EXTERNAL DEBT AND ECONOMIC GROWTH OF NIGERIA

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Abstract

This study examines the impact of external debt, debt servicing costs, and debt maturity structure on Nigeria's Real Gross Domestic Product (Real GDP) from 2003 to 2023. Given Nigeria's rising debt burden, understanding its impact on economic growth is critical. The study employed an ex post facto research design, utilizing historical data obtained from the Central Bank of Nigeria (CBN) and the Debt Management Office (DMO). The Autoregressive Distributed Lag (ARDL) modelling technique was used to analyse the data and investigate how external debt variables affected Nigeria's real GDP. With a coefficient of 0.75 ($p < 0.01$), the results show a considerable long-term beneficial impact of external debt on real GDP, indicating that growth can be supported by prudent borrowing. On the other hand, a correlation of -0.55 ($p < 0.05$) indicates fiscal strain due to high debt payment expenses, which have a negative influence on Real GDP. External debt has a short-term positive effect on Real GDP (coefficient of 0.40, $p < 0.05$), whilst debt servicing expenses have a short-term negative impact (coefficient of -0.30, $p < 0.10$). With a coefficient of 0.40 ($p < 0.10$), shorter debt maturities are also associated with higher volatility. These findings are consistent with the debt overhang theory, which holds that high debt impedes growth by raising uncertainty.

Keywords: External debt, Real Gross Domestic Product (Real GDP), Debt servicing cost

1.0 Introduction

Due in great part to its reliance on oil earnings, Nigeria has faced severe economic difficulties in recent decades. Crude oil has continued to be the largest contributor to Nigeria's GDP since its discovery in 1956, making up more than 80% of government spending and over 90% of export earnings (Central Bank of Nigeria, 2020). Nigeria's extreme dependence on a single commodity has made it vulnerable to changes in the price of oil globally, which has led to times of economic instability and recession, such in 2016 and 2020. The Nigerian government was compelled by these economic downturns to borrow money in order to sustain public spending and spur economic expansion. The administration has defended borrowing as essential for meeting pressing fiscal demands and promoting economic recovery in light of the nation's numerous developmental obstacles, such as poverty, poor infrastructure, and an expanding population. However, Nigeria's economic growth has been uneven despite the significant inflow of borrowed cash, raising questions about the viability of debt-financed growth methods (World Bank, 2021).

The influence of Nigeria's public debt growth on long-term economic growth has been a topic of much discussion among economists and policymakers during the last ten years. Governments frequently borrow money to fund development initiatives, but the sustainability of Nigeria's debt has come under scrutiny. With a debt-to-GDP ratio of about 35% as of 2023, Nigeria's governmental debt had surpassed $100 billion. While some economists believe this to be manageable, others find it concerning because of the high cost of debt servicing (Debt Management Office, 2023). Nearly 90% of the federal government's earnings in recent years have gone towards debt servicing, which includes paying back both principal and interest. This has left little money for essential public services like infrastructure development, healthcare, and education (IMF, 2022). A debt trap, in which ongoing borrowing becomes unsustainable and impedes future economic progress has been

questioned due to the combination of high debt levels, growing debt payment costs, and poor economic growth (Adedeji, 2022). Understanding the complex relationship between public debt and economic growth is still essential for Nigeria to formulate effective economic policies as it attempts to strike a balance between its need for development funding and fiscal sustainability. Hence, this study offers insightful information that will improve our comprehension of how various forms of public debt affect economic growth in the Nigerian setting.

2.0 Literature Review

2.1 External Debt and Real Gross Domestic Product (GDP) in Nigeria

The total amount of debt owed by a nation to foreign creditors, including loans from foreign governments and international organisations, is referred to as external debt. The correlation between GDP and external debt has become a major worry in the Nigerian context, particularly as the nation's borrowing from outside sources has grown over time (Central Bank of Nigeria, 2020). According to empirical research, there is a mixed link between foreign debt and growth. While moderate amounts of debt can help finance infrastructure projects and spur growth, excessive debt can result in unmanageable debt servicing obligations that impede economic advancement (World Bank, 2021). For example, Akinlo and Osabuohien (2013) discovered that when money is invested in industries that yield high returns, including energy and infrastructure, external debt has a favourable effect on Nigeria's GDP development. On the other hand, Oluwafemi and Onifade (2017) pointed out that after a certain point, the negative consequences of foreign debt—like higher interest rates and a decline in investor confidence—become more significant than the possible advantages, which results in slower economic growth. The purpose of this study is to determine whether external debt helps or hurts Nigeria's real GDP growth.

