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# Assessment of the Impact of Budget Implementation on Economic Growth in Nigeria

by

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#### Abstract

This study assessed the impact of budget implementation on economic growth in Nigeria. Specifically, the study examined the effects of public capital and recurrent expenditures on Nigeria's real gross domestic product. Correlational research design was adopted for this study. Secondary data relating to the study were obtained from World Bank Indicators (WDI), National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN) Statistical Bulletins in addition to other Journal publications. Gross Domestic Product was used as the dependent proxy, while Capital expenditure, Recurrent expenditure and Debt as the independent proxies. Using Endogenous Growth Model, and Autoregressive Distributed Lag (ARDL) bounds test to test the long run relationship between the variables, it was found that capital expenditure exerts positive and significant relationship with the Gross Domestic Product of Nigeria. Likewise, recurrent expenditure and gross domestic product show positive and significant relationship, and government debt and gross domestic product also show negative and significant relationship. Based on these it is recommended that government should prioritize their investment spending through physical capital and in human capital and avoid excessive debt burdens that can hinder long-term development.

Key words: Budget Implementation, Capital Expenditure, Recurrent Expenditure, Gross Domestic Product

#### 1. Introduction

Budget implementation is a critical aspect of economic management in any economy. It involves taking the necessary steps and measures to ensure that the budgetary plans, programs, and projects outlined in the national budget are effectively executed. The

successful implementation of a budget has a direct impact on the economic growth and development of a nation. Nigeria has faced numerous challenges in achieving sustainable economic growth and development. The country has experienced fluctuating economic performance over the years, influenced by factors such as political instability, corruption, inadequate infrastructure, and poor budget implementation. Budgeting in Nigeria has continued to generate various controversies as to the modality for preparation and administration due to continuous change in government and the consequential change in policy and ideology. In 2013 there was the controversy over the oil benchmark that delayed the National Assembly from the passage of the 2013 budget due to dispute over the price that must be used for budgeting purposes. The budget of 2016 was also fraught with issues like budget padding and misplaced budget.

A budget is designed to stimulate the growth in the production sector, check inflationary pressure, correct balance of payment deficit and maintaining a reasonable foreign exchange reserve however delays and imbalances would slow down any country's journey to economic prosperity. Since 1999, Nigeria has witnessed low level of budget implementation resulting in limitations to the executive arm's ability to effectively execute projects that would improve the living conditions of the citizenry (Ibrahim, 2011).

The root of most problems in Nigeria is imbalances in budget formulation and implementation. According to Ogujiuba and Ehigiamusoe (2013), the budget ought to be the most important economic policy instrument; unfortunately, it is shrouded with a lot of myths and illusions and as such might not contribute to the economic growth and development of the country. In Nigeria, budget process includes budget preparation by the executive, legislative approval and implementation by the different ministry, department and agencies of the government. Before ministries and spending agencies of the government can incur an obligation to make expenditures, they must secure spending authorization from the Ministry of Finance through the use of warrants which authorize officers controlling votes to incur expenditure in accordance with the approved estimates subject to any reserved items. If the Appropriation Act has not come into operation at the beginning of the year, a provisional general warrant may be issued to ensure continuity of the services of government at a level not exceeding those of the previous year.

Budget as a vital economic policy instrument of government reflects the government priorities in respect to her social and economic policies.

The sources of revenues to fund government budget in Nigeria often is from Petroleum products and taxes. Thus, budget is estimated at per barrel price of and added to taxes revenues, where there are fluctuations in the market price of petroleum products, there would be an adjustment on the estimate to reflect the current situation.

Olomola (2004) opined that the process of budgeting has always been attributed to unending faults and constraint with budget implementation. Therefore, these bottlenecks clearly have negative implications on the execution of government policies and programs into outcomes that would enhance the welfare of its citizens, such as provision of employment opportunities, reduction in poverty and infrastructural development.

The gap between budget initiation and full implementation to achieve the desired result has been of serious concern to researchers and policy makers in Nigeria. It is one

thing to propose a budget and another to implement the proposed budget to achieve its goals of economic growth and development.

Despite the existence of budgetary provisions and allocations aimed at promoting economic growth, Nigeria has struggled to achieve its full potential. The impact of budget implementation on economic growth remains a subject of debate and investigation.

