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IMPACT OF PUBLIC EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA 1981-2022.

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Abstract

Public expenditure is a policy that permits the government to use its budgetary plans to achieve both desired and undesirable outcomes, such as the provision of infrastructure facilities, the reduction of poverty, the creation of jobs, and poor health care, education, and unemployment. Thus, this study reexamined how public spending affects Nigeria's economic expansion. It investigated the impact of capital expenditure, recurring expenditure, internal debt, and external debt on real gross domestic product (RGDP) using the non-linear autoregressive distributed Lag (NARDL) model. For the years 1981–2022, annual time series data were used. The main conclusions showed that capital spending had a strong asymmetric impact on real GDP over the long and short terms. From the findings, a 1% increase in capital expenditure in Nigeria resulted in a 0.19% rise in real GDP, causing a disproportionate shift in economic growth. Since an increase in public spending caused Nigeria's real GDP to rise by 19% at a significant level of 5%, the study suggests that capital expenditure is a key factor in determining economic growth. This indicates that capital expenditure is the primary driver of any economic expansion. As a result, sufficient funds ought to be allocated to development initiatives like building roads, dams, power plants, and industries.

Keywords: Public Expenditure, Real GDP, Internal Debt, External Debt and NARDL Model'

1. Introduction

The relationship between fiscal policy variables and economic growth has been a subject of extensive research, particularly in developing economies like Nigeria. As a nation rich in natural resources but often challenged by structural and institutional inefficiencies, understanding the dynamics of capital expenditure, recurrent expenditure, and debt management on real gross domestic product (GDP) is crucial for sustainable development (Ajakaiye & Nkurunziza, 2007; Ojo, 2018).

Capital expenditure, which involves investments in infrastructure and other development projects, plays a vital role in enhancing the productive capacity of an economy (Adeyemi & Olayiwola, 2019). Recurrent expenditure, encompassing operational costs like salaries and subsidies, ensures the functioning of government services and is essential for the stability of the public sector (Eze & Mba, 2021). Both types of expenditure are financed through a mix of domestic revenue and borrowing, with Nigeria's reliance on internal and external debt significantly influencing fiscal sustainability (Ogun, 2015).

Nigeria has struggled over the years to strike a balance between fiscal policies that support growth and debt sustainability. If not properly managed, internal debt—which is sometimes seen as a safer financing option—can displace private investment

(Ogun & Abiola, 2020). However, external debt exposes the nation to currency rate risks and worldwide economic shocks while providing access to international capital (Onoh, 2010). Therefore, controlling these fiscal factors in a way that promotes economic expansion without jeopardizing long-term stability is the difficult part (Ogun & Adebayo, 2014).

This study aims to explore the impact of capital expenditure, recurrent expenditure, and internal and external debt on Nigeria's real GDP. By analyzing their individual and combined effects, the research seeks to provide insights into how fiscal policy can be optimized to promote economic growth and stability. Understanding these dynamics is essential for policymakers to design strategies that align fiscal priorities with Nigeria's long-term development goals (Ajao & Abiola, 2021).

Many of the relationships between the macroeconomic variables are not symmetric or linear. "Nonlinearity is widespread within the social sciences, and the asymmetry is fundamental to the human condition," as Shin et al. (2014) stated. The majority of research has discovered symmetric or linear coefficients in the link between public expenditures and economic growth that are inconsistent with reality. This study examines the relationship between public expenditure and economic growth, attempting to close the highlighted gap within realistic bounds. The unequal long- and short-term links between public expenditures and economic growth in Nigeria are examined in this study.

The non-linear autoregressive distributed lagged (NARDL) model was created by Shin et al. (2014) to examine the relationship between the variables under investigation. This work is significant because it will provide Nigerian policymakers a roadmap for creating sensible macroeconomic strategies. This will help the government to figure out how to spend more money and allocate it to worthwhile economic endeavors for the advancement of the economy.

Reexamining the actual relationship between public expenditures and economic growth in Nigeria is the primary objective of this paper. This paper has two separate goals which are to examine the nature of the long-run and the short-run relation between components and disaggregated public expenditure and their impact on economic growth and to re-investigate the asymmetric relationship between components and disaggregated public expenditure and their impact on Nigeria's economic growth.