2.2 Debt Servicing Costs and Gross Domestic Product (GDP) in Nigeria

For economies with high levels of public debt, debt servicing costs—which include principal repayments and interest payments—represent a significant obstacle. Up to 90% of government income have been spent on debt payment in Nigeria in recent years, placing a significant burden on the country's finances (IMF, 2022). This significant expenditure on debt repayment leaves little money for beneficial expenditures in healthcare, education, and infrastructure—all of which are critical for promoting economic growth. A reduction in fiscal space brought on by high debt servicing costs may compel the government to reduce spending in important sectors that promote long-term growth. Furthermore, Nigeria's reliance on outside funding and the corresponding service commitments may make the nation more susceptible to outside shocks, such changes in the price of oil globally, which have an immediate effect on its revenue sources. According to empirical research, oil price volatility makes it more difficult for Nigeria to attain continuous growth by exacerbating the detrimental effects of debt payment expenses on the country's economic stability (Eze and Okoro, 2019). On the other hand, some research such as that conducted by Johnson and Obasi (2021) indicates that efficient debt management and servicing can sustain investor confidence and promote ongoing economic growth, particularly when debt is utilised to fund investments that improve technological advancement and human capital. By analysing the degree to which debt payment costs limit government spending and impact overall economic performance, this analysis seeks to understand how these expenses impact Nigeria's GDP.

The hypothesis serves as a basis for examining whether debt servicing expenses have a significant effect on Nigeria's GDP growth. The hypothesis enables researchers to objectively assess the data and ascertain whether there is a statistically significant relationship between the two variables by presuming no significant influence. This is essential for determining whether excessive costs are impeding economic progress and for comprehending the actual economic impact of debt payment. Rejecting the null hypothesis would show that debt servicing expenses actually affect GDP, underscoring the necessity of cost-management and cost-cutting measures. On the other hand, if the null hypothesis is not disproved, it might imply that other factors are more important in determining GDP growth, which would lead policymakers to concentrate on those areas.

2.3 Debt Maturity Structure and Gross Domestic Product (GDP) in Nigeria

Whether a nation's debt portfolio is made up of long-term or short-term debt, its debt maturity structure is crucial to its financial stability and future growth. While long-term debt may give greater stability but frequently carries higher interest rates, short-term debt can raise exposure to market changes and present liquidity problems. Concern regarding Nigeria's public debt's maturity structure is developing as the government struggles to strike a compromise between short-term funding requirements and long-term economic stability (Debt Management Office, 2023). A more stable environment for economic growth is created by a favourable debt maturity structure, which is defined by a larger percentage of long-term debt. This structure permits more manageable repayment schedules and lessens the immediate fiscal pressure on government revenues. On the other hand, an excessive dependence on short-term debt may result in higher borrowing costs and less fiscal flexibility, increasing the economy's vulnerability to outside shocks and downturns. According to empirical research, a well-structured debt maturity might lessen the detrimental effects of high debt levels on GDP development (Nwogugu and Egbochuku, 2018). Furthermore, Adegbie and Adelaja (2022) point out that elements like governance and institutional quality have an impact on how debt maturity structure affects GDP growth. The negative impacts of short-term debt are lessened in areas with stronger governance frameworks because money is more likely to be spent effectively and openly. By examining the advantages and disadvantages of each type of debt, this investigation seeks to determine how various debt maturity patterns impact Nigeria's GDP and whether short- or long-term borrowing methods are more effective in promoting sustainable growth.

In order to determine if the structure of debt maturity has a major impact on Nigeria's GDP growth, the hypothesis sets a baseline. The hypothesis enables an objective analysis of the connection between debt maturity and economic performance by assuming that there is no discernible influence. This is crucial to ascertain whether the country's capacity to maintain financial stability and sustain growth is impacted by the balance of short-term and long-term debt. By putting this theory to the test, one may determine whether changing the debt maturity structure is a practical way to improve economic resilience and encourage sustainable growth. If the hypothesis is disproved, it would suggest that the maturity structure does have a substantial impact on GDP, which would encourage policymakers to think about reorganising debt portfolios in order to maximise economic results. On the other hand, if the theory is accepted, it might imply that other facets of debt management or outside variables have a greater influence on GDP growth, directing policymakers to direct their efforts appropriately.

2.4 Theoretical Framework: Debt Overhang Theory

In their groundbreaking study "An Essay on the Revived Bretton Woods System," published in 2003, economists Michael P. Dooley, David Folkerts-Landau, and Peter Garber presented the Debt Overhang Theory, which they had developed in the 1980s. The writers discussed the possible consequences of high debt levels, especially in developing market economies, which could result in an unmanageable debt payment burden that impedes economic growth and development. When the idea was applied to the then-current global financial and economic problems, it attracted a lot of attention.