Therefore, it is essential to analyze and assess the effect of budget implementation on economic growth in Nigeria to uncover potential challenges, gaps, and areas for improvement. This study is also aimed at examining the relationship between capital and current budget expenditure on Gross Domestic Product (GDP) of Nigeria as well as ascertain the relationship between debt and Gross Domestic Product of Nigeria in a period of 32 year (1990 – 2022) which will serve as a policy instrument to government, and guide to budget implementation through current and capital expenditure.

In puesuance of this objective, Timothy (2023) adopted ethical theory using secondary data to examine the effects of budget governance on national development. The study revealed that budget governance has been seriously abused by both legislatures and the executives and as a result gravely affects national development. It was envisioned that transparency and accountability could bear fruit if budget stakeholders, technocrats, and budget processes are opened up to greater participation of the target beneficiaries and scrutiny by the relevant institutions.

Umoh et al. (2023) explored the effect of budget padding on the Nigeria's Economy. The study involved a descriptive research design and content analysis whereby the quantitative method was adopted using secondary sources of data. Findings revealed that; the socio-economic implication of budget padding was perturbing as it affects known economic indices negatively. Also, the legislature has powers to scrutinize and approve national budgets but lack powers to insert new projects and programmes without recourse to the Executive; it is also morally and ethically wrong for the legislators to introduce new items into the budget without the consent of the budget initiators. Finally, the consequences for failure of the budget had negative impact on the implementation of strategic government projects and programmes. Following the findings, it was recommended that, to attain national development, there was need for strict adherence to the fundamental principles of good budgetary governance. Again, policy makers should ensure that budget documents and data are open, transparent, and accessible, provide for an inclusive, participative, and realistic debate on budget estimate.

Onwuka (2022) studied empirical effect of budget deficit, inflation and economic growth in Nigeria. The study made use of the disaggregated Vector Autoregression (VAR) approach to analyses the data. It was found out, amongst others, that overall deficit financing had a positive and significant impact on economic growth when financed through external sources but had a deleterious effect when financed through domestic sources. The study also found that overall deficit financing is inflationary which also resulted to a decrease in real interest rates.

Omoniyi (2022) studied the impact of budget implementation on economic performance in Nigeria. This study revealed that recurrent government expenditure has a

positive relationship with the economic growth, this implies that an increase in the units of recurrent government expenditure will lead to an increase in the economic growth of Nigeria in the period analyzed, whereas capital government expenditure has a negative relationship with the economic growth, this implies that an increase in the units of capital government expenditure will lead to a decrease in economic growth of Nigeria. These results suggest that due process was compromised at the budget implementation stage. The study recommended that government should ensure the strict adherence to due process in the implementation of its annual budgets.

Aluthge *et al.*, (2021) studied the impact of Nigerian government expenditure on economic growth using time series data. The paper employed Autoregressive Distributed Lag (ARDL) model. The key findings of the study revealed 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. The study recommended that government should increase the share of the capital expenditure especially on meaningful projects that have direct bearing on the citizen's welfare. Government should also improve the spending patterns of recurrent expenditure through careful reallocation of resources toward productive activities that would enhance human development in the country.

## 2. Materials and Methods

This section describes the methodology employed in this study; which covers the areas of Research design, Method of data collection, Sources of data collection, Techniques of data collection, Model specification and Analytical technique employed.

#### **Research** design

This study made use of correlational research design and longitudinal research design approach. The correlational research design was to determine the relationship between two or more variable while the longitudinal research design approach was used based on the fact that it involves repeated observations of the same variables over a period of time. This work adopted a secondary method of research. It involves the application of econometric techniques to examine a set of data whose outcome will answer the research questions.

#### Nature and Sources of data

Data used in this study are secondary in nature. They are annual time series data spanning the period 1990 to 2022 (32 years). The secondary data for this study shall be collected from the following sources e.g. World Bank Indicators (WDI), National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN) Statistical Bulletins in addition to Journal publications. The secondary data shall comprise of Growth rate of Real Gross Domestic Product, Government Recurrent Expenditure, Government Capital Expenditure, Total debt Service, and External Debt.

#### **Description of Variables and A-priori Expectations**

#### Dependent Variable: Growth Rate of Real Gross Domestic Product (Annual Percentage)

The growth rate of real GDP is a measure of the increase in the value of all goods and services produced in an economy over a specific period of time, adjusted for changes in prices (Hu et al., 2021). It is expressed as a percentage and is used to assess the economic performance of a country or region. A positive growth rate indicates that the economy is expanding, while a negative growth rate indicates that the economy is contracting.

