indicates that by its value of 13.126 (P-value=0.011), it is statistically significant at a 5% level. Therefore, the result of the individual independent variables regressed against the dependent variables as shown above is reliable and is a true representation of the data used in the analysis.

### **Estimated Result of the Effect of Fiscal Policy on Economic Growth in Nigeria**

**Table 7: Long-Run Effect of fiscal policy on Economic Growth in Nigeria**

Dependent Variable: LRGDP				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTEXD	1.901322	0.107553	17.677983***	0.0001
LEXTR	-0.589808	0.266449	-2.213583*	0.0913
LEXTD	-0.536926	0.076692	-7.001056***	0.0022
LTXR	-5.976078	2.021053	-2.956913**	0.0417
C	13.153428	2.163785	6.078899***	0.0037

**Source: Authors' Computation, 2021**

**Note:** \*, \*\* & \*\*\* implies 10%, 5% & 1% significance level.

The result of the analysis in Table 6 exacts an effect of fiscal policy on economic growth in Nigeria. The coefficients of the long run show that while the Log of Tax Revenue (LTXR), Log of External Debts stock (LEXTD), and Log of External Reserves (LEXTR) exact an

inverse effect on the Log of Real Gross Domestic Product (LRGDP). Log of Total government expenditure posits a positive effect on LRGDP in Nigeria. The theoretical postulations show that while LTXR and LEXTR do not correspond with the theoretical assertions, LTEXD and LEXTD were in tandem with theoretical expectations. The coefficient of LTXR, LEXTR, and LEXTD of -5.976, -0.590 and -0.537 shows that a unit increase in LTXR, LEXTR, and LEXTD brings about a decrease of -5.976, -0.590 and -0.537 in LRGDP respectively. Also, the coefficient of LTEXD of 1.901 shows that a unit increase LTEXD brings about an increase of 1.901.

The T-statistics show the individual significance of the variables in the model. The individual statistics show that only LEXTR is not statistically significant to explain the economic growth in Nigeria as the P-value of 0.0913 is more than 0.05. While the LTXR, LTEXD, and LEXTR P-values of 0.042, 0.000, and 0.002 were less than the 0.05 significant level.

The coefficient of the constant explains that if all the explanatory variables in the model are held constant, the Log of Real Gross Domestic Product will assume the value of 13.153

In reflection of the findings, the study of Aremo and Abiodun (2020) was in tandem with the empirical findings as the result reveals that the proxy for fiscal policy lack effective policy coordination in SSA countries. *The study by Thanh, Hoai and Lam (2014)* also was in consonance with the empirical findings as the study affirmed that current expenditure and spending on education, scientific research, health care, and environmental issues produce positive effects on economic growth. Another study by

On the other hand, the study by Hodžić, Demirović, and Bečić (2020) does not augur well with the empirical work of this study as the study affirmed that fiscal policy and economic growth explore that there is a significant and positive contemporaneous relationship between the general level of taxation and economic growth; while there is no relationship between the government final consumption and economic growth. The study by Pasichnyi (2020) also does not affirm the empirical findings as the study reveals that *showed that regulation of the tax burden on labor and capital influences the conjuncture of these factors in the market.*

## **5.0. CONCLUSION AND RECOMMENDATIONS**

The study examined the effect of fiscal policy contribution on economic growth in Nigeria from 1986 to 2020, some econometric tools were employed to explore the relationship between these variables. The study examines the stochastic characteristics of each time series by testing their unit root in the Augmented Dickey-Fuller (ADF) test. A bound test was employed for the Cointegration (s) was done to exact the long-run relationship among the variables of interest. Also, the Autoregressive Distributed Lag Model was used to provide complementary information on the dynamic behaviour of the variables in the system and the lost information of the adjusted period to equilibrium. Then, the effect of fiscal policy on economic growth was ascertained using the long-run coefficient of the Autoregressive Distributed Lag Model.

The findings of the analysis show that while log of Tax Revenue (LTXR), log of External Debts stock (LEXTD), and log of External Reserves (LEXTR) exact an inverse effect on log of Real Gross Domestic Product (LRGDP).

Based on this empirical analysis, the recommendations for the study are:

- i. The government should endeavour to reduce the proportion going into debt servicing and management and allocate efficiently resources for economic development such as education, health, and infrastructure sectors of the economy.
- ii. Budget monitoring should be made ethically paramount. Any spending out of the budget must obtain the consent of the executive. The government should also try to put in place effective machinery that will ensure strict adherence to due process and total implementation of annual budget provisions and avoid the diversion of public funds to personal uses.
- iii. In addition to the above, our external reserves formed part of GDP, there should be a fiscal policy framework to set up a monitoring group comprises of intellects who from time to time advise the government as the need arises to ensure the increase in the reserves is sustained.

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