2. Literature Review

This section provides a review of relevant literature on the relationship between capital expenditure, recurrent expenditure, internal and external debt, and their impacts on Nigeria's real GDP. The review is divided into three sections:

2.1 Conceptual Definitions

The concepts of capital expenditure, recurrent expenditure, and debt are central to understanding fiscal policy and its impact on economic growth in Nigeria.

Capital Expenditure: Capital expenditure refers to government spending on long-term investments such as infrastructure, machinery, and development projects aimed at enhancing the productive capacity of an economy. These investments are expected to generate long-term returns and contribute to economic growth (Ajakaiye & Nkurunziza, 2007). In Nigeria, capital expenditure is seen as vital for addressing infrastructure deficits and supporting economic diversification (Adeyemi & Olayiwola, 2019).

Recurrent Expenditure: Recurrent expenditure, on the other hand, includes government spending on short-term operational costs such as salaries, pensions, and subsidies. While necessary for the functioning of government services, high recurrent expenditure can limit resources available for capital projects, potentially crowding out growth-promoting investments (Ogun & Adebayo, 2014).

Debt: Public debt is typically divided into internal and external debt. Internal debt is sourced from within the country, often through the issuance of government

bonds, while external debt is borrowed from foreign creditors. The management of both types of debt is critical, as excessive debt accumulation can lead to debt servicing challenges and impact fiscal sustainability. Debt can either stimulate economic growth if invested wisely or become a burden if it leads to debt overhang (Onoh, 2010).

2.2 Theoretical Framework

Several economic theories explain the role of government expenditure and debt in shaping economic growth.

Keynesian Theory: Keynesian economics emphasizes the role of government spending in stimulating aggregate demand, particularly during periods of economic downturn. According to Keynesians, both capital and recurrent expenditure can boost demand and contribute to economic growth. Capital expenditure can enhance long-term productivity, while recurrent expenditure supports short-term stabilization (Ogun & Abiola, 2020). The theory suggests that government intervention through spending is essential in stimulating economic activity, especially in developing economies like Nigeria.

Ricardian Equivalence: This theory suggests that government borrowing (whether through internal or external debt) does not affect overall economic growth because individuals anticipate future tax increases to pay for the debt and adjust their savings behavior accordingly. If valid, this would imply that debt does not significantly impact economic growth as long as there is an expectation of future fiscal adjustments (Ojo, 2018).

Debt Overhang Theory: This theory posits that high levels of debt can hinder economic growth, especially if a country is already overburdened with debt obligations. In the case of Nigeria, both internal and external debt could potentially lead to debt overhang, where the country's capacity to invest in growth-enhancing projects is diminished by the need to service existing debt (Onoh, 2010).

Crowding Out Effect: The crowding out hypothesis suggests that government borrowing, especially through internal debt, may lead to a reduction in private sector investment due to the increased demand for funds in the financial markets. This, in turn, may slow down overall economic growth (Ogun & Adebayo, 2014).

2.3 Empirical Literature

Numerous studies have examined the relationship between government expenditure, debt, and economic growth, particularly in the context of Nigeria. Empirical research on Nigeria offers diverse insights into the impact of fiscal policy on real GDP.

Olukayode, Babajide, Adeteji, and Bamidele's (2022) study looks at several macroeconomic factors and government spending in Nigeria between1986 - 2020. The study's results, which were obtained using the Bayesian autoregressive technique, show that recurring spending has a large and long-term influence on economic growth, but capital investment has little to no positive effect. They recommended that government should impose some control on capital spending because it has the potential to exacerbate the state of the economy.

Nnamocha and Anyanwu (2022) investigate the performance of a few selected macroeconomic variables in Nigeria (1981–2018) in connection with government spending. The study employed the Error Correction model to analyze the data and the findings show that government capital spending boosted economic growth (as indicated by the RGDP) but had a negative influence on the rates of inflation and unemployment. On the other hand, there was a positive relationship between economic growth, unemployment, and inflation and government recurrent expenditure. The study concludes that government expenditure and the selected macroeconomic growth variables-real GDP, the unemployment rate, and the inflation rate in Nigeria-have a significant link.

