

Government Expenditure and Economic Growth in Nigeria

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Abstract

This study empirically examines the effect of government expenditure on economic growth in Nigeria from 1985 to 2022. Government capital expenditure, government recurrent expenditure and total government expenditure were used as the proxies of government expenditure (independent variable) while Real Gross Domestic Product was used as the measure of economic growth (dependent variable). The study made use of annual time series data which were sourced from Central Bank of Nigeria (CBN) statistical bulletin. The study used Autoregressive Distributed Lag Model (ARDL) as the major data analysis technique. The results of the study revealed that government capital expenditure, government recurrent expenditure and total government expenditure have a positive and significant effect on Real Gross Domestic Product in Nigeria in both short run and long run. Based on the findings, the study concluded that government expenditure plays a significant role in promoting economic growth in Nigeria. The study recommends that government should increase and prioritize capital expenditure in sectors with the highest multiplier effects on economic growth, such as infrastructure, technology, and human capital development, while ensuring efficient implementation and monitoring of projects.

Introduction

The direction and magnitude of relationship between government expenditure and economic performance has continued to generate series of debate among scholars. It is obviously presumed that Government performs two basic functions: protection (security) and provisions of certain public goods. The Protective function entails creation of rule of law and enforcement of property rights which helps to minimize risks of criminality, protect life and property, and the nation from external attacks; while defense, roads, education, health, and power, and so on are goods provided by government (Abullahi 2018). Consequently, government expenditure as an aspect of fiscal policy has therefore remained an indispensable task on governments for countries across the globe regardless of the economic system in practice. Government expenditure is the total in cash of the Federal, State and Local government spending including that of their agencies and financial transfers to the parastatals at the tree tiers of governments. It also refers to the expenses which a government incurs for its own maintenance, the society and the economy, and in helping other countries (Oludare & Olufemi, 2022). Miftahu and Rosni (2017) held that government expenditure occurs in an economy for two major reasons: to provide the necessary and required facilities needed for the maintenance of law and order and further enhance allocative efficiency in the presence of externalities and also, to provide all the necessary and required infrastructural facilities that will heighten productivity and encourage economic activities in the long-run. Nteegah (2017) noted that it is inevitable for the government of a nation to spend on cultural and welfare services; including education and income redistribution, maintenance of law and order as well as its role in activities relating to economic regulations, whether it is 'capital expenditure' which is, government spending on acquiring or improving relatively permanent asset or 'recurrent expenditure' which is spending on operating items, goods, or services that are used up over a short time. Government expenditure is an important instrument for government to control the economy and enhance economic growth. According to Gbosi and Omoke (2014) economic growth means the expansion of a country's capacity to produce goods and services its people want within a given period. Economic growth

is also conceptualized as increase in output of an economy's capacity to produce goods and services needed to improve the welfare of the country's citizens. Economic growth is enabled by increase in productivity, which lowers the inputs (labor, capital, material, energy, etc.) for a given amount of output. However, the size of government expenditures and its effect on economic growth, and vice versa, has been an issue of sustained interest for over decades now. In other words, the relationship between government expenditure and economic growth has continued to generate series of debate among scholars. Many scholars have the belief that an increase in government expenditure increases the growth of an economy, meanwhile other scholars believe otherwise. The neo classical school of thoughts argue that increasing government expenditure could decrease the aggregate production of an economy. Their argument is; in order for the government to increase their expenditure, they definitely need financial resources which are generated through increment of tax or borrowing from abroad. Increment of tax may lead to a decrease in income and aggregate demand because higher taxes discourage additional work. Furthermore, increasing tax leads to increase in costs of production and decreases investment. If the government decides to increase their borrowing in order to increase their expenditure on the other hand, this reduces private investment due to competition and overcrowding (Lipsy & Crystal, 2017). Oladosu and Goodluck (2020) opined that increase in government expenditure on socio-economic and physical infrastructures will encourage economic growth. For example, government expenditure on health and education raises the productivity of labour and increase the growth of national output. Similarly, expenditure on infrastructures such as roads, communications, power, etc, reduces production costs, increases private sector investment and profitability of firms, thus fostering economic growth and improving economic performance.