According to the hypothesis, a nation's estimated future debt load may become excessive once its debt level exceeds a particular threshold, which would lessen the incentives for investment and economic expansion (Krugman, 1988). This is due to the fact that businesses and investors believe future government income will be allocated more towards debt servicing than towards growth-promoting programs. According to the Debt Overhang Theory, excessive external debt and debt servicing expenses may discourage private investment and slow economic growth in Nigeria. Investors can worry that if the government borrows more money to pay off its current debt, this will result in greater taxes or inflation, which would make the nation less appealing to foreign investors. This is consistent with studies like Oluwafemi and Onifade (2017), which emphasise that detrimental effects like increased interest rates and diminished confidence become noticeable after a specific debt threshold.
Furthermore, this idea also applies to the Debt Maturity Structure. Long-term debt permits more sustainable repayment and less fiscal strain, whereas short-term debt raises liquidity risks and

breeds uncertainty, both of which can impede economic progress. According to Adegbie and Adelaja (2022), a balanced debt structure is necessary to lessen the negative consequences of debt overhang and make sure that borrowing increases economic resilience rather than financial fragility. Therefore, by raising future debt servicing costs and lowering the fiscal space available for investment, high debt levels can impede Nigeria's GDP development, according to the Debt Overhang Theory. In order to prevent economic stagnation and encourage sustainable growth, it also emphasises the significance of effective debt management, appropriate loan distribution, and a balanced debt maturity structure.

2.5 Empirical Review

The influence of external debt on Nigeria's economic growth was examined by Akinlo and Osabuohien (2013), who emphasised the significance of sectoral allocation of borrowed funds. The study found that when foreign debt is used to fund productive industries like energy and infrastructure, GDP growth is positively impacted. However, the cost of debt payment starts to impede growth by lowering the amount of money available for other beneficial uses when debt levels become unmanageable. The study leads to the conclusion that in order to guarantee favourable economic results, borrowed money must be carefully allocated to high-return industries. This study supports the idea that while moderate amounts of foreign debt might be advantageous, excessive debt can jeopardise economic expansion.

Oluwafemi and Onifade (2017) investigated the connection between Nigeria's economic expansion and external debt. According to their findings, external debt might initially drive GDP growth but gradually turns negative if it reaches a particular threshold. They contend that too much external debt impedes economic growth by raising interest rates and eroding investor confidence. This study lends credence to the idea that external debt has a detrimental impact on Nigeria's GDP growth when it exceeds a reasonable threshold. The authors stress how crucial it is to keep debt levels manageable in order to prevent detrimental effects on the economy.

Eze and Okoro (2019) looked into how Nigerian debt servicing was affected by fluctuations in oil prices, and how this in turn affected GDP growth. According to their research, Nigeria's debt servicing burden is made worse by changes in the price of oil globally, which lowers the amount of money available for economic growth. Given Nigeria's heavy reliance on oil earnings, a drop in oil prices raises the cost of debt servicing, which has an adverse effect on GDP growth. This study supports the claim that exogenous shocks, like fluctuations in the price of oil, make it harder to pay off debt, which in turn hinders economic growth.

The impact of debt servicing on Nigeria's economic growth was examined by Johnson and Obasi (2021). According to the study's findings, effective debt management can preserve investor confidence and possibly lessen the detrimental effects on GDP, even though debt payment places a significant strain on government budgets. Economic growth may be maintained when borrowed money is effectively used for investments in human capital and infrastructure. The notion that efficient debt management techniques can reduce the negative impacts of debt servicing expenses on economic performance is supported by this study.

The effect of loan maturity structure on Nigeria's economic growth was investigated by Adegbie and Adelaja (2022). They discovered that more stable economic development is linked to a larger percentage of long-term debt. Long-term debt eases financial strain, creates an atmosphere that is favourable for economic growth, and permits more reasonable payback plans. Conversely, an excessive dependence on short-term debt raises borrowing costs and liquidity problems. This study backs up the claim that Nigeria's GDP growth is significantly influenced by the debt maturity structure, especially when it comes to lowering the risks involved in short-term borrowing.

According to the World Bank's 2021 research on external debt and economic growth in Sub-Saharan Africa, which focused on Nigeria, how external debt is managed can either help or hinder economic growth. According to the research, infrastructure projects that support economic growth are financed in part by moderate levels of external debt. Unsustainable levels of foreign debt, however, result in high debt payment costs, which limit the government's ability to make investments in industries that spur growth. The idea that managing foreign debt is essential to

preventing detrimental effects on GDP growth is supported by this empirical review. Nwogugu and Egbochuku (2018) investigated the relationship between debt management practices and economic growth in Nigeria, concentrating on the loan maturity structure. They discovered that the detrimental effects of high debt levels on GDP growth can be lessened by having a well-structured debt portfolio, especially one with a larger percentage of long-term debt. In order to maximise economic results, their research highlights the significance of managing both short-term and long-term debt. The premise that a favourable debt maturity structure promotes economic stability and growth is supported by this study.

The investigation of external debt, debt servicing expenses, and debt maturity structure in connection to Nigeria's real GDP growth is well supported by these empirical assessments. In order to promote sustainable economic growth, they stress the significance of effective debt management, sectoral distribution of borrowed money, and a balanced debt maturity structure.

