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The Public Debt Conundrum: Unpacking Its Effects on Nigeria's Economic Progress

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Abstract: The study assessed the effect of public debt on economic progress in Nigeria from 1986 to 2022. It investigates the connections among gross domestic product growth rate which is used to measure economic progress, domestic debt, external debt, gross capital formation and exchange rate to throw light on their effect on the path of economic progress of Nigeria. Employing ARDL method, with data sourced from Central Bank of Nigeria Statistical Bulletin and World Bank Development Indicators. Findings reveals that domestic debt and external debt had a positive insignificant short-term effect on Nigeria's economic progress and both domestic and external debt have an adverse effect on Nigeria's economic progress in the long term. Also, gross capital formation had an adverse insignificant effect both in the short and long term, exchange rate had a negative insignificant short-term effect, but its long run effect was positive and significant on Nigeria's economic progress. A long run cointegrating equilibrium relationship was established among the variables in the study. Based on the findings, the study recommends among others that policy makers should manage debt prudently, avoid over reliance on debt as it is only a short-term solution, boost revenue generation and capital formation to drive economic progress and manage exchange rate properly to avoid fluctuations as it has potential to boost Nigeria long-term economic progress.

Keywords: Gross Domestic Product Growth Rate, Domestic Debt, External Debt, Gross Capital Formation and Exchange Rate.
JEL Classification: H10, H81, C22, C87.

Research Paper

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INTRODUCTION

Public debt, a critical element of fiscal policy, is a double-edged sword that can either stimulate economic growth or plunge a nation into financial distress. Public debt arises due to government involvement in economic activities which have implications on revenue and expenditures. Government in pursuit of the above articulates its intentions in a financial plan known as the budget. The budget contains the details of estimated incomes or receipts, and proposed expenditure for the given period. When government revenue is equal to expenditure it shows a balanced budget, when revenue is greater than expenditure it shows a surplus budget, and when there is a short fall in Government expected receipts (revenues) it shows a deficit budget (Matthew and Mordecai 2016; Ijirshar, Joseph, and Godoo 2016). Budget deficit is a major concern for government all over the world, because government has to source for funds to finance it. Government may finance the deficit through tax revenue, money creation or borrowing from banks and the non-banking public. Government may also finance it through the issue of short-term bonds, long term bonds, treasury bills, development stock etc. or from external sources. (CBN, 2010).

Soludo (2003) opined that countries borrow for two broad categories: Macroeconomic reasons (higher investment, higher consumption (education and health) or to finance transitory balance of payments deficits. The above suggests that a nation indulges in debt to boost economic growth and reduce poverty. Specifically, an economy that is characterized by Inadequate internal capital formation arising from the vicious circle of low Productivity, low income, and low savings, among others, requires technical, managerial and financial support from other nations, and within, to bridge the resources gap.

The principal macroeconomic objective worldwide has been the attainment of sustainable

economic growth and development of an economy most especially the less developed countries (LDCs) like Nigeria which are characterized by low capital formation due to low levels of domestic savings and investment. It is expected that these LDCs when faced with scarcity of capital would resort to borrowing from either domestic or external sources (Onogbosele and Mordecai 2016). Hence, borrowing may be considered as a second-best alternative to capital formation during periods of depression in an economy (Matthew and Mordecai 2016; Onogbosele, and Mordecai 2016). According to (CBN 2010), the Nigerian economy remains monocultural and heavily depend on oil which accounts for about 80 percent of government revenue, 90 to 95 percent of export earnings and over 90 percent of foreign exchange earnings. Oil revenue has been the main source of financing government expenditures and increasing oil revenue over the years has boosted public expenditures on social and economic infrastructures (Okwu *et al*., 2016). Public expenditures in Nigeria have been largely driven by the boom-and-bust pattern of oil prices and revenue for most of the post-independence years. Prior to the oil boom of the early 1970s, government expenditure was basically driven by taxes from the commodity boom of the late 1940s and 1950s. Thus, with over 70 per cent of the nation's revenue coming from oil since the 1970s, the patterns of government expenditure have been prone to fluctuations in oil prices. Consequently, both revenue and expenditure tend to move in line with the increases in oil prices, with revenue and expenditure increasing astronomically in periods of high oil prices, but declining marginally during oil price decline. (Oluwapelumi, Iyiola, and Abiodun 2016; Matthew and Mordecai 2016)