Kolapo et al. (2021) investigated whether Wagner's law is still relevant from 1986 to the present and how government spending impacts economic

growth in sub-Saharan Africa. The study utilized a panel autoregressive distributed lag (ARDL) model and a pairwise causality method. Wagner's law was invalidated in the sub-Saharan region by the data, which shows that government spending supports economic growth and that capital and ongoing expenses have a negative impact on it.

Ogbu and Lucy (2020) investigate the effects of Nigerian fiscal policy on several important macroeconomic variables between1981 to 2016. The auto regressive distributed lag (ARDL) model and the unconstrained error correction model (UECM) served as the foundation for the bound test method used in the study. The study finds that borrowing and expenditure by the government both statistically and significantly impact GDP. Additionally, it was discovered that government spending has a huge impact on unemployment. Consequently, the study recommended that public spending should be increased rather than decreased and that a careful reevaluation of fiscal policies is necessary from 1970 to 2016.

The work of Onodugo et al. (2017), which used the OLS method to analyze the instance of Nigeria, also covered the impact of public expenditure on real GDP. The authors concluded that investments in private and public sectors could serve as a medium-to long-term accelerator for lowering unemployment. Public expenditure, however, promote economic growth by increasing the level of output and job creation. The study was in conformity with d'Agostino et al. (2018), who verified that public expenditure enhances economic growth.

Felix (2008) conducted a comparative study between South Africa and Nigeria to examine the effects of external debt on economic growth. The study investigated the effects of debt on investment and growth, both linear and non-linear model were used. The study utilized both generalized least squares (GLS) and ordinary least squares (OLS), and the outcome of the study demonstrates that external debt has a negative effect on GDP in Nigeria and a positive influence on GDP in South Africa.

3. Methodology

The ex-post facto design is the chosen research design for this investigation. This method is distinguished by the researcher's incapacity to alter the data being studied. Ex-post facto, or "causal comparative research," as defined by Kerlinger (1973), explores possible cause-and-effect connections between dependent and independent variables.

The study's time series data came from the Central Bank of Nigeria's Statistical Bulletins and the World Development Indicators for the years 1981–2022. This study examined the relationship between public expenditure and economic growth in Nigeria using the non-linear autoregressive distributed lag (non-Linear ARDL) model. The study used the Augmented Dickey Fuller (ADF) and Phillips perron (pp) tests to make sure all variables are stationary and to avoid the false regression problem associated with unit roots.

3.1 Model Specification

This work builds on the work of Abdullaziz & Ibrahim (2016) in Bangladesh, who used nonlinear ARDL models built by Shin et al. (2014). The study's nonlinear ARDL model accounts for the unbalanced short- and long-term relationships between public spending and real GDP growth. The study also used the NARDL model to examine the short- and long-term imbalances for the Nigerian economy using annual data from 1981 to 2022. According to its goals, the model used in this study is based on the ideas of Keynesian Theory and an adaption of the model developed by Abdullaziz and Ibrahim (2016).

There model is specifying as follows:

$$RGDP_t = \beta_0 + \beta_1 RHE_t + \beta_2 CHE_t + \beta_3 REE_t + \beta_4 CEE_t + \mu_t - - \quad --(1)$$

Where; RGDP = Real growth domestic product, RHE = Recurrent health expenditures, CHE = Capital health expenditures, REE= Recurrent education expenditure, β_1 to β_4, = Coefficients of all independent variables, β_0 = Intercept or autonomous parameter estimates for the

variables. This model was adapted and modified in order to accommodate our variables as follows: The parameterized model is presented in equation 2.

$$RGDP = \beta_0 + \beta_1 CEXP_t + \beta_2 REXP_t + \beta_3 IDBT_t + \beta_4 EDBT_t + \mu_t ------ (2)$$

Where: RGDP is real gross domestic product, CEXP is capital expenditure, REXP is recurrent expenditure IDBT internal debt and EDBT is external debt rate. β_0 is Constant parameter, B_1 … β_4 are parameters of explanatory variables and μ is error term.

