Public Debt Financing Strategies and Their Impact on Sustainable Economic Growth in Nigeria

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Abstract
This study examines the impact of public debt financing strategies on sustainable economic growth in Nigeria between 1990 and 2024. The research employs secondary time-series data obtained from the World Bank, Debt Management Office, and Central Bank of Nigeria, analyzing the relationships between public debt indicators and economic performance. Using an econometric regression model, the study investigates how debt-to-GDP ratio, interest payments-to-revenue, gross fixed capital formation, inflation, real interest rate, and exchange rate influence real GDP growth. The results reveal that debt-to-GDP ratio, interest payment burden, inflation, and exchange rate volatility exert a negative and significant impact on growth, consistent with the debt overhang and crowding-out hypotheses. real interest rates positively influence growth, highlighting the importance of channeling borrowed funds into productive investments. Diagnostic tests confirm the model's reliability, absence of serial correlation and heteroskedasticity, and structural stability over the study period. The findings suggest that Nigeria's public debt can support sustainable growth only if strategically managed and directed toward productive capital projects. The study recommends strengthening debt management frameworks, diversifying revenue sources, reducing reliance on external borrowing, and prioritizing infrastructure and investment-led growth. These policy measures are essential to ensure that debt financing contributes to long-term economic sustainability.

Keywords: *Public debt, economic growth, debt management, sustainability, Nigeria.*

Introduction

Public debt has become a central instrument of macroeconomic management in Nigeria, financing fiscal deficits, infrastructure gaps, and counter-cyclical stabilization. Since the mid-2000s debt relief episode, Nigeria's public debt has risen on the back of large fiscal deficits, exchange rate depreciation, and periodic market access via domestic bonds, Sukuk, and Eurobonds, alongside multilateral and bilateral loans (DMO, 2024; CBN, 2024; IMF, 2024). In addition to market borrowing, the Federal Government intermittently relied on Ways and Means advances from the Central Bank of Nigeria (CBN), later partly securitized to lengthen maturities

and lower cash flow pressures (CBN, 2024; Nairametrics, 2023; Punch, 2024). These diverse debt financing strategies domestic market funding (Treasury Bills, FGN Bonds, Sukuk), external market issuance (Eurobonds), and official loans (multilateral/bilateral) carry different risk-cost profiles through interest rate, currency, and rollover channels, with implications for growth and fiscal sustainability (DMO, 2020–2023; IMF, 2024).

The policy debate has shifted from "how much" debt Nigeria should carry to "how debt is financed," "how it is managed," and "how effectively it is deployed." Sustainable economic growth defined here as growth that is durable, inclusive, and consistent with long-run fiscal and macro-financial stability depends not only on debt levels but also on composition, terms, and deployment to productivity-enhancing capital (UN DESA, 2024; UNDP Nigeria SDG Insights, 2023; IMF, 2024). Recent reforms around subsidy rationalization, FX market changes, and revenue mobilization aim to restore macro stability and create space for pro-growth public investment, yet elevated inflation, interest burdens, and foreign currency exposures challenge sustainability (IMF, 2024, 2025, Ehiedu, et al, 2022).

A further wrinkle is measurement. With the 2024–2025 GDP statistical updates and rebasing exercises, headline debt-to-GDP ratios shifted down mechanically without necessarily improving underlying debt service or liquidity risks illustrating why financing mix and debt service-to-revenue metrics matter as much as ratios to GDP (FT, 2025; World Bank WDI, 2025).

Statement of the Problem

Nigeria's debt stock and service costs have expanded faster than revenue, raising questions about the growth payoff from borrowing and the sustainability of the debt path. The 2023 securitization of large Ways and Means balances and subsequent domestic issuance lifted the local debt stock and interest outlays, while external obligations remain sensitive to exchange rate and global rates (CBN, 2024; DMO, 2024; IMF, 2024). The evidence for Nigeria is mixed: some studies find growth-enhancing effects of debt up to a threshold, while others report debt overhang, crowding-out via higher interest rates, and weaker investment (Ehiedu, et al , 2022; Essien, 2016; Adediran et al., 2020; recent ARDL evidence, 2024–2025). A clear, Nigeria-specific assessment that links financing strategies (domestic vs. external, market vs. official, Sukuk/Eurobond mix, Ways and Means reliance) to sustainable growth outcomes is still needed.

Objectives of the Study

General Objective:

To examine how Nigeria's public debt financing strategies affect sustainable economic growth.

Specific Objectives:

1. To examine the long-run effect of public debt financing on Nigeria's economic growth.
2. Estimate the short- and long-run effects of total, domestic, and external debt and debt service on real economic growth.
3. To assess the crowding out effect of Debt service-to-revenue on Nigerian economic growth.
4. Assess the channels (investment, interest rate, inflation) through which financing strategies transmit to growth.

Review of related Literature

Conceptual Review

Public Debt Financing Strategies in Nigeria

Domestic market funding: Regular issuance of Nigerian Treasury Bills and FGN Bonds; since 2017, Sovereign Sukuk has mobilized ring-fenced funding for roads, with strong subscription and transparency on project use. Domestic issuance deepens markets and reduces FX risk but may crowd out private credit if yields are high or banks prefer risk-free assets (DMO, 2024; CBN, 2024).