According to the data provided by the Central Bank of Nigeria (CBN) in 2010, there has been a significant increase in the outstanding debt profile over the years, starting from N0.12 billion or 4.9 percent of the Gross Domestic Product (GDP) in 1960, rising to N382.7 billion or 17% of GDP in 1990. The figures continued to escalate, reaching N1, 170.5 billion or 28.5 percent of GDP in 1998, and surging further to N6, 260.6 billion or 54.9% of GDP in 2004. Subsequently, due to the debt relief provided by the Paris club of creditors, the amount of outstanding public debt experienced a significant decline, dropping sharply to N2, 204.8 billion or 11.9% of GDP in 2006, although it saw a slight increase to N2, 597.7 billion or 11.4% of GDP in 2007. Since then, there has been a continuous upward trend, with the nation's total debt profile reaching N17.36 trillion as of 31st December 2016 (CBN, 2010; DMO, 2016). By 31st December 2017, Nigeria's total debt profile witnessed a 25% increase from the previous year, amounting to N21.7 trillion or $73 billion, equivalent to 16.7% of GDP. This figure escalated further to N32.9 trillion in 2020, representing 19.1% of GDP, and soared to 97.3 trillion as of 31st December 2023, accounting for 28.7% of GDP. Within this total, the external debt stood at 38.2 trillion, constituting 39.2% of the overall debt, while the domestic debt amounted to 59.2 trillion, making up 60.7% of the total debt (DMO, 2023; Africa Import and Export Bank {Afreximbank}, 2024).

Despite the substantial debt profile of the Nigerian economy, the GDP growth rate has experienced a slight increase from 1960 to 2015. However, in 2016, there was a negative decline of -1.6% attributed to oil price shocks, leading the economy into a recession. Furthermore, in 2020, there was another decline of -1.8% due to the COVID-19 pandemic, followed by a marginal increase of 3% in 2023 (World Bank, 2023; Afreximbank, 2024). The economy is also marked by a high unemployment rate, deteriorating infrastructure, poverty, and various other challenges. According to DMO (2017), the significant rise in the total debt stock has exposed the nation to a severe debt burden, impacting the nation's output growth negatively. Nigeria's substantial debt burden has resulted in serious consequences for both the economy and the well-being of the population. The ratio of debt servicing to revenue, which was approximately 33.8% in 2017 and is projected to rise to 110.4% in 2024 (Afrexim, 2024), has significantly constrained the resources available for investment, economic growth, and overall development. Despite the Government's persistent efforts to manage the national debt, including an $18 billion debt write-off by the Paris Club, the issue of debt remains a heavy burden on the Nigerian economy. The considerable debt service payments and burden have dampened investment, creating a vicious cycle with the debt stock and overwhelming debt service burden, posing a challenge to the development of sub-Saharan African countries (SSA). This situation results in insufficient foreign exchange earnings, leading to severe restrictions on imports. Import restrictions, in turn, hinder export growth, perpetuating shortages in imports. The lingering debt burden and associated uncertainties generated by the debt crisis further discourage investment. Reduced investment, coupled with shortages in crucial imports, culminates in a decline in real output. The decrease in output, accompanied by growing current account deficits, contributes to an increase in debt and escalating debt service obligations. This intricate relationship illustrates the concept of debt overhang and the crowding-out effect of debt. (Onogbosele and Mordecai 2016)

In the light of the above, this paper assesses the relative effect of domestic and external debt on economic growth in Nigeria. The rest of the paper consist of literature review, methodology, results and discussion, conclusion and recommendations.

LITERATURE REVIEW

Theoretical Literature

Debt Overhang Theory

The concept of debt overhang is an essential theory in economics that argues that high levels of external debt could obstruct the progression of economic

growth within a given nation. In line with this assumption, a condition arises where the sum of debt that is owed by a nation exceeds its capability to execute timely repayments, resulting in a state where the anticipation of future debt repayment obligations acts as a deterrent to both investment initiatives and the development of the economy. This phenomenon occurs due to the fact that investors foresee a situation where the majority of future returns generated will predominantly be allocated towards servicing the debt rather than being utilized for the betterment of the economy as a whole or for the benefit of the investors themselves.

The theory of debt overhang, which gained prominence within the field of economics, notably emerged and was systematically structured by the renowned economists Paul Krugman and Jeffrey Sachs during the 1980s. Of the two scholars, Krugman's ground-breaking research on this subject stands out as particularly impactful, as it intricately elaborates on how excessive levels of debt can result in less-than-optimal levels of investment and growth within an economy.

Dependency Theory

Dependency theory posits that the global economic structure facilitates a unidirectional flow of resources from peripheral to core nations, enriching the latter at the former's expense. It elucidates the structural inequalities and historical exploitation that perpetuate poverty in developing nations, providing insights into global economic dynamics.