Literature Review

Theoretical Review

Many theories of government expenditure and economic growth exist. For the purpose of this study, Wiseman -Peacock Theory and Wagner's theory of government expenditure are adopted and reviewed as follows:

Wiseman -Peacock Theory

The authors of this hypothesis, Jack Wiseman and Allan Peacock focused their work on the U.K economy. The hypothesis propounded that government expenditure's mode of increment is not smooth and continuous, but appears in jerks and steps, just like fashion. According to them, the fiscal activities of the government rise step by step to successive new plateau. When there is depression or other social disorder such as wars, the existing public revenue cannot meet the expenditure. From this, therefore, the non-availability of sufficient revenue constrains the expansion of expenditure. With the presence of forces that increase the expenditure, the older level of expenditure and taxation (Revenue) a "displacement effect" is created. It is therefore evident that war and other social disturbances compel the government to review upwards to its revenue position in order to accommodate the increased expenditure. As the people accept to pay new tax (tax tolerance), both the level of revenue and expenditure will rise, thereby producing a new stability, which may be displaced with another disturbance occurrences. Since the disturbance that precipitin the new increased taxation (revenue) and central government expenditure affect the central government, there is an inherent tendency for the central economic activity to grow faster than that of the state and local governments. Wiseman - Peacock Hypothesis emphasizes the recurrent of abnormal situations, which cause sizable jumps in public expenditure and revenue. Sometimes, the government and the people may jointly review the revenue position against the required increase in public expenditure. In this way, the old

public expenditure and revenue levels get stabilized at a new level until another disturbance occurs to cause displacement effect. Since each major disturbance makes the government to take over a larger proportion of the total national economic activities, the net result is the concentration effect. The Wiseman-Peacock Hypothesis is still a description of a particular tendency and does not isolate all relevant causes at work. In many developing countries, the state is deliberately trying to increase its activities through various tax efforts.

Wagner's Theory of Government Expenditure

This theory was postulated by Wagner in 1890. Wagner was the first to model a relationship between government expenditure and economic growth of a country. Wagner argued that government spending is an endogenous factor, which is determined by the growth of national income. This view is what is popularly known as Wagner's Law in the empirical literature. This relationship he postulated between the government expenditure and national income in the late 19th century popularly known as Wagner's Law. Wagner's Law originally states that as population of a country rises, government activities expand both intensively and extensively calling for an increase in government spending. This implies that government expenditure is a function of population growth. There is a functional relationship between the growth of an economy and government activities with the result that the governmental sector grows faster than the economy Ibok and Bassey (2014) quoting (Wagner, 1912) stated that, Wagner's Law suggests that during the process of economic development, the share of government spending in national income tends to expand. This implied that there is a long-run tendency for government activities to grow relative to economic activity. Specifically, the law states that, during the process of economic development, the share of government expenditures in total economic activities increases as the real income per capita of a nation increases. Thus, a higher level of economic growth requires higher levels of government expenditure. They further explained that, according to Wagner, three main reasons support this hypothesis. These are:

Empirical Literature

Zinabari and Olukemi (2022) investigated the impact of government expenditure on economic growth from 1981 to 2020 using Dynamic Ordinary Least Squares that incorporates endogeneity in its estimation. The findings obtained from the long run Dynamic OLS showed that government expenditure on administration, government expenditure on economic services and nominal exchange rate were significant and had the expected signs except government expenditure on economic services. The empirical findings further indicated that the ECM was negative and statistically significant at 5%. The speed of adjustment was 71.38%. Lastly, in the short-run analysis, findings revealed that the nominal exchange rate was significant and had the expected

Adole, Abraham and Sunday (2021) examined the impact of government expenditure on economic growth in Nigeria for the period, 1984- 2015 with view to re-assess the Keynesian and Endogenous Growth Models proposition that public expenditure stimulates economic growth. The study employed Johansen co-integration and Error Correction Model. The empirical results showed that public (recurrent and capital) expenditure has significant positive impact on the growth of the economy in the long run and an insignificant negative impact on the Nigerian economy in the short run, reinforcing the Keynesian and Endogenous Growth Models that public expenditure stimulates economic growth in Nigeria when seen in the long run.