3.0 Research Methodology

In order to examine the effect of public debt on Nigeria's economic growth from 2000 to 2023, this study used a quantitative research design. To investigate both short-term and long-term relationships between public debt variables—such as total debt levels, debt servicing costs, and the debt maturity structure—and economic growth indicators like GDP, the study used a time-series econometric approach, specifically using the Autoregressive Distributed Lag (ARDL) model. Additionally, the directional influence and contributions of debt components to economic fluctuations were evaluated using econometric approaches including Variance Decomposition (VDC) and Granger causality tests. All pertinent information on Nigeria's public debt and economic growth for the chosen time period, encompassing federal, state, and local government levels, was included in the study's population. In addition to global agencies like the IMF and World Bank, data were obtained from the Central Bank of Nigeria (CBN), the Debt Management Office (DMO), and the National Bureau of Statistics (NBS). These resources provide complete and trustworthy data, making it possible to conduct an in-depth analysis of the ways in which public debt affected Nigeria's economic growth in various industries and geographical areas. This strategy made sure the analysis included the wide-ranging fiscal environment and economic forces affecting the nation.

3.1 Model Specification

An expanded version of the Solow-Swan growth model was used in this work to simulate the relationship between public debt and economic growth in Nigeria, with public debt serving as a significant explanatory variable. To account for Nigeria's unique economic situation, the standard model—which relates GDP to labour force, capital stock, and total factor productivity—was altered to incorporate elements related to public debt. Real GDP (RGDP) was expressed in the updated model as a function of government spending, labour force participation, debt servicing costs, debt maturity structure, and domestic and foreign debt. This method made it possible for the study to evaluate the long-term effects of various public debt components on economic growth. A more thorough examination of how fiscal policy influences growth outcomes was made possible by the model specification, which offered a framework for comprehending the dynamic relationships between public debt and Nigeria's economic performance.

$$\mathbf{RGDP_t=\beta_0+\beta_1 DomDebt_t+\beta_2 ExtDebt_t+\beta_3 DServ_t+\beta_4 DMaturity_t+\beta_5 GExp_t+\beta_6 L_t+\epsilon t}$$

Where:

- RGDPt represents the Real Gross Domestic Product at time $_t$ (a proxy for economic growth)
- $DomDebt_t$ represents the domestic debt at time $_t$,
- $ExtDebt_t$ represents the external debt at time $_t$,
- DServt represents debt servicing costs at time $_t$,
- DMaturityt represents the maturity structure of the public debt at time $_t$,
- $GExp_t$ represents government expenditure at time $_t$,
- Lt represents the labor force at time $_t$,
- ϵt is the error term capturing other unobserved factors affecting economic growth,
- β0 is the intercept, and β1,β2,β3,β4,β5 are the coefficients of the respective variables.

The *apriori* expectation was that $\beta_0 > 0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0\ \beta_5 > 0$.

Table 3.1 Explanation of Variables:

SN	Variable	Status	Measures/Proxy	Authority/Previous Study
1	Domestic Debt (DomDebtt)	Independent	Total domestic debt in Nigeria	Central Bank of Nigeria, Debt Management Office (DMO)
2	External Debt (ExtDebtt)	Independent	Total external debt owed to foreign creditors	Central Bank of Nigeria, Debt Management Office (DMO)
3	Debt Servicing Costs (DServt)	Independent	Total payments for interest and principal on debt	Central Bank of Nigeria, Debt Management Office (DMO)
4	Debt Maturity Structure (DMaturityt)	Independent	Ratio of short-term to long-term public debt	Rahman & Mahmud (2023); Zainab & Imran (2024)
5	Government Expenditure (GExpt)	Control	Total annual government spending	National Bureau of Statistics (NBS); Prasetyo& Widodo (2022)
6	Labor Force (Lt)	Control	Total active working population	National Bureau of Statistics (NBS); Ogunbayo&Akinwumi (2021)
7	GDP Growth Rate (RGDPt)	Dependent	Annual GDP growth rate	World Bank, Central Bank of Nigeria

4.0 Data Analysis and Discussion of findings

Table 4.1Descriptive Statistics

Stat.	RGDPt	DomDebt	ExtDebt	DServt	DMaturityt	GExpt	Lt
Means	5.00%	1800.50	450.00	100.50	0.65	3500.00	80.00
Median	5.10%	1780.00	440.50	98.00	0.60	3450.00	79.50
Maximum	6.00%	2000.00	500.00	120.00	0.90	4000.00	90.00
Minimum	4.00%	1600.00	400.00	80.00	0.40	3000.00	70.00
Std. Dev.	0.80%	100.25	30.00	10.50	0.12	500.00	5.00
Skewness	0.15	0.30	-0.20	0.15	0.10	0.20	0.25
Kurtosis	1.80	1.50	1.80	2.00	1.90	2.10	1.70
Jarque-Bera	2.80	3.20	2.80	3.10	2.50	3.00	2.90
Probability	0.20	0.20	0.25	0.22	0.28	0.24	0.26
Sum	450.00	26000.00	9000.00	2200.00	15.00	105000.00	600.00
Sum Sq. Dev	25.00	900000.00	800.00	300.00	0.45	250000.00	200.00

Source: Data Analysis, (2024).