Proponents of Dependency theory, including notable economist Raúl Prebisch, significantly contribute to its foundational principles. Prebisch articulated key concepts of the theory, particularly addressing the declining terms of trade for developing countries regarding primary goods. Hans Singer collaborated with Prebisch to develop the Prebisch-Singer hypothesis, focusing on unequal exchanges between developed and developing countries. Additionally, Andre Gunder Frank expanded the theory by analyzing the effects of colonialism and neo-colonialism on the economic frameworks of developing nations, highlighting the complexity of global dependency relationships.

Central to Dependency theory are vital concepts that elucidate the complexities of the global economic system. The Center-Periphery Structure delineates the global economy into a dominant core of developed nations and a subordinate periphery of developing nations, emphasizing power imbalances. The concept of Unequal Exchange illustrates how trade relations favor developed countries, resulting in detrimental terms of trade for developing nations. The Historical Context of Dependency theory underscores the enduring effects of colonialism and imperialism in establishing dependent economic relations that shape national trajectories. Furthermore, the disparity between Development and Underdevelopment reflects that the prosperity of core nations often correlates with the stagnation of peripheral countries. Lastly, the concept of Internal Disparities reveals the dynamics within peripheral countries, where local elites often align with foreign interests, further entrenching dependencies and inequalities. This makes developing countries to result to borrowing in order to finance development (Presbich 1950; Singer 1950; Frank 1967).

The Two Gap Model

The two-gap model, as expounded by Hollis Chenery and Alan Strout in the 1960s, tackles the obstacles encountered by developing nations in attaining economic advancement. It highlights two key impediments: the savings disparity and the shortage of foreign exchange. The Savings Disparity manifests when domestic savings prove inadequate to fund the targeted investment level. Countries often resort to borrowing from global financial markets or seeking external assistance to bridge this discrepancy. The Foreign Exchange Gap emerges when a nation lacks ample foreign exchange to import crucial capital goods and technology for progress. External borrowing serves as a strategy to fill this void, enabling the nation to finance imperative imports and investments.

Within the framework of the two-gap model, developing nations, such as Nigeria, frequently accumulate public debt to tackle these disparities. Through international borrowing, they aim to complement deficient domestic savings and secure the required foreign exchange. Nonetheless, this dependency on external debt may lead to a situation of debt overhang, where the amassed debt poses a burden, potentially impeding economic growth and investment due to concerns about unsustainable future debt repayments. (Chenery and Strout, 1966; Krugman, 1988).

Theoretical Framework

This study is hinged on Debt overhang theory, the debt overhang theory is based on the premise that if debt will exceed the country’s repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country’s output level. Thus, some of the returns from investing in the domestic economy are effectively ‘taxed’ away by existing foreign creditors and investment by domestic and new foreign investors are discouraged.

The Debt Overhang Theory comprises three key components: Gross Domestic Product as a representation of output, external debt, and domestic debt. These elements serve as the foundation for constructing the model employed in this research.

Empirical Literature

Aiyedogbon, *et al*., 2022 employing ARDL modelling, the research explores ‘’the impact of public debt on economic growth: evidence from Nigeria’’.

Utilizing data sets sourced from Central Bank of Nigeria's statistical bulletins and annual reports spanning 1990 to 2020. Results revealed long term connection between the variables, external debt and debt servicing exhibits a negative significant effect on economic growth, while domestic debt and exchange rate exhibits positive connection. Based on the findings, it was recommended that government should consider domestic borrowing to external borrowing.

Yusuf, and Mohd, 2021 Titled ''the impact of government debt on economic growth in Nigeria'' assessed this impact from 1980 to 2018 with data sourced from central bank of Nigeria, World Bank, and international monetary fund. Autoregressive distributed lag (ARDL) technique was employed to analyzed the data. Results show that external debt was an obstacle to long term growth in Nigeria, while in the short run it contributed to growth, domestic debt short run impact was adverse, while its long run impact was positive, debt service retarded growth in the short run and long run. The study recommended that government should channel borrowings to diversification of production in the economy, encourage domestic resource mobilization, judiciously manage debt and rely on domestic debt rather than external debt.

Law, *et al*., 2021 titled ''Public debt and economic growth in developing countries: Nonlinearity and threshold analysis'', employed dynamic panel threshold technique for 71 developing countries from 1984 to 2015. Findings revealed that high debt has adverse significant effect on economic growth, while low debt exhibit insignificant effect. Also, better institution helps to minimize the negative impact of public debt. Recommended that public debt threshold should be embedded in the debt management strategy to reduce the negative impact of high public debt.