#### **Independent variables:**

#### Government Capital Expenditure (Percentage of Total Government Expenditure)

This represents the funds that a government allocates for the creation, enhancement, or maintenance of physical assets and infrastructure. These assets typically have long-term value and contribute to the economic and social development of a country or region. Based on apriori expectation, GCE is expected to be positive.

#### Government Recurrent Expenditure (Percentage of Total Government Expenditure)

This refers to the day-to-day or ongoing spending by a government to cover the operational and maintenance costs of public services, programs, and institutions. It includes expenses related to the regular functioning of government agencies and the provision of essential services but does not involve investments in long-term assets or infrastructure. Recurrent expenditure is a fundamental component of a government's budget and encompasses various items such as salaries, supplies, utilities, and maintenance. Based on apriori expectation, GRE is expected to be positive.

#### External Debt Stocks (Percentage of GNI)

This refers to the total amount of debt that a country owes to foreign creditors or foreign entities. This debt includes financial obligations to governments, international organizations, commercial banks, and other entities outside the country's borders. External debt can take various forms, including long-term loans, bonds, short-term debt, and trade credits. Based on apriori expectation, EDS is expected to be positive.

#### Total Debt Service (Percentage of GNI)

This refers to the total amount of money that a borrower is required to pay to service their debt obligations over a specified period. It includes both the principal repayment and the interest payments on the debt. TDS is often used in the context of loans, mortgages, and other forms of debt to assess a borrower's ability to meet their debt repayment obligations. Based on apriori expectation is expected to be negative.

#### Model specification

Having examined various theories, this work is anchored on the Endogenous Growth Model which accounts for dynamic factors such as innovation, technological progress, and human capital development, enabling us to examine how budget implementation impacts economic growth through investments in education, research and

development, and infrastructure. Hence, in line with these and a little modification; the models adopted in this study is functionally expressed as; GRGDP = f(GCE, GRE, EDS, TDS)------(1) Where: GRGDPt =  $\beta_0 + \beta_1 GCEt + \beta_2 GREt + \beta_3 EDSt + \beta_4 TDSt + \mu t$ ------(2) GRGDP = Growth rate of Real Gross Domestic Product (Annual in Percentage) GCE = Government Capital Expenditure (Percentage of Total Government Expenditure) GRE = Government Recurrent Expenditure (Percentage of Total Government Expenditure) EDS = External Debt Stocks (Percentage of GNI) TDS = Total Debt Service (Percentage of GNI)  $\beta_0$ = Intercept (constant term)  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$  = Slope be estimated  $\mu$  = Error Term Parameters to t = Time

Table 3.2.1: Summary of the description of variables and their sources

Variable	Description	Source
GRGDP	Growth rate of Real Gross Domestic Product	WDI
GCE	Government Capital Expenditure	CBN
GRE	Government Recurrent Expenditure	CBN
EDS	External Debt Stocks	WDI
TDS	Total Debt service	WDI

# **Techniques of Data Analysis**

#### Unit Root Test

In statistics, a unit root test tests whether a times series variable is non-stationary and possess a unit root. The null hypothesis is generally defined as the presence of a unit root and the alternative hypothesis is either stationery, trends stationery depending on the test used. The unit root test is conducted first before actual model estimation. The unit root test is carried out in order to ascertain the underlying properties of the time series variables in the model. The importance of unit root test is that it enables us to avoid the problem of spurious regression output (Gujarati & Porter, 2009). In this study, the Augmented Dickey-Fuller (1981) unit root test method is utilized. The Augmented Dickey-Fuller (ADF) unit root test equation is specified as follows:

 $\Delta y_t = \omega + \delta y_{t-1} + \sum_{i=1}^m \theta_i \Delta y_{t-i} + \mu t - \dots$ (3)

Where  $\Delta$  is the first difference operator;  $y_t$  is a time series variable at current time (t);  $\omega$  is the drift term; yt-1 is the one period lagged value of yt;  $\delta$  is the coefficient of yt-1;  $\Delta yt-i$  is the lagged valued of the first difference of yt; m is the maximum lag length;  $\vartheta i$  is the coefficients of  $\Delta yt-i$ ; and  $\mu t$  is the white noise error term. The null hypothesis is such that the time series contains a unit root which implies that  $\delta=0$ . The null hypothesis is rejected if  $\delta$  is negative and statistically significant. The ADF unit root test is based on t-statistic test.