Chandana, Adamu and Musa (2021) investigated the impact of Nigerian government expenditure (disaggregated into capital and recurrent) on economic growth using time series data for the period 1970-2019. The study employed Autoregressive Distributed Lag (ARDL) model. To ensure robustness of results, the study showed the structural breaks in the unit root test and the co-integration analysis. The key findings of the study are that capital expenditure has positive and significant impact on economic growth both in the short run and long run while recurrent expenditure does not have significant impact on economic growth both in the short run and long run.

Onifade, Erdogan, Asongu and Bekun (2020) examined the impacts of public expenditures on economic growth with respect to capital expenditure, recurrent expenditure and the government fiscal expansion in line with support for the budgetary allocations to various sectors in the context of the Nigerian economy. Pesaran's ARDL approach has been applied to carry out the impact analysis using annual time-series data from 1981 to 2017. Empirical findings support the existence of a level relationship between public spending indicators and economic growth in Nigeria. Incisively, recurrent expenditures of government were found to be significantly impacting on economic growth in a negative way while the positive impacts of public capital expenditures were not significant to economic growth over the period of the study. Further results on the Granger Causality Test revealed that fiscal expansion of the government that is hinged on debt financing is strongly granger causing public expenditures and domestic investment with the latter also Granger causing real growth in the economy.

Ebipre and Eniekezimene (2020) investigated the impact of government expenditure on economic growth in Nigeria between 1981 and 2016. Their findings showed that GCE was inversely related to RGDP both in short run and in the long run. GRE was positively related to RGDP both in the long run and in the short run and there was inverse relationship between CPS and RGDP both in the short run and in the long run. However, with a low ECM (-1) of approximately 3% speed of convergence to equilibrium in the long run, it is clear that the short run dynamic disequilibrium was slow and statistically insignificant to converging to long run equilibrium, implying that government expenditures have no long run impact on economic growth in Nigeria.

Kazeem (2019) investigated the responses of State governments to change in fiscal policy between 1999 and 2017. The methodology employed in the study involves the use of Generalized Method of Moments (GMM) to estimate the cyclical fiscal policy. The results showed that the fiscal institutions are rather weak and may actually also form part of the rent-seeking agents in the fiscal space as it engenders procyclical fiscal policy at the second tier of government in Nigeria. The empirical findings of this study concluded that fiscal policy of State governments in Nigeria is highly procyclical.

Bashir, Hamza, and Hamza (2016) examined the impact of government expenditure on economic growth in Nigeria. It covers the period of 1981-2014 and the Ordinary Least Square (OLS) method of econometric technique was used. The analysis uses GDP as dependent variable and the independent variables are labour, human capital, physical capital, government capital expenditure and government recurrent expenditure. The result indicated that there is negative and insignificant relationship between human capital and GDP, positive but insignificant relationship between physical capital and GDP, and there is positive but insignificant relationship between government capital expenditure and GDP.

Kareem, Bakare, Ademoyewa, Bashir, Ogunla and Arije (2014) investigated the impact of public sector spending on economic growth in Nigeria for the period spanning between 1960 and 2010. The variables were tested for stationarity and cointegration while regression and correlation analyses were used as analytical techniques. The results found out that recurrent and capital expenditure contributed positively to economic growth during particular reference to the period under review. The result therefore showed that capital and recurrent expenditures are significant at 1% level.

Okoro (2013) investigated the impact of government expenditure on the Nigerian economic growth. The study made use of time series data of 32years period (1980- 2011) and employed the ordinary least square multiple regression analysis to estimate the model specified. Real Gross Domestic Product (RGDP) was adopted as the dependent variable while government capital expenditure (GCEXP) and government recurrent expenditure (GREXP) represents the independent variables. With the application of Granger Causality test, Johansen Co-integration Test and Error Correction Mechanism, the result showed that there exists a long-run equilibrium relationship between government spending and economic growth in Nigeria.