Equation 2 is re-parameterizing this model in an asymmetric NARDL form inspired by Shin and Greenwood-Nimmo (2014) in equation 3.

$$\Delta lnRGDP_t = \alpha_0 + \alpha_1 lnRGDP_{t-1} + \alpha_2 ln\text{CEXP}_{\text{t}}^{+\text{ve}}{}_{t-1} + \alpha_3 ln\text{CEXP}_{\text{t}}^{-\text{ve}}{}_{t-1} + \alpha_4 ln\text{REXP}_{\text{t}}^{+\text{ve}}{}_{t-1} + \alpha_5 ln\text{REXP}_{\text{t}}^{-\text{ve}}{}_{t-1} + \alpha_6 ln\text{IDBT}_{\text{t}}^{+\text{ve}}{}_{t-1} + \alpha_7 ln\text{IDBT}_{\text{t}}^{-\text{ve}}{}_{t-1} + \alpha_8 ln\text{EDBT}_{\text{t}}^{+\text{ve}}{}_{t-1} + \alpha_9 ln\text{EDBT}_{\text{t}}^{-\text{ve}}{}_{t-1} + \sum_{i=1}^{p} \beta_1 \Delta lnGDP_{t-i} + \sum_{j=0}^{p} \beta_2 \Delta ln\text{CEXP}_{\text{t}}^{+\text{ve}}{}_{t-i} + \sum_{j=0}^{p} \beta_3 \Delta ln\text{CEXP}_{\text{t}}^{-\text{ve}}{}_{t-i} + \sum_{j=0}^{p} \beta_4 \Delta lnnREXP_{\text{t}}^{+\text{ve}}{}_{t-i} + \sum_{j=0}^{p} \beta_5 \Delta ln\text{REXP}_{\text{t}}^{-\text{ve}}{}_{t-i} + + \sum_{j=0}^{p} \beta_6 \Delta ln\text{IDBT}_{\text{t}}^{+\text{ve}}{}_{t-i} + \sum_{j=0}^{p} \beta_7 \Delta ln\text{IDBT}_{\text{t}}^{-\text{ve}}{}_{t-i} + \sum_{j=0}^{p} \beta_8 \Delta ln\text{EDBT}_{\text{t}}^{+\text{ve}}{}_{t-i} + \sum_{j=0}^{p} \beta_9 \Delta ln\text{EDBT}_{\text{t}}^{-\text{ve}}{}_{t-i} + ECT_{t-1} + \varepsilon_t ----------.(3)$$

In equation 3, the positive coefficients (α_1 to α_9) indicate positive changes (increase) in the independent variables on dependent variable. Conversely, negative coefficients represent the effect of a negative change (decrease) in the respective explanatory variables. These coefficients capture the long-run impacts.

Data for this paper are generated from different sources. Data on economic growth proxy by RGDP, capital expenditure, recurrent expenditure are generated from World Development Indicators (WDI). Why internal debt and external debt are generated from CBN yearly Bulletin.

4. Results and Discussion

Table 1: Summary statistics for the Model

Statistic	RGDP	CEXP	REXP	IDBT	EDBT
Mean	38024.81	4101.608	1901.598	3303.877	2.9500
Median	26182.87	318.2277	638.0500	1091.500	2.0700
Maximum	75768.95	39763.30	9145.200	21750.00	9.0000
Minimum	13621.79	4.082900	4.750800	11.20000	6.5000
Std. Dev.	21307.78	8352.285	2489.142	4926.917	2.1900
Skewness	0.603106	2.855015	1.384973	1.950494	1.3628
Kurtosis	1.725421	10.99960	3.992210	6.487477	3.6614
Jarque-Bera	5.389120	169.0467	15.14989	47.91537	13.7671
Probability	0.067572	0.000000	0.000513	0.000000	0.0010
Observations	42	42	42	42	42