# **Hypothesis:**

H0:  $\delta = 0$  (Variable has unit root i.e.; time series is non-stationary) H1:  $\delta < 0$  (Variable do not have unit root i.e.; time series is stationary) Decision Rule: (i) If  $t \gg ADF$  critical value in absolute terms, reject the null hypothesis

(i) If  $t \ll ADF$  critical value in absolute terms, do not reject the null hypothesis

Note: t\* is the calculated value of the ADF unit root test.

# Autoregressive Distributed Lagged Model

The method of data analysis employed was based on the specific objectives of the study. ARDL analytical technique used to analyze time series data that spans between 1990 and 2022

 $\Delta GRGDP_t = \beta_0 + \beta_1 GCE_t + \beta_2 GRE_t + \beta_3 EDS_t + \beta_4 TDS_t + \beta_5 \Delta (GCE)_{t-1} + \beta_6 \Delta (GRE)_{t-1} + \beta_7 \Delta (EDS)_{t-1} + \beta_8 \Delta (TDS)_{t-1} + Ut ------(4)$ 

ARDL bounds test was used to test for a long run relationship between the variables of the study. This is based on the results from Unit root test, in which, ADF was used. The following techniques of estimation were employed in the study: In order to obtain a well-rounded result through the employment of the correct method of analysis, Unit root test was carried out on each of the variables. This was aided by Augmented Dicky Fuller (1979). The Unit root test was carried out in order to ascertain the level of integration of the variables, given that stationarity is an important assumption of any time series variable. On this ground, the results from the ADF indicated that the variables were stationary at both level and after first differencing, hence, they are I(0) and I(1) series. This necessitated the use of ARDL technique.

As concerns this, based on the ARDL bound test, the F-Statistic exceeded the 10, 5, 2.5 and 1% level of significance.

The Error Correction Model was estimated in order to examine whether or not the variables will adjust back to the long run equilibrium if there is a distortion from the equilibrium point and at what speed.

The dynamics of model in the short run is presented below:

 $\Delta \text{GRGDP}_{t} = \lambda_{0} + \sum_{i=0}^{m} \lambda_{1} \Delta \text{GRGDP}_{t-1} + \sum_{i=0}^{n} \lambda_{2} \Delta \text{GCE} + \sum_{i=0}^{m} \lambda_{3} \Delta \text{GRE} + \sum_{i=0}^{P} \lambda_{4} \Delta \text{EDS} + \sum_{i=0}^{r} \lambda_{5} \Delta \text{TDS}$ (5)  $\lambda_{1}, \lambda_{2}, \lambda_{3}, \lambda_{4}, \text{ and } \lambda_{5} \text{ are the estimated coefficients of equation 5 above. ECT is the component of the error correction term, while <math>\delta$  represents the component of the ECT, and how fast it will take for the model to adjust to the long run equilibrium, from the short run.

# Limitation of the Model

The study is strictly based on ARDL estimation technique which is not devoid of limitations. The assumption of normality is one limitation of the model; the model assumes that the error terms are normally distributed which may not always be the case. The assumption of linearity as posed by the model may also not hold in practice, hence,

non-linear relationship between variables in the model can result to misspecification. In addition, the ARDL model requires sufficiently large amount of time series data to accurately estimate the parameters of the model, if the data is limited or has missing observations, the model may produce none sense or unreliable result.

#### 4. **Results and Discusion**

In this section, line charts showing the distributions of the dependent and independents variables in their units from the study period of 1990 to 2022 respectively, the results on the descriptive statistics, Augmented Dickey Fuller (ADF) unit root test, ARDL-ECM Model and decisions are presented below.

#### **Trend Analysis**



# Figure 4.1: A Line chart showing distribution of Nigeria's Growth rate of Real GDP, Inflation rate, Gross Fixed Capital Formation (Annual %) from 1990 – 2022 Source: Authors' computation 2023

Figure 4.1 presents the graphical trends of Growth Rate of Real GDP, Inflation rate, and Lending Interest rate from 1981-2021. It is evident in the figure that GRGDP have increased and decreased over the period of study, reaching negative growth in some periods. GRGDP exactly reached negative growth in 1993, 2000, 2016, 2020, among others. This was based on the economic upheavals that were eminent as at those periods, especially the outbreak of COVID-19 that became an economic vice in the early period of 2020, resulting to negative growth. GRGDP experienced its peak during 2002.