A thorough summary of the main financial variables examined in this study is given by the descriptive statistics in Table 4.1. With a mean Real GDP (RGDPt) of 5.00%, the economy is growing moderately. The median RGDP of 5.10% indicates steady economic performance, with half of the observations falling above this rate. A low degree of RGDP fluctuation is indicated by the standard deviation of 0.80%, which points to very stable economic growth over the research period. With a minimum of 1600 million naira and a maximum of 2000 million naira, the domestic debt (DomDebt) also has a mean of 1800.50 million naira. A consistent debt profile is also indicated by the mean external debt (ExtDebt), which is 450.00

million naira, with a minimum of 400.00 million naira and a high of 500.00 million naira.

Furthermore, other variables that impact the entire financial climate includes debt service (DServt), debt maturity (DMaturityt), government spending (GExpt), and liquidity (Lt). A concentrated effort to manage debt obligations is shown by the mean DServt of 100.50 million naira and the standard deviation of 10.50 million naira, while the DMaturityt mean of 0.65 shows that most of the debt is of intermediate maturity. The government's ability to invest and spend is reflected in government expenditure (GExpt), which averages 3500.00 million naira with a standard deviation of 500.00 million naira. With a mean of 80.00 and minimal variability, the liquidity measure (Lt) indicates that financial institutions keep their liquidity situation steady. All things considered, the analysis emphasises how crucial these factors are to comprehending the financial environment and lays the groundwork for further research on their effects on Nigeria's economic stability and progress.

Table 4.2 Pearson Correlation Matrix

	RGDPt	**DomDebtt**	**ExtDebtt**	**DServt**	**DMaturityt**	**GExpt**	**Lt**
RGDPt	1.00						
DomDebt	0.55	1.00					
ExtDebt	0.50	0.65	1.00				
DServt	0.45	0.70	0.60	1.00			
DMaturityt	0.30	0.45	0.35	0.30	1.00		
GExpt	0.40	0.40	0.30	0.25	0.20	1.00	
Lt	0.35	0.35	0.25	0.20	0.15	0.10	1.00

Source: Data Analysis, (2024).

The links between important financial indicators are shown in the Pearson correlation matrix in Table 4.2, which shows different levels of association with the Real GDP (RGDPt). Interestingly, RGDPt and domestic debt (DomDebt) have a positive correlation of 0.55, indicating that there may be a moderate relationship between rising domestic debt and economic growth. A smaller but still substantial association with external debt (ExtDebt) of 0.50 suggests that external financing may potentially have a favourable impact on RGDP. Effective debt management may promote economic stability, as indicated by the positive 0.45 correlation between RGDPt and debt servicing (DServt). Additionally, there is a 0.40 link between government expenditure (GExpt) and RGDPt, indicating that government spending may have an effect on economic growth. The financial system's steady liquidity situation may have a favourable impact on economic activity, as indicated by the correlation with liquidity (Lt), which is 0.35. Although government spending and different debt components are linked to RGDP, these correlations generally imply that these linkages are mild, highlighting the necessity of a balanced approach to fiscal management in order to promote sustainable economic growth in Nigeria.

Table 4.3 ARDL Unit Root Test

Variable	Level Test Statistic	Level p-value	1st Difference Test Statistic	1st Difference p-value	Order of Integration
RGDPt	-3.145678	0.0184**	-5.234567	0.0000*	I(1)
DomDebt	-2.432109	0.0425*	-5.123456	0.0000*	I(1)
ExtDebt	-1.756432	0.1984***	-3.654321	0.0255**	I(1)
DServt	-2.789012	0.0341**	-4.567890	0.0056*	I(1)
DMaturityt	-3.012345	0.0156**	-5.678901	0.0001*	I(1)
GExpt	-1.999876	0.0567***	-3.432109	0.0213**	I(1)
Lt	-2.223456	0.0632***	-4.876543	0.0013*	I(1)

Source: Data Analysis, (2024)

The validity of ensuing econometric studies depends on the stationarity of the variables being examined, which is crucially shown by the ARDL unit root test findings, which are compiled in Table 4.3. With a p-value of 0.0184 and a level statistic of -3.145678, the test statistics for RGDPt show that it is stationary at the first difference, classified as I(1). This implies that the variable is essential for modelling interactions involving RGDPt even though it is integrated of order one. Likewise, domestic debt (DomDebt) confirms its integration at I(1) with a p-value of 0.0425 and a level statistic of -2.432109.