Methodology

The research design adopted for this research is ex-post facto research design. Ex post facto study also known as after-the-fact research is a category of research design in which the investigation starts after the fact has occurred without interference from the researcher. **Also**, this study made use of annual time series data that covers a period of thirty-eight years which spans through 1985 to 2022. The data were extracted mainly Central Bank of Nigeria (CBN) statistical bulletin and A model is identified if it is in a unique statistical form enabling unique estimates of the parameters to be subsequently estimated from a sample data. In this study, econometric model in the form of multiple regression model will be adopted. The model is specified as follows:

Expressing the model in its functional form, we have:

$$RGDP = f(GCE, GRE, TGE) \quad (1)$$

Expressing the model in its mathematical form, we have:

$$RGDP = \beta_0 + \beta_1 GCE + \beta_2 GRE + \beta_3 TGE \quad (2)$$

Expressing the model in its econometric form, we have:

$$RGDP = \beta_0 + \beta_1 GCE + \beta_2 GRE + \beta_3 TGE + e_t \quad (3)$$

Expressing the model in its log linear form, we have:

$$\text{LOG}(RGDP) = \beta_0 + \beta_1 \text{LOG}(GCE) + \beta_2 \text{LOG}(GRE) + \beta_3 \text{LOG}(TGE) + e_t \quad (4)$$

Where:

RGDP = real Gross Domestic Product,

GCE = government capital expenditure

GRE = government recurrent expenditure,

TGE = total government expenditure,

β_0 = constant variable in the model,

β_1 = parameter of government capital expenditure,

β_2 = parameter of government recurrent expenditure,

β_3 = parameter of total government expenditure (TGE), e_t = Error term

A priori expectation-This is used to examine the economic usefulness of the equation with regard to meeting the a priori expected sign of the parameters. Generally, government expenditure is expected to have positive effect on economic growth in Nigeria. The summary of the a priori expectation is given as: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$. The secondary data (time series data generated) sourced for the purpose of this study were analyzed and interpreted using Autoregressive Distributed Lag (ARDL). Autoregressive Distributed Lag (ARDL) was adopted because the result of the Augmented Dickey Fuller (ADF) unit root test showed that one of the time series was stationary at level; that is, integrated of order zero [I(0)], others only became stationary after first differencing; that is, integrated of order one [I(1)].

Data Analysis and Results

The first stage of econometric analysis is to test for the stationarity properties of the variables. Augmented Dickey-Fuller (ADF) type of unit root test was conducted in this study to help avoid “spurious” or “nonsense” regression results. The results of Augmented Dickey-Fuller (ADF) unit root tests are presented in Table 1:

Table 1: Augmented Dickey-Fuller (ADF) Test Results

Variables	ADF at Levels			ADF at First Difference			Order of Integration
	ADF Statistic	5% Critical Value	Decision	ADF Statistic	5% Critical Value	Decision	
LOG(RGDP)	-0.740884	-2.945842	Not Stationary	-3.980581	-2.945842	Stationary	I(0)
LOG(GCE)	-1.339352	-2.943427	Not Stationary	-6.191324	-2.945842	Stationary	I(1)
LOG(GRE)	-1.607687	-2.943427	Not Stationary	-8.333166	-2.945842	Stationary	I(1)
LOG(TGE)	-8.176158	-2.945842	Stationary	-	-	-	I(0)