Source: Author's computation using Eviews13

Table 1 show that real GDP has a high mean value of N38024.81 billion, with the range value between 13621.79 to 75768.95. capital expenditures have a high mean value of N4101.61 billion, with the range between 4.0829 to 39763.30 and recurrent expenditures have a high mean value of N1901.60 billion, ranging from 4.7508to 9145.200. This demonstrates that during the study period, the values of RGDP, CEXP, and REXP are exceptionally high. Both internal and external debts have high mean values; the external debt value is particularly high, with 2.9500Billion and N3303.877, respectively. This demonstrates that Nigeria spent a significant amount of money during the study period paying off its external debt, which will have a big effect on the country's economic growth. Nigerian governmental expenditure throughout the research period appears to be directed toward the payment of external debt, as

evidenced by the maximum values of real growth domestic product, capital expenditure, recurrent expenditure, internal debt, and external debt, which are all quite high. This is detrimental to the expansion of the Nigerian economy.

The outcome demonstrates that all variable standard deviation values are large. This indicates that every variable's value falls within the mean. Given that all of the values fall between -0.5 and 0.5, the skewness result indicates that all of the variables are reasonably symmetrical. The outcome also shows that some variable kurtosis values above three thresholds, while one variable has a value less than three.

Table 2:*Unit Root Tests*

Panel A: Augmented Dickey-Fuller (ADF)					
	LEVEL		FIRST DIFFERENCE		
Variable	Constant	Trend and constant	Constant	Trend and constant	I(d)
RGDP	0.7710	10.4641***	10.5727	10.4641	I(0)
	(0.8164)	(0.0001)	(0.0000)	(0.0000)	
CEXP	0.7710	5.1985***	10,5727	10.4641	I(0)
	(0.8641)	(0.0001)	(0.0000)	(0.0000)	
REXP	1.9818	0.2339	7.9761***	8.4832	I(1)
	(0.2933)	(0.9900)	(0.0000)	(0.0000)	
IDBT	2.5696	0.0829	14.4712***	14.6766	I(1)
	(0.1076)	(0.9935)	(0.0000)	(0.0000)	
EDBT	2.6141	2.7911	6.6950***	6.3410	I(1)
	(0.0984)	(0.2085)	(0.0000)	(0.0000)	
Panel B: Phillips- Perron (PP)					
RGDP	1.6239	0.5.9290**	20.0537	25.1096	I(0)
	(0.4588)	(0.0001)	(0.0001)	(0.0000)	
CEXP	1.6293	5.9290**	20.0537	25.1097	I(0)
	(0.4588)	(0.0001)	(0.0001)	(0.0000)	
REXP	1.9499	0,4261	7.9340***	8.7040	I(1)
	(0.3070)	(0.9832)	(0.0000)	(0.0000)	
IDBT	2.1787	2.7603	12.8703***	15.6776	I(1)
	(0.2168)	(0.2305)	(0.0000)	(0.0000)	
EDBT	2.6309	2.7301	9.0858***	11.1717	I(1)
	(0.0951)	(0.2306)	(0.0000)	(0.0000)	

Source: Author's computation using EViews13

In Table 2, stationary test results show mixed order of integration for the above two tests used. While ADF output and PP has no significantly different from each order, the two tests complement each other to improve robustness and fitness of the NARDL equation.

Table 3: Bound Cointegration Test

NARDL Bound Test			
F-Statistic	I(0)	I(1)	Significance
12.9821**	2.460	3.460	10%
	2.947	4.088	5%
	4.093	5.532	1%

Source: Author's computation using EViews13

In table 3, the significant F-statistic which is higher than the upper bound at 5% level shows the variables are co-integrated; hence, the long and short run estimates of NARDL equations can be analyzed.