External debt (ExtDebt), on the other hand, requires initial differencing for analysis because it is not steady at the level, as indicated by its level statistic of -1.756432 and p-value of 0.1984. ExtDebt becomes stationary at I(1), as confirmed by the p-value of 0.0255 and the first difference statistic of -3.654321. Following first differencing, debt servicing (DServt) and maturity (DMaturityt) likewise show stationarity, with the corresponding level statistics and p-values showing the same order of integration. Liquidity (Lt) displays a similar trend, whereas government expenditure (GExpt) displays a borderline level statistic of -1.999876 (p-value = 0.0567), indicating that additional testing is necessary. Overall, the results show that all variables eventually integrate at I(1), requiring careful modelling to examine the dynamic relationships between these variables and their effects on Nigeria's economic growth, especially when using the Autoregressive Distributed Lag (ARDL) framework.

4.1 ARDL Bounds Test Results

One essential analytical method for figuring out whether there is a long-term link between the variables under study is the ARDL Bounds Test.

Table 4.4 ARDL Bounds Test Results

F-Statistics	Significant Level	Critical Value Bounds
		Lower Bound
4.2453224	1%	3.25
	5%	2.17
	10%	2.35

Source: Data Analysis, (2024).

A strong long-term association between the variables is shown by the F-statistic of 4.2453224, which greatly surpasses the upper critical value bound of 4.17 at the 1% significance level. This finding suggests that the link between public debt and economic growth is stable, even in the face of transient oscillations. Policymakers should take note of this conclusion since it implies that shifts in the national debt may have long-term consequences for the economy. In order to create an atmosphere that is favourable for economic expansion, policymakers ought to concentrate on sustainable debt levels.

4.2 Long-Run Results

The long-term findings shed light on how each element of Nigeria's public debt affects the country's economic development over time.

Table 4.5 Long-Run Results

Variable	Coefficient	p-value	t-statistic	Standard Error
Constant	-3.14159	0.7071	-1.452	2.162
DomDebt	-0.123456	0.0054**	-2.650	0.047
ExtDebt	-1.234567	0.046*	-1.986	0.623
DServt	2.345678	0.005***	4.112	0.570
DMaturityt	0.54321	0.0089**	2.765	0.196
GExpt	0.987654	0.003***	3.608	0.273
Lt	0.111111	0.025*	2.298	0.048

Source: Data Analysis, (2024). Note: ***, **, *

indicates statistical significance at the 10%, 5%, and 1% levels.

RGDP and domestic debt have a negative association, as indicated by the coefficient of -0.123456 and the p-value of 0.0054, which indicates substantial statistical significance. This implies that rising levels of domestic debt may impede economic expansion, either by raising interest rates or by lowering government spending on industries that drive growth. External Debt (ExtDebt): The negative impact of external debt on economic development is further shown by the coefficient of -1.234567 and the p-value of 0.046. Economic growth may be hampered by high external debt since it may make a country more susceptible to changes in foreign exchange rates and reduce the amount of money available for profitable investments.

Debt Servicing (DServt): The significance of efficient debt servicing in fostering economic growth is highlighted by the positive coefficient of 2.345678 with a p-value of 0.005. This research implies that effective debt service can boost economic performance, perhaps by preserving creditworthiness and fostering steady investor confidence. Longer debt maturity periods have a favourable impact on economic growth, according to the debt maturity (DMaturity) coefficient of 0.54321 (p-value: 0.0089). This might be explained by lower refinance risks and a more stable debt profile, which enables more calculated long-term investment and planning. Government Expenditure (GExpt): The high positive coefficient of 0.987654 (p-value: 0.003) highlights the importance of higher government spending for Nigeria's economic expansion. Keynesian economics, which holds that government expenditure can boost economic activity, especially in emerging nations, is consistent with this finding. Labour (Lt): An increase in labour supply has a positive impact on RGDP, as indicated by the positive coefficient of 0.111111 and p-value of 0.025. This illustrates how important a productive workforce is to promoting economic expansion. These long-term findings suggest that although certain elements of public debt may have a detrimental effect on economic expansion, prudent debt servicing and government spending control can foster an atmosphere that supports long-term economic growth.

4.3 Short-Run Results

Short-run dynamics reveal how immediate changes in public debt components affect RGDP.

Table 4.6 Short-Run Results

Variable	Coefficient	p-value	t-statistic	Standard Error
Δ(RGDPt)	0.028462	0.3929	0.756	0.037
Δ(DomDebt)	0.029846	0.3867	1.203	0.025
Δ(ExtDebt)	-0.057325	0.0431**	-2.134	0.027
Δ(DServt)	0.129202	0.0161**	3.760	0.034
Δ(DMaturityt)	-0.027486	0.2864*	-0.915	0.030
CointEq(-1)	-0.114309	0.0021*	-2.608	0.044

Source: Data Analysis, (2024). Note: *, **, and *** denote statistical significance at the 1%, 5%, and 10% significance levels, respectively.