Source: *Researcher's Computation, 2024.*

The results of the Augmented Dickey Fuller (ADF) unit root test at levels reported in Table 1 showed that total government expenditure was stationary at order zero [i.e., I(0)]. On the other hand, Real Gross Domestic Product, government capital expenditure and government recurrent expenditure were not stationary at the 5 percent level of significance. This is because in absolute terms the Augmented Dickey Fuller (ADF) test statistics for these variables are less than their associated critical values. Thus, the null hypothesis of unit root in each of the variables cannot be rejected at levels. In other words, all the four variables were not stationary at order zero. The evidence of non-stationarity in Real Gross Domestic Product, government capital expenditure and government recurrent expenditure necessitated the differencing of the series to check if they can become stationary upon first differencing. However, the results of the Augmented Dickey Fuller (ADF) unit root test at first difference reported in Table 1 also showed that Real Gross Domestic Product, government capital expenditure and government recurrent expenditure were stationary at order one [i.e., I(1)]. This implies that they attained stability by first differencing. It also shows that the null hypothesis of presence of unit root was rejected after first differencing for Real Gross Domestic Product, government capital expenditure and government recurrent expenditure. Based on the Augmented Dickey Fuller (ADF) unit root test therefore, while one of the time series was stationary at level i.e. integrated of order zero, others only became stationary after first differencing i.e. integrated of order one. It can therefore be inferred that a mixed order of integration is evident among the time series in the model.

ARDL Bound Cointegration Test

Bound testing technique was used to test for cointegration because of a mixture of variables of order I(0) and I(1). However, the result of the ARDL Bounds Cointegration Test for this study is reported in Table 2:

Table 2: ARDL Bounds Cointegration Test Result

Selected Model: ARDL (2, 3, 0, 2)		
Test Statistic	Value	K
F-statistic	4.354581*	3
Critical Value Bounds		
Significance	Lower Bound [I(0)]	Upper Bound [I(1)]
5%	2.79	3.67

Source: Researcher's Computation, 2024

The result of ARDL Bounds Test presented in Table 2 showed that the F-statistic (4.354581) is greater than the lower bound (2.79) and upper bound (3.67) at 5% level of significance. Hence, there is sufficient statistical evidence to reject the null hypothesis of no co-integration at 5% level of significance and conclude that there exists a long run relationship or cointegration between the variables. Specifically, it can therefore be concluded based on the ARDL Bounds cointegration test that there is a long-run relationship among Real Gross Domestic Product, government capital expenditure, government recurrent expenditure and total government expenditure. The confirmation of long run dynamics among the variables gives credence for the estimation of the extent of the relationship by proceeding to estimate the ARDL short-run model, ARDL long-run form and ARDL error correction for Real Gross Domestic Product model.

ARDL Long-Run Dynamics

In this section, the study estimates the long run effect of government capital expenditure, government recurrent expenditure and total government expenditure on Real Gross Domestic Product in Nigeria as follows:

Table 3: Autoregressive Distributive Lag (ARDL) Long Run Dynamics Result

Dependent Variable: LOG(RGDP)				
Independent Variables (Regressors)	Coefficient (Parameter estimates)	Std. Error	t-Statistic	Prob
LOG(GCE)	0.821091	0.201899	4.066861	0.0008
LOG(GRE)	0.110252	0.035862	3.074515	0.0069
LOG(TGE)	0.122083	0.041978	2.908233	0.0098
C	2.973683	9.534318	0.311892	0.7589

Source: Researcher's Computation, 2024.

From the ARDL long run estimate result in Table 4.3, government capital expenditure has a positive coefficient value of 0.821091. This implies that government capital expenditure has a positive effect on Real Gross Domestic Product. Hence, a unit increase in government capital expenditure will lead to 0.821091 unit increase in Real Gross Domestic Product while a unit decrease in government capital expenditure will lead to 0.821091 unit decrease in Real Gross Domestic Product. Also, the p-value (i.e., 0.0008) of the coefficient of government capital expenditure which is less than 0.05 indicates that government capital expenditure has a significant effect on Real Gross Domestic Product. It can therefore be concluded that government capital expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in the long run. From the ARDL long run estimate result in Table 3, government recurrent expenditure has a positive coefficient value of 0.110252. This implies that government recurrent expenditure has a positive effect on Real Gross Domestic Product. Hence, a unit increase in government recurrent expenditure will lead to 0.110252 unit increase in Real

Gross Domestic Product while a unit decrease in government recurrent expenditure will lead to 0.110252 unit decrease in Real Gross Domestic Product. Also, the p-value (i.e., 0.0069) of the coefficient of government recurrent expenditure which is less than 0.05 indicates that government recurrent expenditure has a significant effect on Real Gross Domestic Product. It can therefore be concluded that government recurrent expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in the long run. From the ARDL long run estimate result in Table 2, total government expenditure has a positive coefficient value of 0.122083. This implies that total government expenditure has a positive effect on Real Gross Domestic Product. Hence, a unit increase in total government expenditure will lead to 0.122083 unit increase in Real Gross Domestic Product while a unit decrease in total government expenditure will lead to 0.122083 unit decrease in Real Gross Domestic Product. Also, the p-value (i.e., 0.0098) of the coefficient of total government expenditure which is less than 0.05 indicates that total government expenditure has a significant effect on Real Gross Domestic Product. It can therefore be concluded that total government expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in the long run.