Misztal, 2021 Titled ''Public debt and economic growth in the European Union. Empirical investigation'', examined the connection between public debt and economic growth of 27 European union countries using pairwise granger causality and panel least squares with data sourced from IMF world economic outlook and Eurostat (European Statistical Office). Findings unveil one way granger connection between foreign debt and gross domestic product as well as between domestic debt and gross domestic product. Also, panel least squares result unveils a negative impact of foreign and domestic debt on gross domestic growth. The study recommended that countries should pursue goal of fiscal policy to ensure sustainable public debt.

Asteriou, Pilbeam, and Pratiwi 2020 employing panel mean group, pooled mean group and dynamic fixed effect examined the short and long run connection between public debt and economic growth for the period 1980 to 2012. Findings revealed that government debt is negatively associated with economic growth in the short run and long run. The study recommended that government should pay careful attention to what debt is use for in order not to be misappropriated, strengthen institutions and ensure public expenditure evaluation.

Didia, and Ayokunle, 2020 employing vector error correction model (ECM) with data sourced from CBN and World Bank for the period 1980 to 2016, examined the effect of domestic and external debt on economic growth in Nigeria. Findings showed that domestic debt has a positive significant long-term relationship with economic growth, while external debt showed insignificant adverse relationship. The study recommended that government should pay attention to an optimal blend of domestic and external debt in Nigeria's debt portfolio.

Ibrahim, 2020 employed ARDL technique to examine the effects of corruption on public debt and economic growth in 20 developing countries spanning 1996 to 2018. Results showed that corruption increases public debt and impedes long-term economic growth. Based on these findings it was recommended that anti-corruption policies should be implemented to eliminate corruption so as to achieve lower debt and higher growth levels.

Jacobs, *et al*., 2020 investigated the causal relationship between public debt and economic growth rates for 31 European and Organization of Economic Cooperation for Development (OECD) for the period 1995 to 2013 employing panel vector autoregression. Findings reveal no causal link from public debt to growth, but a causal link from growth to public debt, also interest rate contributes to the accumulation in public debt.

Ndoricimpa, 2020 assessed 'Threshold effects of public debt on economic growth in Africa: A new evidence''. Applied panel smooth transition regression approach to examine this with data sourced from World Bank development indicators. Findings uncovers that low public debt is growth enhancing or neutral, while high public debt is detrimental to growth.

Akhanolu, *et al*., 2018 investigated the effect of public debt on economic growth in Nigeria from 1982 to 2017 using the two-stage least square regression. For the first equation both internal and external debt and their lags were regressed against GDP, the result showed that external negatively impacts the economy while internal debt positively does the same. For the second equation, GDP, total savings deposits in the Nigerian deposit money banks and capital expenditure were regressed against internal debt, the result showed that all the variables have significant relationship with internal debt.

Based on the literature examined above, with respect to Nigerian studies, none of the reviewed literature used real gross domestic product growth rate to

measure economic progress, they all used the total value of real GDP for each year. When it comes to measuring economic growth, real GDP growth rate is more appropriate because it shows the dynamic change in the economy rather than just its size. A high GDP growth rate indicates a rapidly expanding economy, while a low growth rate or negative growth rate indicates a slowing or contracting economy.

METHODOLOGY

Data and Sources

The research employed secondary time series data obtained from the Central Bank of Nigeria Statistical Bulletin and the World Bank Development Indicator. The study sought and utilized aggregate data on Gross Domestic Product Growth Rate, External Debt, Domestic Debt, Exchange Rate, and Gross Capital Formation covering the period from 1986 to 2022 for the analysis.

Model Specification

This study adopted the empirical work of Aiyedogbon, (2022) which used economic growth (GDP) as the dependent variable, external and domestic debt as the independent variables.

Based on this study the model was modified to include other variables as stated below:

RGDPR=f (EXT, DBT, EXR, GC)

$RGDPR= \beta_0 + \beta_1\ EXT_t + \beta_2\ DBT_t + \beta_3\ EXR_t + \beta_4\ GC_t + \mu_t$

Where RGDPR is real gross domestic product growth rate, EXT is external debt, DBT is domestic debt, EXR is exchange rate, GC is gross capital formation, μ_t is error term and t is time period, β_0 is intercept, β_1 - β_4 are parameters to be estimated.