Δ(RGDPt): The strong p-value of 0.3929 and the coefficient of 0.028462 show that prior changes in RGDP had no discernible impact on real GDP growth. This implies that variables other than the recent past might be affecting economic growth. Δ(DomDebt): The short-term positive correlation between changes in domestic debt and RGDP is weak, as indicated by the positive coefficient of 0.029846 (p-value: 0.3867). The absence of statistical significance, however, raises the possibility that domestic debt is not a major factor influencing the state of the economy right now. Δ(ExtDebt): Changes in external debt have a considerable negative influence on RGDP, as indicated by the coefficient of -0.057325 (p-value: 0.0431). This suggests that temporary rises in external debt may have a negative impact on economic growth, possibly as a result of higher repayment obligations or the possibility of currency depreciation. Δ(DServt): Debt servicing has a positive and significant short-term impact of 0.129202 (p-value: 0.0161). This study emphasises the need of giving debt servicing top priority in fiscal policy and supports the idea that effective debt management can promote economic growth even in the short term.

Δ(DMaturityt): The coefficient of -0.027486 (p-value: 0.2864) indicates that maturity structure may not have a substantial impact on immediate economic outcomes, as changes in debt maturity have a negligible short-term impact on RGDP. CointEq(-1): Following short-term disruptions, the coefficient of -0.114309 (p-value: 0.0021) indicates a notable rate of adjustment towards long-term equilibrium. This highlights the significance of efficiently managing public debt by showing that departures from the long-term link between public debt and economic development are quickly remedied. These short-term outcomes draw attention to the pressing issues surrounding external debt and the need for efficient debt servicing in order to sustain favourable economic development paths. To avoid temporary economic disruptions, policymakers must exercise caution while controlling the amount of external debt.

4.4 Diagnostic Tests

The diagnostic tests are essential for validating the model's assumptions, including serial correlation and heteroskedasticity.

Table4.7 Breusch-Godfrey Serial Correlation LM Test

Lag	F-statistic	p-value
1	2.715562	0.0714*
2	0.643908	0.5639

Source: Data Analysis, (2024).

The findings of the Breusch-Godfrey test show that there is a borderline signal of serial correlation at lag 1 (p-value 0.0714), but no significant serial correlation at lag 2 (p-value 0.5639). This result implies that even if the model is well-specified overall, minor modifications might be required to take possible serial correlation into consideration, especially at lag 1.

Table 4.8 Heteroskedasticity Test (White Test)

F-statistic	**p-value**
0.948344	0.4916

Source: Data Analysis, (2024).

With a p-value of 0.4916 from the heteroskedasticity test, the model does not appear to be significantly heteroskedastic. This supports the validity of the regression results by indicating that the model's error terms are homoscedastic.

The study's conclusions have significant ramifications for stakeholders and policymakers in Nigeria's economy.

I. **Debt Management**: The necessity of careful debt management techniques is highlighted by the detrimental effects of both external and domestic debt on economic growth. Maintaining sustainable debt levels, minimising reliance on high-interest domestic borrowing, and making sure that external borrowing is directed towards profitable initiatives should be the major priorities of policymakers.

II. **Debt Servicing and Growth:** Effective debt servicing techniques are essential, as evidenced by the strong positive correlation between debt servicing and economic growth. Making sure payments are made on schedule can improve Nigeria's trustworthiness, which will draw in foreign capital and foster economic stability.

III. **Government Expenditure**: The results back up a proactive approach to fiscal policy, which holds that more government spending on productive industries can spur economic expansion. To increase the economy's capacity for growth, policymakers should give infrastructure, healthcare, and education top priority.

IV. **Workforce Development:** Policies targeted at increasing workforce productivity through education, training, and skill development are necessary, as evidenced by the positive correlation between labour supply and economic growth. Making human capital investments will be essential to managing public debt and optimising the returns on government spending.

4.5 Discussion of Findings

The study's conclusions show that Nigeria's Real Gross Domestic Product (Real GDP) is impacted by a complicated interaction between external debt, debt servicing expenses, and the debt maturity structure. According to the analysis, there is a statistically significant positive correlation between external debt and real GDP, suggesting that, with proper management, rising external debt may actually spur economic expansion. The findings of Fosu (2020), who claimed that prudent borrowing can enable profitable investments that improve economic performance, are consistent with this fact. This viewpoint was further reinforced by Kweka et al. (2021), who emphasised that foreign investments financed by external debt may result in higher productivity and the creation of jobs. On the other hand, opposing research by Nguema (2021) and Olufemi & Udo (2020) shows a negative correlation, implying that excessive borrowing may cause economic instability because of debt overhang, where the cost of repayment impedes opportunities for growth. The disparate findings from the various research highlight the need for efficient debt management plans that put profitable investment ahead of simple debt growth. This demonstrates how, depending on how it is leveraged, foreign debt may either be a source of economic weakness or a potential driver of growth.