ARDL Short Run Dynamics

The Error Correction Mechanism (ECM) was conducted and the results are reported in Table 4.

Table 4: Autoregressive Distributive Lag (ARDL) Error Correction Result

Dependent Variable: LOG(RGDP)				
Independent Variables (Regressors)	Coefficient (Parameter Estimates)	Std. Error	t-Statistic	Prob
DLOG(RGDP(-1))	0.182224	0.126474	1.440806	0.1678
DLOG(RGDP(-2))	0.556543	0.104661	5.317587	0.0001
DLOG(RGDP(-3))	-0.264554	0.108702	-2.433752	0.0263
DLOG(GCE)	0.115983	0.025329	4.579096	0.0003
DLOG(GRE)	0.142422	0.040800	3.490894	0.0028
DLOG(GRE(-1))	-0.018958	0.025873	-0.732729	0.4737
DLOG(GRE(-2))	0.052309	0.023153	2.259276	0.0373
DLOG(GRE(-3))	0.110259	0.023069	4.779469	0.0002
DLOG(TGE)	0.267351	0.064579	4.140026	0.0007
DLOG(TGE(-1))	-0.036765	0.030567	-1.202778	0.2455
DLOG(TGE(-2))	-0.128459	0.031201	-4.117091	0.0007
DLOG(TGE(-3))	-0.122083	0.031466	-3.879783	0.0012
CointEq(-1)*	-0.036686	0.007073	-5.186106	0.0001
Adjusted R ² = 0.753801				
Durbin-Watson stat = 2.225815				

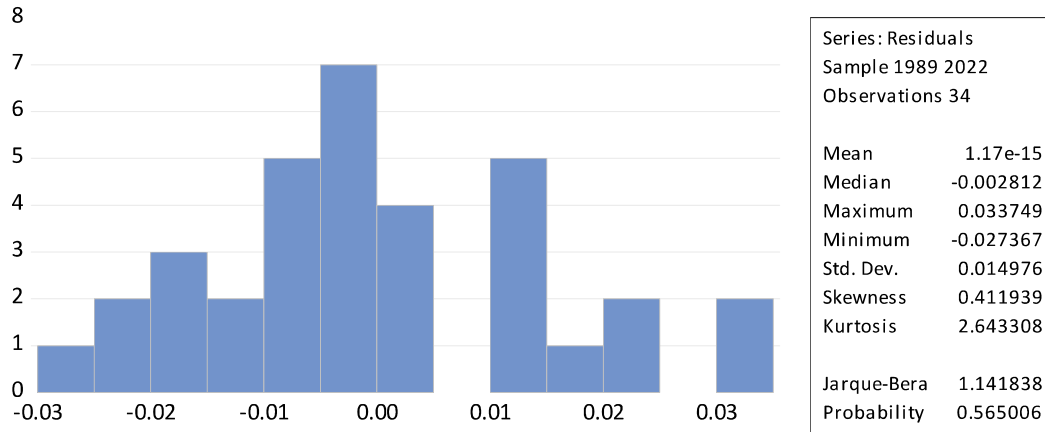
Source: Researcher's Computation, 2024.