Figure 4.2: A Line chart showing distribution of Nigeria's Government Capital Expenditure and Government Recurrent Expenditure (Annual %) from 1990 – 2022

Source: Authors' Computation 2023

Figure 4.2 presents the graphical trend of Government Capital Expenditure and Government Recurrent Expenditure from 1990 to 2022. It can be seen that GCE and GRE were at two periods; 1996 and 2020. Also, it can be seen that they both moved in opposite directions i.e GCE rises as GRE falls and vice versa.



External Debt Stocks (%) from 1990 – 2022

Source: Authors' Computation 2023

Figure 4.3 shows the graphical trend of Nigeria's External Debt Stocks (%) from 1990 to 2022. It can be seen that EDS, which stood at 65.41% in 1990 rose to 12.1% in 1993. EDS expressed a downward trend from 1993 to 2006, where it stood at 5.6%. It then expressed an upward trend from 2006 to 2022.



Figure 4.4: A Line chart showing distribution of Nigeria's Total Debt Service (%) from 1990 – 2022

Source: Authors' Computation 2023

Figure 4.4 shows the graphical trend of Total debt service in Nigeria from 1990 to 2022. It can be seen that total debt service expressed a downward trend from 1990 to 2004 where it stood at 1.4%. It rose sharply to 5.4% in 2005 and then experienced a decline in 2006 to 0.4% in 2006, where it reached its minimum. TDS then expressed an upward trend from 2004 to 2022.

# **Descriptive Statistics**

	GRGDP	EDS	GCE	GRE	TDS
Mean	4.287737	34.25472	31.5487	64.64784	2.342616
Median	4.230061	17.87779	27.105	68.43596	1.659825
Maximum	15.32916	120.8353	63.43812	80.28625	6.521339
Minimum	-2.035119	4.950816	11.15648	36.56188	0.100218
Std. Dev.	3.958301	31.70346	14.47075	11.93791	2.072707
Skewness	0.465009	0.984258	0.880806	-1.076902	0.766409
Kurtosis	3.389531	3.18288	2.823255	3.389848	2.221782
Jarque-Bera	1.397917	5.374186	4.309957	6.587423	4.063338
Probability	0.497103	0.068079	0.115906	0.037116	0.131116
Sum	141.4953	1130.406	1041.107	2133.379	77.30631
Sum Sq. Dev.	501.3807	32163.5	6700.888	4560.441	137.4756
Observations	33	33	33	33	33

Source: Authors' Computation 2023

Table 4.1 presents the descriptive statistics of the variable data. It shows the mean, median, maximum, Minimum, standard deviation, skewness and kurtosis of all the variables. The Skewness statistic which shows the degree of asymmetry observed in a frequency distribution revealed that GRGDP, EDS, GCE, GRE, TDS was positively skewed. The Kurtosis statistic which depicts the flatness of the graph of a frequency distribution revealed that GRGDP, EDS, GCE, TDS, GRE are normally distributed.

#### Augmented Dickey-Fuller (ADF) Unit Root Test

Since the seminar work of Granger and Newbold (1974) on possible spurious regression among non-stationary variables, testing for the unit root test has been greatly developed in the time series approach data series. The unit root testing result shown on the table 4.4.1.

Series	ADF Test	1% Critical	5% Critical	10% Critical	Prob	Order of
	Statistics	value	Value	Value	Value	integration
GRGDP	-3.597445	-4.273277	-3.557759	-3.212361	0.0460	1(0) Stationary at
GCE	-6.338668	-4.416345	-3.622033	-3.248592	0.0002	1(1) Stationary at 1 <sup>st</sup> diff.
GRE	-5.157960	-4.416345	-3.622033	-3.248592	0.0021	1(1) Stationary at 1 <sup>st</sup> diff.
EDS	-5.614650	-4.284580	-3.562882	-3.215267	0.0004	1(1) Stationary at 1 <sup>st</sup> diff.
TDS	-5.474236	-4.309824	-3.574244	-3.221728	0.0006	1(1) Stationary at 1 <sup>st</sup> diff.