Table 4: NARDL Estimation

Long Run Estimates				
Variable	Coefficient	t-Statistic	Prob	Wald Test
LCEXP_POS	0.1943	2.0268	0.0517	H0: No asymmetry
LCEXP_NEG	-0.2087	-2.2997	0.0286	21.0360
LREXP_POS	0.1506	0.8465	0.4039	(0.0000)
LREXP_NEG	-1.2556	-0.6475	0.5222	
LIDBT_POS	0.5145	2.1414	0.0405	
LIDBT_NEG	-0.3926	-1.1727	0.2501	
LEDBT_POS	0.1561	1.8524	0.0738	
LEDBT_NEG	0.0150	0.1885	0.8517	
C	9.2445	28.4261	0.0000	
Short run Estimates				
Variable	Coefficient	t-Statistic	Prob	
C	12.19806	6.989226	0.0000	
D(LCEXP_NEG)	0.029087	0.771735	0.4503	
D(LREXP_POS)	-0.231701	-1.045863	0.3095	
D(LREXP_POS(-1))	0.269266	1.100940	0.2854	
D(LREXP_NEG)	-2.741957	-1.152245	0.2643	
D(LREXP_NEG(-1))	-1.842497	-2.697386	0.0147	
D(LIDBT_POS)	-0.388310	-1.199128	0.2460	
D(LIDBT_POS(-1))	-1.394738	-3.979240	0.0009	
D(LIDBT_NEG)	-0.074797	-0.504190	0.6202	
D(LEDBT_POS)	0.015116	0.132928	0.8957	
D(LEDBT_NEG)	0.055118	0.423110	0.6772	
D(LEDBT_NEG(-1))	-0.347010	-2.756440	0.0130	
ECT(-1)	-1.2129***	-12.8298	0.0000	

Source: Author computation from Eviews13.

Based on Table 4 Panel A, It is evident that there is a positive relationship between real growth domestic product (RGDP) and positive capital expenditure (CEXP). More specifically, real growth domestic product will increase by 19% at 5% significant level if capital expenditure increases by one percent. This confirms the statement of Ntiga & Henri, (2022). However, at lag 2, negative capital expenditure has a negative coefficient with real GDP, meaning that a 1% decrease in capital expenditure will result in a decrease of 21% in real GDP. The theory of Keynes & Wagner's law, which views public spending as an engine room for economic expansion, is confirm by this outcome of positive coefficient.

On the other hands changes in REXP and IDBT, both positive and negative, little affect economic growth. With a p-value of 0.0405, POS (IDBT) specifically has a somewhat significant positive effect on economic growth, increasing it by 51% and 39% for positive and negative changes, respectively. These results are in line with earlier studies (Moss et al., 2006, Putonoi et al., 2013, and Egbuwalo & Abere, 2019) that show increased expenditure on recurrent and internal debt might have a favorable impact on Nigeria's economic growth.

Positive external debt, on the other hand, has a positive relationship with economic growth; that is, a 1% increase in EDBT will result in a 16% gain in real

GDP. This suggests that the purpose of external debt is to supply the funds required for investments in technology, infrastructure, and other profitable fields. In contrast, there is a positive relationship between economic growth and a negative external debt. This suggests that debt reduction raises investor confidence, decreases debt payment costs, and strengthens a nation's financial stability. This outcome is consistent with research conducted by Aguwamba and Adeghe (2017) and Amassoma and Adeniran (2017).

From Panel B short-run term perspective, public expenditure on capital expenditure (CEXP) has both positive and negative impact on economic growth, this implies that if resources is fully spent on developmental project it will lead to positive impact on economic growth, while it will have negative impact if the resources is spent on non- developmental project. This conclusion is in line with the work of (Gumus &Mammadov, 2019, Nnamocha & Anyanwu 2022). Indeed, a positive shock to REXP is favorably associated with GDP (coefficient 20%). Nonetheless, economic development is adversely impacted by that negative shock to REXP (coefficient of 17%). These findings complement those of Ebong et al. (2016) and Egbuwalo and Abere (2019).

Moreover, an increase in domestic debt (IDBT) has a beneficial short-term effect on economic growth. Similar to how a negative shock to internal debt (IDBT) has an adverse effect on RGDP growth, positive shocks to internal debt are crucial for the nation's short-term economic expansion. Our findings aligned with those of Moss et al. (2006) in Tanzania, who contend that a greater reliance on domestic debt financing could potentially alleviate the issues associated with external borrowing. It has been observed that external borrowing weakens the state's ties to its citizens, thereby cutting off the accountability channel that drives reforms in domestic institutions.