The short run estimations are conducted using the Autoregressive Distributed Lag (ARDL) technique. Thus, the results of the ARDL Error Correction are reported in Table 4. The result shows that government capital expenditure has a positive coefficient value of 0.115983. This implies that government capital expenditure has a positive effect on Real Gross Domestic Product. Hence, a unit increase in government capital expenditure will lead to 0.115983 unit increase in Real Gross Domestic Product while a unit decrease in government capital expenditure will lead to 0.115983 unit decrease in Real Gross Domestic Product. Also, the p-value (i.e., 0.0003) of the coefficient of government capital expenditure which is less than 0.05 indicates that government capital expenditure has a significant effect on Real Gross Domestic Product. It can therefore be concluded that government capital expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in the short run. The short run

estimations are conducted using the Autoregressive Distributed Lag (ARDL) technique. Thus, the results of the ARDL Error Correction are reported in Table 4. The result shows that government recurrent expenditure has a positive coefficient value of 0.142422. This implies that government capital expenditure has a positive effect on Real Gross Domestic Product. Hence, a unit increase in government recurrent expenditure will lead to 0.142422 unit increase in Real Gross Domestic Product while a unit decrease in government capital expenditure will lead to 0.142422 unit decrease in Real Gross Domestic Product. Also, the p-value (i.e., 0.0028) of the coefficient of government recurrent expenditure which is less than 0.05 indicates that government recurrent expenditure has a significant effect on Real Gross Domestic Product. It can therefore be concluded that government recurrent expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in the short run. In addition, the result shows that at initial level, total government expenditure has a positive coefficient value of 0.267351. This implies that total government expenditure at the initial level has a positive effect on Real Gross Domestic Product. Hence, a unit increase in total government expenditure will lead to 0.267351 unit increase in Real Gross Domestic Product while a unit decrease in total government expenditure will lead to 0.267351 unit decrease in Real Gross Domestic Product. Also, the p-value (i.e., 0.0007) of the coefficient of total government expenditure which is less than 0.05 indicates that total government expenditure has a significant effect on Real Gross Domestic Product. It can therefore be concluded that total government expenditure has a positive but significant effect on Real Gross Domestic Product in Nigeria in the short run. However, the error correction term indicates the speed adjustment to restore equilibrium in the dynamic model. The error correction mechanism coefficient shows how quickly variables converge to equilibrium and it should have a statistically significant coefficient with a negative sign. Thus, the error correction coefficient estimated at CointEq (-1) is highly significant (0.0001) and positive (-0.036686) as expected. This implies a very high speed of adjustment to equilibrium. The highly significant error correction term further confirms the existence of a stable long-run relationship among all the research variables with their various significant lags. Specifically, the coefficient of CointEq (-1) which is -0.036686 indicates that deviation from the long-term growth rate in Real Gross Domestic Product is corrected by 3.7% in the following year. In furtherance, the adjusted R-Square of 0.753801 indicates that about seventy-five (75) percent of the total variation in Real Gross Domestic Product is explained by systematic changes in government capital expenditure, government recurrent expenditure and total government expenditure while the remaining twenty-five (25) percent of the variation is explained by other factors not included in the model. Lastly, the Durbin-Watson stat statistics of 2.225815 shows that the model is free from the problem of autocorrelation. In summary, it can be observed that both the short run and long run results yielded the same sign for the variables which signifies consistency in the effects of the independent/explanatory variables (Government capital expenditure, government recurrent expenditure and total government expenditure) on the dependent/explained variable (Real Gross Domestic Product in Nigeria) in the short run and long run.

Post-Estimation Tests

Normality Test



Source: *Researcher's Computation, 2024.*

Figure 1: Normality Test Result

Normality test was carried out to verify if the error term is normally distributed. The null hypothesis states that the residuals are normal distributed at 5 % level of significance. To test this hypothesis, Jarque-Bera statistics was used. The result in Figure 4.1 above shows that Jarque-Bera statistic is 1.141838 and the probability is 0.565006. However, since the probability value (0.565006) of Jarque-Bera statistic is greater than 5%, we do not reject the null hypothesis and conclude that the residuals are normally distributed at 5 % level of significance.