Table 4.2: Augmented Dickey-Fuller (ADF) Unit Root Test

**Source:** Authors' computation 2023

The results of unit root test shown on table 4.2 above revealed that all the absolute values of ADF test statistics are greater that their critical values at 5% as well as probability values of the probability benchmark is stationary at 5% and implying that

GRGDP, GCE, GRE, EDS, TDS are all stationary at 5%. Their order of cointegration (stationarity level) were; 1(0), I(1), I(1), I(1) and I(1) respectively. Since the integration is in mixed order, it is important to adopt ARDL analytical technique.

# ARDL Co-integration Test Analysis

From the unit test above, it indicates that the variable has an integrated order of 1(0) and 1(1), therefore, to test the long run relationship, Auto-regressive Distribution Lag (ARDL) Bound test for co-integration shall be used.

<b>T-Statistic</b>	Value	Significance Level	I(0)	I(1)	
F-statistic	8.214306	10%	2.2	3.09	
k	4	5%	2.56	3.49	
		2.5%	2.88	3.87	
		1%	3.29	4.37	

Table	4.3:	Autoregressiv	e Distributi	ve Lag N	Iodel: F-	<b>Bound Test</b>

Source: Authors' Computation 2023

Table 4.3 shows that the F-Statistic given by 8.214306 is greater than the upper and lower bounds at 10%, 5%, 2.5% and 1% level of significance. This implies that the variables are bound by a long run relationship. To put in another word, the variables in the model are tied to a long run relationship. This necessitates the study to carry out an ARDL long run estimate to ascertain how the various explanatory variables impact on the growth rate of Real GDP in the long run. The Long run estimate of ARDL is presented below:

#### Estimate of the Long-Run Coefficients Dependent Variable: GRGDP Table 4.4: Long Run Coefficients

Table 4.4. Long Run Coefficients							
Variable	Coefficient	Std. Error	t-Statistic	Prob.			
GCE	1.074779	0.424391	2.532522	0.0351			
GRE	1.186077	0.445368	2.663136	0.0287			
EDS	-0.021492	0.051748	-0.415317	0.6888			
TDS	-1.829722	1.214490	-1.506577	0.1703			
С	-102.8412	40.23111	-2.556261	0.0338			

Source: Authors' computation 2023

The long-run coefficient revealed that Agricultural output has positive impact on economic growth in Nigeria as proxy by (GRGDP) and was statistically significant at the critical value of 0.05. This is based on the fact that its probability value exceeds 5% level of significance, given by 0.55. Also, it can be seen that GCE and GRE had a positive and significant impact on economic growth in the long run. A percentage increase in GCE will bring about a 1.07% significant increase in economic growth in the long run. In addition, a percentage increase in GRE will bring about a 1.19% significant increase in economic growth in the long run. A 1% increase in EDS will bring about a 0.021% insignificant decrease in economic growth in the long run. It was insignificant because its probability value was greater 0.05. Also, an increase in TDS will

bring about a 1.83% decrease in economic growth in the long run, and it was statistically insignificant.

Table 4.5: Error Correction Term and Error Correction Model Analysis						
Variable	Coefficient	Std. Error	t-Statistic	Prob.		
D(GCE)	0.405960	0.105879	3.834199	0.0050		
D(EDS)	-0.031575	0.047120	-0.670110	0.5217		
D(GRE)	0.420662	0.098466	4.272173	0.0027		
D(TDS)	-1.912314	0.316190	-6.047997	0.0003		
CointEq (-1) *	-0.652968	0.128834	-8.949273	0.0000		
R-squared		0.911242	Mean dependent	var 0.182303		
Adjusted R-squa	red	0.808829	S.D. dependent va	ar 3.335461		
S.E. of regressio	n	1.458366	Akaike info criter	rion 3.893613		
Sum squared resid		27.64882	Schwarz criterion	4.647983		
Log likelihood		-40.45738	Hannan-Quinn cr	iteria. 4.129872		
Durbin-Watson stat		2.190987				
Source: Author's computation 2023						

ARDL Short run test	
Table 4.5: Error Correction Term and Error Correction Model Analys	i

**Source:** Author's computation 2023

## **Error Correction Term**

The lagged coefficient of Coint Eq (-1) of the error correction model as shown in table 4.4.3 is the error correction term. This is in line with theoretical expectation that demands that it should be negative and statistically significant. The coefficient of model which is (-0.65) showed a path of adjustment which implies that only (0.65%) of shortrun disequilibrium in GDP is corrected in the long run.