The ARDL form of the model is given below

$\Delta ARGDPR= \sigma_0 + \sum_i^p = 1\ \sigma_1\ \Delta RGDPR_t + \sum_i^q = 1\ \sigma_2 \Delta lnEXT_t + \sum_i^r = 1\ \sigma_3 \Delta ln DBT_t + \sum_i^s = 1\ \sigma_4 \Delta\ ln EXR_t + \sum_i^t = 1\ \sigma_5 \Delta\ ln GC_t + \emptyset_1 \Delta RGDPR_{t-i} + \emptyset_2 \Delta lnEXT_{t-i} + \emptyset_3 \Delta lnDBT_{t-i} + \emptyset_4 \Delta ln EXR_{t-i} + \emptyset_5 \Delta ln GC_{t_{t-i}} + \cup_{it}$ (3)

Where σ_0 = constant term, $\sigma_1 - \sigma_5$ = short term coefficients, $\emptyset_1 - \emptyset_5$ = long run coefficients, ln=natural log and $\cup_{it}$ = error term. All the independent variables were logged while RGDPR was not logged because it is already in percentages.

Method of Data Analysis

The estimation techniques of this research are divided into three categories; firstly, an initial assessment is carried out through the Augmented Dickey Fuller unit root test. Secondly, the Autoregressive Distributed Lag (ARDL) method, developed by Pesaran and Shin (1999), is utilized to examine the association between the target variable and model regressors. Lastly, post-estimation procedures, such as serial correlation and stability testing, are performed.

Based on the results of the unit root test, this study employs ARDL modelling guided by a mixed order of integration. The ARDL methodology serves as a valuable instrument for analysing, estimating, and evaluating the short-term and long-term connections among variables, irrespective of whether they are integrated at level 1(0) or first difference 1(1).

Post Estimation Test (Diagnostic Test)

In the present investigation, diagnostic assessments are carried out to ascertain the reliability and robustness of the model. These include the Breusch-Godfrey Serial Correlation test, examination for Heteroscedasticity, as well as the evaluation of Cumulative Residual (CUSUM) and Cumulative sum of squares of recursive residuals (CUSUMSQ).

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1: Summary Statistics

	GDPGRRAT	DDEBT	EDEBT	GROSS_C	EXRATE
Mean	4.162427	4580.979	3065.940	6.04E+10	131.1854
Median	4.195924	1370.325	896.8496	5.87E+10	125.8081
Maximum	15.32916	22210.36	18702.25	8.31E+10	425.9792
Minimum	-2.035119	28.43870	41.45240	3.95E+10	1.754523
Std. Dev.	3.854065	6038.164	4442.479	1.14E+10	118.7234
Skewness	0.515553	1.421329	2.184719	0.132638	0.910852
Kurtosis	3.459191	3.982494	7.175944	2.104983	3.034101
Jarque-Bera	1.964139	13.94591	56.31785	1.343450	5.117979
Probability	0.374535	0.000937	0.000000	0.510827	0.077383
Sum	154.0098	169496.2	113439.8	2.24E+12	4853.861
Sum Sq. Dev.	534.7374	1.31E+09	7.10E+08	4.66E+21	507428.6
Observations	37	37	37	37	37

Table 1 is the summary of information about the variables used in the study over the 37 years period from 1986 to 2022. The average GDP growth rate for this period stood at 4.16% revealing considerable variation, with a peak of 15.33% and a low of -2.04% representing economic downturn in 1993. Domestic debt peaked at 22.2 trillion, surpassing external debt which reached around 18.7 trillion. On average, domestic debt and

external debt were approximately 4.6 trillion and 3.1 trillion respectively. Gross capital formation displayed fluctuation from a minimum of about 3.9 trillion USD to a maximum of about 8.3 trillion USD. The minimum, maximum and average exchange rate over the 37-year period were around N1.75, N425.98 and N131.19 per dollar respectively. All the variables used in the study have positive skewness indicating they have a long right tail. The kurtosis of GDPGRAT, DDEBT, EDEBT and EXRATE are above 3 implying that most of the variable distribution is leptokurtic, while GROSS_C is Platykurtic. The Jarque-Bera statistics shows that DDEBT and EDEBT are normally distributed, while GDPGRAT, GROSS_C, and EXRATE are not normally distributed, but the normality assumption does not matter for multivariate functions (Adewale, Ameji, and Solomon, 2021). The standard deviation which indicates the nature of dispersal in the worth of the variables is large except for GDPGRAT, which indicates much increase in the value of the variables over the years.