According to our findings, the GDP is positively impacted by the positive shock to external debt, but the GDP is positively impacted by the negative shock and is not statistically significant. This suggests that increasing public debt expenditure will affect real GDP in both positive and negative ways, by 21% and 20%, respectively. This demonstrates how a positive foreign debt can increase real GDP through funding investments, raising government expenditure, and bringing in resources and technology. The GDP grows immediately as a result of these activities, which boost economic activity. Additionally, a positive relationship between real GDP and negative foreign debt (i.e., declining debt) implies that cutting external debt promotes economic growth by lowering debt servicing costs and boosting investor confidence and financial stability. The error correction coefficient (ECT) parameter is -1.2129 which indicates that 121% errors generated in one period is corrected in the next period. This highly negative ECT coefficient shows long run stability in impact of public expenditure on economic growth in Nigeria.

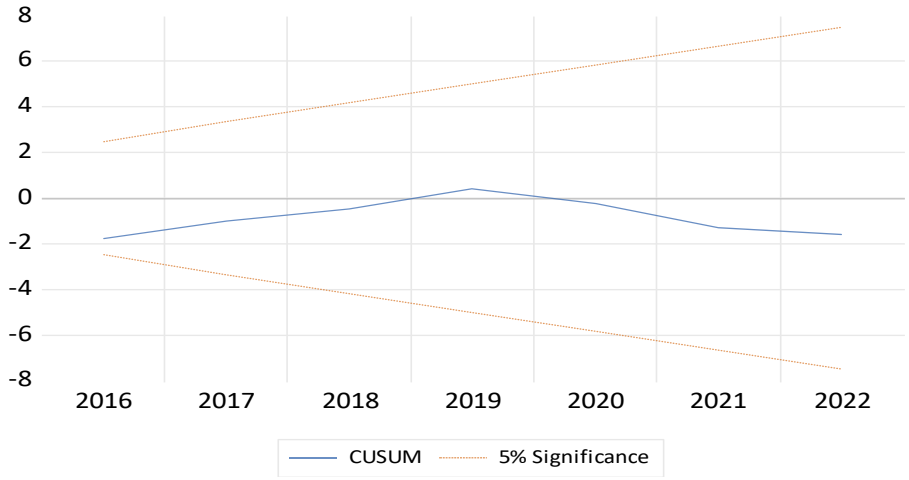
Table 5: Diagnostic Test

Robustness Check			
Panel A			
Diagnostic	F-stat	Df	Probability
R^2	0.8375	-	
R^2 Adjusted	0.6568	-	
DW	2.2289	-	
F-Stat	4.6371***	-	0.0000
Panel B			
Linearity (RESET)	0.9208	1, 9	0.3623
Serial Correlation	3.4616	3,7	0.0798
Heteroscedasticity	0.0560	1,35	0.8143
JB-Normality	0.2497	-	0.8826

Source: Author computation from Eviews13. Note: * **, **and* Denotes 1%,5% and 10% significance level respectively.

Table 4.5 Panel A illustrates that 84% of the proportion of the dependent variable can be explained by the explanatory variables, according to the model's R-square. Because the model's values are between 1.5 and 2.5, the Durbin Watson statistics demonstrate that the model is free from first order serial correlation. Furthermore, the F-statistics probability is less than 5%, or 0.000<0.05, indicating that the independent factors have a combined significant impact on the dependent variable (GDP).