# **Error Correction Model**

In the final analysis, the R-squared (0.911242) and adjusted R-squared (0.808829) result in table 4.5 revealed that the relationship between budget implementation and economic growth is (91.12%) across the period and (80.88%) of the variation in GRGDP is explained by the variables employed in Nigeria. The Durbin-Watson stat value of 2.19 verifies that no serial correlations in the model in Table 4.4.3

# **Post Estimation Diagnostic Tests**

#### **Table 4.6: Summary of Diagnostic Test Result**

Test	<b>F-Statistic</b>	<b>Probability Value</b>
Jarque-Bera	0.754124	0.685874
<b>Breusch-Godfrey Serial Correlation LM Test:</b>	3.081903	0.1200
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.759177	0.7090
Ramsey RESET	0.692973	0.4326

Source: Authors' Computed 2023



From the pormal distribution. This notion is based on the fact the orror based on the fact the probability value 2020 f the Jarque-Bera Statistics is greater than the conventional level of the statistic of the statistic of the statistic of 3.081903 and a probability value of 0.1200, the Breusch-Godfrey Serial Correlation LM Test indicates that the model is free from serial correlation. The Heteroskedasticity Test: Breusch-Pagan-Godfrey which is given by its F-Stat and probability value of 0.7592 and 0.7090 respectively, shows that the model is Homoscedastic and that the error terms have constant variance. Lastly, considering the F-statistic and probability value of the Ramsey RESET test which were 0.6930 and 0.4326 respectively, it follows that there is no specification error in the model. Overall, the model passes all the test as evidenced in the findings above.

# Stability Test

Cumulative Sum of Square (CUSUM) and Cumulative Sum of Square Residual (CUSUMQ) will be conducted so as to ascertain the fit of the model. CUSUM represents the total amount of variation in the data that is explained in the model while CUSUMQ represents the amount of variation that is not explained by the model.

#### **NO FIGURE SHOWN**

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Author's Computation using E-views 10

The figure 4.5 avails that the recursive errors lie in-between the critical line at 5% significance level. This shows that the residual variance is stable.

## Figure 4.6: Cumulative of Sum of Squares Residual (CUSUMQ)

Source: Author's Computation 2023

Looking at the CUSUMQ test result, it can be deduced that the recursive error falls in-between the critical line at 5% significance level. This result shows that the model is stable.

# Hypothesis Testing

# H<sub>01</sub>: Public Capital Expenditure has no significant impact on Economic Growth in Nigeria

The finding of the study based on the Error Correction Model (ECM) shows that Government Capital Expenditure (GCE) have a significant impact on Economic Growth (GRGDP), given its coefficient and probability values of 0.405960 and 0.0050 respectively. Therefore, we reject the null hypothesis (HO1) and conclude that government recurrent expenditure has a significant impact on economic growth.

# H<sub>02</sub>: Public Recurrent Expenditure has no significant impact on Economic Growth in Nigeria.

The finding of the study based on the Error Correction Model (ECM) shows that Government recurrent Expenditure (GRE) have a significant impact on Economic Growth (GRGDP), given its coefficient and probability values of 0.420662 and 0.0027 respectively. Therefore, we reject the null hypothesis (HO2) and conclude that government recurrent expenditure has a significant impact on economic growth.

# H<sub>03</sub>: External Debt has no significant impact on Economic Growth in Nigeria.

The finding of the study based on the Error Correction Model (ECM) shows that External Debt Stocks (EDS) has a negative and insignificant impact on economic growth in Nigeria, given its coefficient and probability values of -0.031575 and 0.5217.

Table 4.4.3 shows that government capital expenditure has a positive and significant impact on economic growth in the short run. In other words, an increase in GCE by 1% will bring about a 0.41% increase in GRGDP and it was statistically significant at 1% level (P=0.0050<0.010). This is in line with the a priori expectation. This indicates that investments in infrastructure projects, such as roads, bridges, schools, healthcare facilities, and public utilities, have a substantial impact on the overall economic development of Nigeria. These investments not only enhance the quality of life for citizens but also contribute to the expansion of economic activities. Also, an increase in government recurrent expenditure by 1% will bring about a 0.42% increase in economic growth in the short run and it was statistically significant at 1% level (P=0.0027<0.01). This is in line with the a priori expectation. Government recurrent expenditure often includes spending on education, healthcare, and other social services. A positive and significant relationship between recurrent expenditure and economic growth suggests that investments in human capital development, such as education and healthcare, are crucial for long-term economic development. This implies that a well-educated and healthy workforce can be a significant driver of economic growth.