Unit Root Results

Table 2: Unit Root Results

Variable	ADF Stat.	Order of Integration	PP Stat.	Order of Integration
GDPGRAT	-4.0371 (*0.0034*)	1(0)	-3.9497 (*0.0043*)	1(0)
DDEBT	-4.4020 *(0.0013*)	1(1)	-4.4020 *(0.0013*)	1(1)
EDEBT	-4.3690 *(0.0014*)	1(1)	-4.3831 *(0.0014*)	1(1)
EXRATE	-2.8634 (0.0597	1(0)	-3.1873 (0.0043)	1(0)
GROSS_C	-9.0900 (0.0000)	1(1)	-7.9723 (0.0000)	1(1)

To analyze the variables trends using econometric methods, the ADF and PP test is applied after taking the natural log of DDEBT, EDEBT, GROSS_C and EXRATE, while GDPRAT was excluded from the logarithm transformation as it represents percentages. The results show that all the variables except for GDPGRATE and EXRATE exhibit stationarity at first difference, while GDPGRAT and EXRATE exhibit stationarity at levels. The results points to a mix order of integration which leads the research to employ the ARDL techniques as the most appropriate approach for estimating the model in this study.

ARDL Bound Test for Cointegration

Table 3: Bound Test Result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	3.807294	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Using the ARDL bound test introduced by Pesaran and Shin (1999) and Pesaran *et al*., (2001), the test results in table 3 reveals an F-statistics of 3.807294 exceeding both the lower and upper critical values of 2.56 and 3.49 at 5% significance level. This confirms the presence of a long-run relationship among the variables, as a result the null hypothesis suggesting no long run relationship between the variables in Nigeria is rejected. Consequently, the study concludes that a long run relationship does exist between GDPGRAT and the independent variables in the study. Subsequently, estimates of the short-run and long-run forms of the ARDL model are estimated.

ARDL Short Run and Long Run Model

Table 4: Result of ARDL Short Run and Long Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDPGRRAT(-1)	-0.012734	0.175505	-0.072556	0.9429
GDPGRRAT(-2)	0.249821	0.144822	1.725018	0.0999
LOG_DDEBT	1.713215	4.121729	0.415654	0.6821
LOG_DDEBT(-1)	-12.24833	5.749324	-2.130395	0.0457
LOG_DDEBT(-2)	9.519062	3.749327	2.538872	0.0195
LOG_EDEBT	3.449881	1.957522	1.762372	0.0933
LOG_EDEBT(-1)	-5.276392	2.965556	-1.779225	0.0904
LOG_EDEBT(-2)	1.041177	2.013280	0.517155	0.6107
LOG_EXRATE	-4.549531	2.746315	-1.656595	0.1132
LOG_EXRATE(-1)	10.95230	3.411506	3.210402	0.0044
LOG_EXRATE(-2)	-1.241173	3.232244	-0.383997	0.7050
LOG_GROSS_C	-2.635571	7.302060	-0.360935	0.7219

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOG_GROSS_C(-1)	-20.61466	7.201190	-2.862674	0.0096
LOG_GROSS_C(-2)	-6.252617	7.087482	-0.882206	0.3881
C	727.8683	312.8634	2.326473	0.0306
CointEq(-1)*	-0.762913	0.142770	-5.343660	0.0000
R-squared	0.744391			
Adjusted R-squared	0.565465			
F-statistic	4.160326			
Prob(F-statistic)	0.001974			
Durbin-Watson stat	2.027127			
Long Run Estimates				
LOG_DDEBT	-1.331810	2.712943	-0.490910	0.6288
LOG_EDEBT	-1.029387	1.010934	-1.018254	0.3207
LOG_EXRATE	6.765644	2.322018	2.913691	0.0086
LOG_GROSS_C	-38.67130	19.63647	-1.969361	0.0629

With the optimal lag length given as 2 based on the lag length criteria, the result of the short run and long run model is presented above in table 4. The table reveals the short term and long-term relationship coefficients. The adjusted R^2 in the table, indicates that the model accounts for approximately 56.5% of GDPGRAT variations from 1986 to 2022. This underscores that changes in the specified variables moderately influence GDPGRAT variations during this period. Positive coefficient of DDEBT at levels indicates that a 1% increase in domestic debt corresponds to a minor 1.7% increase in GDPGRAT in the short run albeit insignificant. Positive coefficient of external debt at levels indicates that a 1% increase in external debt corresponds to 3.4% increase in GDPGRAT albeit insignificant. Conversely, Exchange rate at levels negatively impacts GDPGRAT but not significant. Also, GROSS_C exhibits an adverse effect. All the variables align with expectation in the Nigerian context except for GROSS_C. The error correction term (ECT) signifying long run adjustment is negative and statistically significant, implying a 76% convergence rate to long-run equilibrium for deviations from the dependent variables. The Durbin Watson test result confirms no serial correlation in the model, with value approximately 2. In the long run domestic and external debt exhibits negative influence on GDPGRAT, albeit insignificant at 5% level. Specifically, a 1% change in domestic and external debt results in 1.33% and 1.03% reduction in GDPGRAT. This aligns with expectations from debt overhang hypothesis suggesting that high debt can hinder economic growth also empirical review of Aiyedogbon, 2022; Akhanolu *et al*., 2018 whose studies revealed negative significant effect of external debt on economic growth, but inconsistent with Didia and Ayokunle, (2020) whose study reveals positive significant effect of domestic and external debt on economic growth in Nigeria.