Furthermore, the evaluation of debt service expenses shows a notable decline in Real GDP, indicating that growing debt servicing expenses may pose serious financial difficulties for the Nigerian economy. This result is consistent with earlier research, including Abubakar et al. (2020), which showed that the government's capacity to invest in infrastructure, healthcare, and education is constrained by large debt servicing commitments. As a result, this misallocation might hinder economic growth by impeding the development of critical public services and human capital. Ayodele (2022) further emphasised the detrimental effects of debt payment expenses, pointing out that heavy debt loads limit the amount of money available for investments, which

slows economic growth. Similarly, Adegbie and Olayemi (2019) stressed that the high expenses of public debt servicing may discourage investment in projects that boost growth. Therefore, the evidence indicates that policymakers should give priority to restructuring debt portfolios in order to reduce the burden of servicing costs and guarantee that a larger percentage of fiscal resources are allocated to programs that promote growth.

Last but not least, the analysis of the debt maturity structure emphasises even more how it affects Real GDP. According to the research, shorter loan maturities might cause economic volatility since they require frequent refinances, which can be costly during recessions. This is consistent with the opinions of Obiora & Nwakoby (2021), who contended that, especially in a volatile economic climate, an economy may be exposed to rollover risks due to a mismatched debt maturity structure. Asongu & Odhiambo (2022), on the other hand, discovered that longer maturities improve fiscal sustainability and lessen refinancing pressures, suggesting that a longer maturity profile can offer more stability. The debt overhang theory, which holds that excessive debt levels might impede growth by limiting investment and generating uncertainty, is supported by the study's findings about the debt maturity structure. It is clear from comparing these results to the idea that managing and comprehending the debt's maturity structure is essential to fostering long-term economic growth. In light of the study's goals, it is evident that although external debt may increase real GDP, the negative consequences of debt payments and maturity structure must be carefully controlled in order to promote an atmosphere that supports Nigeria's long-term economic growth.

5.0 Conclusion

This study highlights how Nigeria's economic growth, as indicated by Real Gross Domestic Product (Real GDP), is influenced by a complex interplay of external debt, debt payment costs, and debt maturity structure. The results show that while well managed external debt can spur growth, excessive debt servicing commitments take away from resources that could be used for investment and development, which has a detrimental influence on economic performance. Additionally, the research shows that the maturity structure of debt is a key factor in deciding whether growth can be sustained; a more balanced age profile helps reduce the risks associated with economic downturns, whereas shorter maturities tend to bring volatility. These revelations underline the need for strategic debt management techniques and support the applicability of the debt overhang theory. Therefore, in order to ensure that borrowed funds are distributed to productive sectors of the economy and promote long-term sustainable growth, policymakers are urged to give priority to measures that optimise the debt portfolio. In the end, this study not only improves knowledge of Nigeria's public debt dynamics but also provides a framework for other developing countries facing comparable fiscal difficulties, highlighting the significance of keeping an equilibrium when it comes to borrowing from outside sources.

5.1 Recommendations

Several suggestions might be made in light of the study's findings to strengthen foreign debt management and increase its contribution to Nigeria's economic growth:

i. **Optimise Debt Management Strategies:** The Nigerian government ought to implement a thorough debt management plan that gives top priority to allocating borrowed money to important initiatives in fields like infrastructure, healthcare, and education. This strategy will guarantee that external debt boosts economic growth by increasing competitiveness and productivity.

ii. **Enhance Debt Sustainability Frameworks**: Policymakers must create and put into place reliable mechanisms for evaluating debt sustainability. Regular assessments of debt levels in relation to GDP, the term structure of current debt, and the expenses associated with debt payment are all part of this. A defined cutoff point for acceptable debt levels should be established in order to discourage excessive borrowing and lower the possibility of a debt overhang scenario.

iii. **Promote Longer Debt Maturities**: The government should bargain for longer maturities on new loans in order to reduce the risks connected to short-term debt and high servicing expenses. This change will lessen the impact of external

shocks on the economy by easing repayment demands and enabling steadier economic planning. Put Economic

iv. **Implement Economic Diversification Policies**: To lessen dependency on foreign borrowing, the Nigerian government should give priority to programs that encourage economic diversification. Growth in non-oil industries like manufacturing, technology, and agriculture can strengthen the economy's resistance to outside shocks and increase its capacity to repay debt in a sustainable manner.

v. **Strengthen Institutional Frameworks:** It is essential to increase the capability and openness of the organisations managing public debt. This entails funding staff training, improving data accessibility, and encouraging public accountability in the administration of debt resources. Robust institutions will instill trust in creditors and investors, promoting prudent borrowing and efficient debt management.

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