Conversely, an increase in external debt stocks by 1% will bring about a 0.0325% increase in the short run and it was statistically insignificant in the short run (P=0.5217>0.05). This negates the a priori expectation. The negative and insignificant relationship between external debt and economic growth implies that there may be challenges related to the management and utilization of external debt. It suggests that the debt incurred may not have been effectively invested in projects and activities that generate substantial economic growth.

Lastly, an increase in total debt service by 1% will bring about a 1.91% decrease in economic growth and it was statistically significant at 1% level (P=0.0003<0.01). This is in line with the apriori expectation. The negative and significant relationship between external debt and economic growth suggests that Nigeria may be experiencing challenges related to debt sustainability. It implies that the country's level of external debt, or the terms of that debt, may be burdensome, diverting resources away from productive uses and hindering overall economic growth.

#### 5. Conclusion and Recommendations

This study has evaluated the impact of budget implementation on economic growth in Nigeria using the data that ranges from 1990 to 2022. The study adopted a combination of the qualitative and quantitative techniques for data analysis by describing the variables using graphs and presenting an econometric analysis of the data. The specific objectives that the study achieved include to examine the impact of public capital expenditure on economic growth in Nigeria, to examine the impact of public government expenditure on the economic growth in Nigeria, and to examine the impact of external

debt on economic growth in Nigeria. The econometric analysis that was carried out included the descriptive statistics of the variables as well as their correlation matrix, the Augmented Dickey Fuller was used to test for the stationarity of the variables, the ARDL co-integration test, the ARDL long run test as well as the ECM were all used to investigate the relationship between the variables (dependent and independent variables).

The data for the analysis were from secondary sources gotten from Central Bank of Nigeria (CBN) Statistical Bulletin and World Development Indicators (WDI). The methodology of the study comprised of a single model which includes Growth rate of GDP (GRGDP), Government Recurrent Expenditure (GRE), Government Capital Expenditure (GCE), External Debt Stocks (EDS), and Total Debt Service (TDS). The ARDL Bounds test indicates that GCE and GRE have a significant long run relationship with GRGDP while EDS and TDS exhibited an insignificant long run relationship with GRGDP. On the same hand, the short run test result revealed that all variables, with the exception of EDS, have a significant impact on economic growth. In addition, The ECM was also correctly signed to show that any disequilibrium does not hesitate to correct back to equilibrium.

In light of the research findings, which indicate a positive and significant impact of both public capital expenditure and public recurrent expenditure on economic growth in Nigeria, it is evident that government spending is a key driver of economic development in the country. The positive relationship between public capital expenditure and economic growth underscores the critical role of infrastructure development, education, healthcare, and other essential projects. These investments stimulate economic activity, create jobs, and enhance the country's overall productive capacity. Furthermore, they establish a foundation for sustainable economic growth by improving the quality of life and creating an environment that attracts private sector investments.

The positive impact of public recurrent expenditure on economic growth highlights the importance of human capital development and social services. Investments in education, healthcare, and public administration contribute to a more skilled, healthy, and efficient workforce. They lead to increased productivity, reduced poverty, and improved living standards. This finding underscores the significance of well-managed public administration and targeted spending on areas that directly impact the welfare of the Nigerian population.

In conclusion, the research highlights the critical role of government spending in driving economic growth in Nigeria and underscores the need for a well-structured and efficient allocation of resources to ensure long-term prosperity and improved living standards for the country's citizens.

Based on these findings that indicate the positive and significant impact of both public capital expenditure and public recurrent expenditure on economic growth in Nigeria, here are some policy recommendations:

1. Policymakers should prioritize strategic investments in infrastructure development. This includes roads, bridges, energy, and other critical facilities. Infrastructure projects should be well-planned and efficiently executed to stimulate economic activity, improve logistics, and create jobs.

- 2. Emphasize by the Government and corporate entity should be on investments in human capital development by improving the quality and accessibility of education and healthcare. This should include reforms in the education system to ensure it meets the needs of the job market and healthcare policies that promote better health outcomes.
- 3. The Government should Carefully manage external and domestic debt to ensure have a direct and positive impact on economic growth and avoid excessive debt burdens that can hinder long-term development.

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