Other Post Estimation Tests

Table 5: Other Post Estimation Tests Results

Test	F-Statistic	P-value	Null Hypothesis	Decision
Breusch-Godfrey Serial Correlation LM Test	2.625933	0.1053	H_0 : No serial correlation	Do not reject H_0
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.430598	0.9506	H_0 : Homoscedasticity	Do not reject H_0
Ramsey RESET Test	1.280344	0.2744	H_0 : The model is correctly specified	Do not reject H_0

Source: *Researcher's Computation, 2024.*

The results of Breusch-Godfrey serial correlation LM test in Table 5 above shows that F-statistic is 2.625933 and the probability value is 0.1053. However, since the probability value (0.1053) of the F-statistic is greater than 5 percent, we do not reject the null hypothesis and conclude that the residuals are not serially correlated. That is, the estimated model is not suffering from serial autocorrelation problem. Also, the result of Breusch-Pagan-Godfrey heteroskedasticity test in Table 5 above shows that F-statistic is 0.430598 and the probability value is 0.9506. However, since the probability value (0.9506) of the F-statistic is greater than 5 percent, we do not reject the null hypothesis and conclude that the variance of the residuals is homoscedastic over the period covered in this study. This implies that the estimated model is free from the problem of heteroskedasticity. The results of Ramsey RESET test in Table 5 above show that F-statistic is 1.280344 and the probability value is 0.2744. However, since the probability value (0.2744) of the F-statistic is greater than 5 percent, we do not reject the null hypothesis and conclude that

the model is correctly specified. This suggests that the variables included in the model are adequate and sufficient.

Discussion of Findings

This study empirically analyzed the relevant annual time series data sourced with respect to the effect of government expenditure on economic growth in Nigeria from 1985 to 2022. The time series data used for the study were sourced from Central Bank of Nigeria (CBN) statistical bulletin and World Bank Development indicators. The study adopted descriptive statistical technique, Unit root test, ARDL Bounds Cointegration test and Autoregressive Distributed Lag (ARDL) as the data analysis techniques. Thus, the findings of the study are discussed in this section as follow:

The results of the study showed that government capital expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in both short run and long run. This implies that increase in government capital expenditure will lead to significant increase in Real Gross Domestic Product in Nigeria in the short run and long run. This finding is in agreement with the finding of Ugochukwu and Oruta (2021) which stated that there is positive and significant impact of government capital expenditure on Gross Domestic Product as a proxy of economic growth in Nigeria. Evidences that emerged from the results of the study showed that government recurrent expenditure has a positive and significant effect on Real Gross Domestic Product in Nigeria in both short run and long run. This implies that increase in government recurrent expenditure will lead to significant increase in Real Gross Domestic Product in Nigeria in the short run and long run. This result is supported by the result of Onifade, Savas, Savas, Asongu and Bekun (2020) which established that government recurrent expenditure has a positive and significant relationship with economic growth in Nigeria. Lastly, the results of this study showed that total government expenditure has a positive and non-significant effect on Real Gross Domestic Product in Nigeria in both short run and long run. This implies that increase in total government expenditure will lead to insignificant increase in Real Gross Domestic Product in Nigeria in the short run and long run. This result is in tandem with the result of Nwadiubu and Onuka (2015) which stated that there is a positive relationship between total government expenditure and economic growth in Nigeria.

Conclusion

This study determined the effect of government expenditure on economic growth in Nigeria. The empirical results of the study showed that government capital expenditure, government recurrent expenditure and total government expenditure have joint significant effect on Real Gross Domestic Product in Nigeria. Based on the findings, the study concludes that government expenditure plays a significant role in promoting economic growth in Nigeria.

Recommendations

Based on the above findings and conclusions, the following are recommendation are made:

1. Government should increase and prioritize capital expenditure in sectors with the highest multiplier effects on economic growth, such as infrastructure, technology, and human capital development, while ensuring efficient implementation and monitoring of projects.
2. Government should implement policies to optimize recurrent expenditure by ensuring that it is directed toward essential services and programs that contribute to economic growth, while reducing waste, redundancies, and inefficiencies in public service management.
3. Government should establish fiscal policies that balance government expenditure with sustainable revenue generation, such as improving tax collection systems, expanding the tax base, and reducing reliance on borrowing, to ensure that expenditures contribute to economic stability and growth.

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