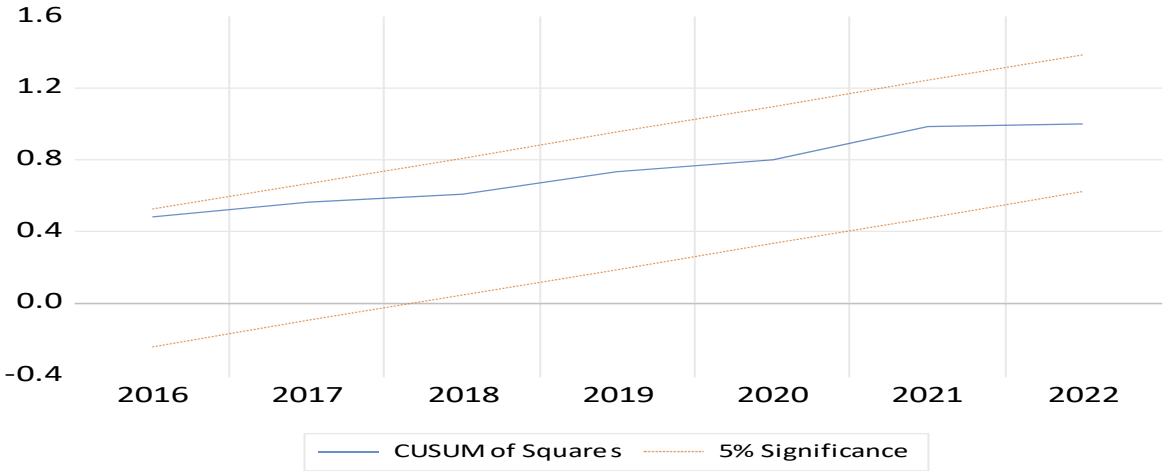
From Panel B, the Breusch-Godfrey LM test indicates that there is no serial correlation present in the model, which is in line with the results of the diagnostic tests in Table 5. The results of the Jarque Bera test demonstrate that the model's data was regularly dispersed. There is no indication of heteroskedasticity in the model according to ARCH. It is evident from the Ramsey RESET test that the model has been appropriately tasted. To check for model stability over the course of the study periods, tests of cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) were performed. It is proposed that, at 5% significance, the residuals line of a model should lie inside the straight lines of the critical limits in order for the model to be considered stable across the sampled period.



Source: Author's computation using EViews13

Fig.1:CUSUM

The Plot of cumulative sum of recursive residual for the above graph shows, the straight lines represent critical bounds at 5% significance level which must be between upper and the lower bound.



Source: Author's computation using EViews13
Fig.2CUSUMQ

The Plot of cumulative sum of recursive residual for the above graph shows, the straight lines represent critical bounds at 5% significance level which must be between upper and the lower bound.

5. Conclusion and Recommendations

Nigeria and other developing nations face significant obstacles to economic expansion. Public spending is therefore seen to be a driving force behind economic expansion. Using a NARDL model, we examine in this paper the asymmetric effects of disaggregated public expenditure, i.e., capital expenditure, recurrent expenditure, expenditure on internal debt, and expenditure on external debt, on GDP in Nigeria from 1981 to 2022. We can infer from the findings that there is an unbalanced link between the factors taken into consideration. As a result of our findings, real GDP is positively impacted by rising capital expenditures over time. Conversely, real GDP is negatively impacted by falling capital expenditures, and real GDP is positively impacted by rising recurrent, internal, and external debt. According to earlier research, such as that conducted by (Moss et al. 2006, Putonoi et al. 2013 and Egbuwalo & Abere 2019, Ogbu & Lucy 2020), this asymmetric effect is consistent. The real GDP's short-term reaction to shocks related to capital spending, external debt, recurrent expenditure, and internal debt is likewise asymmetric.

These findings have several significant ramifications for institutional investors and policymakers in Nigeria. In general, Nigeria should prioritize increasing its investment expenditure above its operating expenditure, which has less room for growth, in order to boost public spending. The outcome of external debt demonstrates that a positive foreign debt can raise real GDP through financing investments, augmenting government expenditure, and bringing in resources and technology. Nigeria should therefore only apply for external financing for highly important, well regarded, and self-liquidating projects. These initiatives ought to directly influence economic growth. When it comes to debt management, an open economic culture should be fostered.

Authors' Contribution

Based on the a-priori research of and Abdullaziz and Ibrahim,(2016), we have constructed an econometric equation. We alter their definition in such a distinctive way to demonstrate a relationship among RGDP growth, recurrent expenditure, capital expenditure, internal debt, and foreign debt in an effort to provide new insights to close the gap in the research. Therefore, we use a variety of econometric tools that are applicable in the literature to estimate the relationship and find that Nigeria's RGDP is more susceptible to capital expenditure than recurrent expenditure. In most years, capital expenditure surpasses recurrent expenditure, which has put pressure on the country's economic growth. On the

basis of this, we offer crucial suggestions in addition to an equilibrium-targeting strategy that is both flexible and aimed at boosting the economy.

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