Also, GROSS_C also diminishes GDP by 38.67%, while EXRATE increases GDPGRAT by 6.76% and significant.

Diagnostic Tests

Table 5: Serial Correlation Test Result

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.572855	Prob. F(2,18)	0.2347
Obs*R-squared	5.206722	Prob. Chi-Square(2)	0.0740

Table 6: Heteroscedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.848062	Prob. F(14,20)	0.6173
Obs*R-squared	13.03775	Prob. Chi-Square(14)	0.5236
Scaled explained SS	2.705234	Prob. Chi-Square(14)	0.9995

Table 7: Ramsey RESET Test

	Value	df	Probability
t-statistic	1.460462	19	0.1605
F-statistic	2.132950	(1, 19)	0.1605

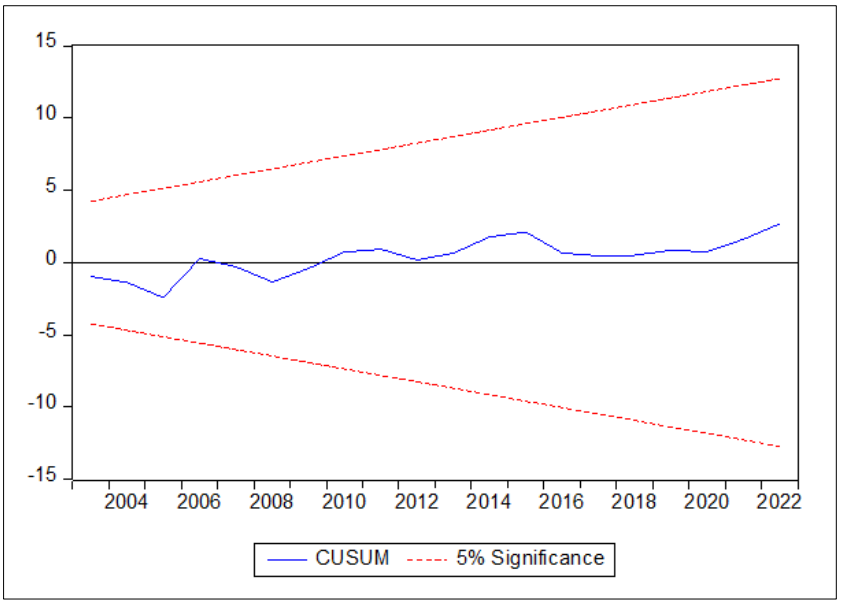

Figure 1: CUSUM TEST

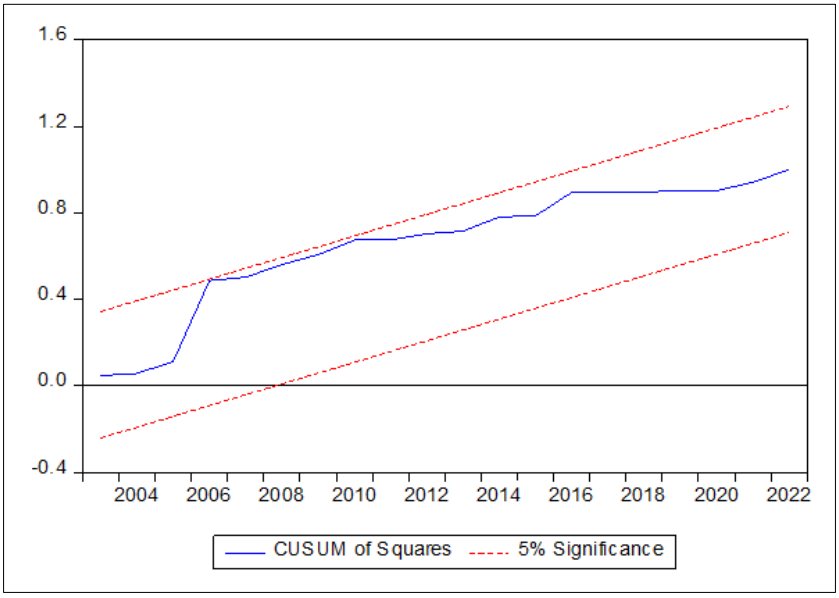

Figure 2: CUSUM OF SQ. TEST

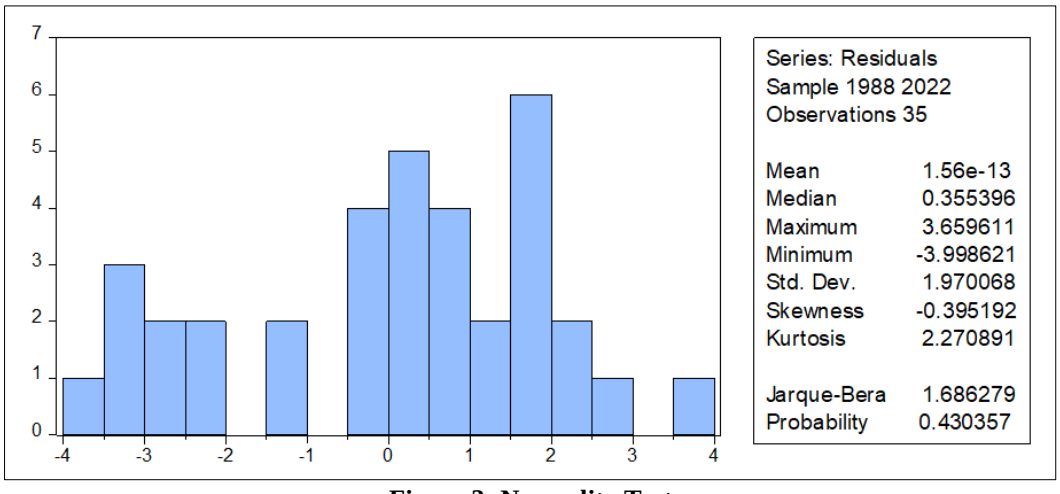

Figure 3: Normality Test

The outcome in figure 3 reveals that the variables taken together exhibit normal distribution with Jarque Bera prob value surpassing 5% significance level. Similarly, in tables 5,6, and 7, the Breusch-Godfrey Serial correlation indicates no serial correlation as the prob value of 0.2347 exceeds the 5% level. Heteroscedasticity also was examined using the Breusch-Pagan Godfrey test resulting in a probability value of 0.6173 indicating the absence of heteroscedasticity. The Ramsey-Reset test with a probability of 0.1605 suggests that the models are well specified. In addition, the model stability was confirmed using both CUSUM and CUSUM of SQ tests as shown in fig 1 and 2, the statistics remain within critical bounds, ensuring model stability at 5% level. All these suggests that the model is credible, reliable, and valid having passed all diagnostic and stability test.

DISCUSSION OF FINDINGS

The study revealed that external and domestic debt has a positive insignificant effect on GDP growth rate in the short run, but in the long run it had negative insignificant effect. This implies that domestic and external debt makes no significant impact on Nigeria GDP in the short run, while in the long run it adversely affects economic growth, thus Nigeria should not over rely on debt to run the economy as it is detrimental to growth.

In contrast gross capital formation had a negative effect to growth both in the short run and long run period contrary to expectation, implying that capital formation is low in Nigeria. Exchange rate had a negative insignificant effect in the short run, but significantly increasing economic growth in the long run, implying that exchange rate if adequately managed will strongly contribute to Nigeria economic growth.

The overall reliance on borrowing is an impediment to the country's economic expansion. These underscores the need to look inward to boost revenue generation and capital formation in Nigeria in order to avoid relying on debts which is detrimental to Nigeria economic growth. These findings, emphasizes prudent management and avoid over reliance as this can be detrimental thus confirming the debt overhang hypothesis.

CONCLUSION AND RECOMMENDATIONS

The study examined systematically the relative effect of domestic and external debt on economic growth in Nigeria spanning 1986 to 2022. The findings regarding the effect of public effect on economic growth in Nigeria align with debt overhang hypothesis, suggesting that excessive debt inhibits economic growth, empirical evidence from previous studies also supports this. The negative effect of capital formation points to the need to boost capital formation in Nigeria, and the positive significant effect of exchange rate in the long run reveals that prudent management of exchange rate would increase economic prosperity in Nigeria.

Based on the findings, the study recommends that policy makers should:

- Ensure prudent management of domestic and external debt in Nigeria.
- Avoid over reliance on debt to avoid adverse effect on economic growth in Nigeria.
- Boost revenue generation and capital formation to drive economic growth
- Exchange rate should be appropriately managed to avoid fluctuations as it has potential to boost growth in the long run.

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