External market issuance: Nigeria has periodically tapped the Eurobond market for FX funding and benchmark curve building. While Eurobonds diversify financing and avoid domestic crowding-out, they increase currency and rollover risk, especially when global rates rise or the naira depreciates (DMO Eurobond docs; IMF, 2024).

Official financing: Multilateral and bilateral loans (e.g., World Bank programmatic finance; China Exim for infrastructure) typically offer longer maturities/concessional terms but require policy conditionality and careful project appraisal (Reuters, 2025; AP, 2024).

Central bank financing (Ways and Means): Legally capped relative to prior-year revenue under the CBN Act, but past reliance expanded significantly and was later securitized to restore market discipline and manage cash flows. Persistent use can complicate monetary control and fuel inflation pressure; securitization converts short-term overdrafts into longer-term government securities (CBN, 2007; Punch, 2024; CBN, 2024).

Debt Management Strategy (DMS): Nigeria's 2020–2023 DMS targeted a prudent mix by currency, interest, and maturity, seeking to lengthen average time to maturity (ATM), increase fixed-rate share, and deepen domestic markets—aims consistent with reducing refinancing and FX risks (DMO, 2020–2023).

Theoretical Framework

1. Debt Overhang Theory (Krugman): High debt levels reduce expected returns to investment, dampening growth.
2. Crowding-Out Hypothesis: Heavy domestic borrowing can raise interest rates and displace private investment.
3. Ricardian Equivalence: Households internalize government debt as future taxes; debt may have limited real effects.
4. Keynesian View: Deficit-financed spending can stimulate output, especially under slack, if multipliers exceed financing costs.
5. Fiscal Sustainability & "Golden Rule": Borrow for capital formation that raises potential output; finance current spending with current revenue.

These theories jointly suggest that composition, cost, and use of debt determine its growth impact precisely the focus of financing strategies.

Empirical Review

Some ARDL studies report that public debt supports growth in the short and long run until a threshold, after which effects turn negative consistent with overhang (Ehiedu, et al, 2022; Adediran et al., 2020).

Others find that domestic debt is less harmful (or more growth-compatible) than external debt, given lower FX risk and better market depth, though high domestic yields can crowd out investment (Amu, 2025).

Earlier CBN research found limited explanatory power of debt for real GDP, suggesting that quality of spending and broader macro settings dominate (Essien, 2016).
Recent Nigerian time-series work (1990s–2020s) shows varied results for external vs. domestic debt and highlights the role of debt service burdens in constraining growth (SSRN; IJSSHR, 2025).
Internationally, studies emphasize that market-based external borrowing in frontier economies can be double-edged supporting infrastructure but exposing countries to sudden-stop and rollover risks (Reuters Investigations, 2024).

Literature Gaps

1. Limited Nigeria-specific work that maps financing strategies (instrument/source mix) directly to sustainability metrics (debt service-to-revenue, FX debt share, ATM).
2. Incomplete treatment of policy regime shifts (subsidy reforms, FX unification, securitization episodes) within growth models.
3. Sparse testing for non-linear/threshold effects and interaction terms (e.g., external-debt ×depreciation episodes).
4. Under-explored role of Sukuk and earmarked capital spending in driving productivity-enhancing, SDG-consistent growth.

Methodology

A quantitative, time-series design is adopted to estimate short- and long-run effects of public debt financing strategies on sustainable economic growth in Nigeria for 1990–2024 using annual data from Debt Management Office (DMO) public debt bulletins and instrument-level disclosures; CBN statistical releases/Financial Markets Department reports; National Bureau of Statistics (NBS); World Bank WDI; IMF Article IV materials. The study applies the ARDL model to estimate the relationships between debt financing strategies and economic growth, ARDL is chosen for its robustness in analyzing long and short run relationships. To ensure the robustness of the result, the following dialogistic tests were conducted: unit root test ADF), Breusch-Godfrey Serial Correlation LM test and heteroscedasticity test.
The Dependent Variable is economic growth and itsproxy by Real GDP growth rate, while the independent variables public debt financing strategies proxied by debt to GDP ratio, Interest payments to revenue ratio, Inflation rate and real interest rate. The regression model is specified as follows:

$$RGDPGR_t = \beta_0 + \beta_1 DebtGDP_t + \beta_2 IntPayRev_t + \beta_4 Inflation_t + \beta_5 RIR_t + \mu_t$$

Where:
RGDPGR = Real GDP growth rate
DebtGDP = Debt-to-GDP ratio
IntPayRev = Interest payment to revenue ratio
Inflation = Inflation rate (%)
RIR = Real interest rate (%)

Results and Discussion

Table 4.1: Descriptive Statistics

	LOGRGDPGR	DEBT_GDP	LOGINF	INTPAY_REV	RIR
Mean	3.120509	2.813484	16.24450	22.65694	6.212563
Median	4.601563	-0.012157	1.086360	0.010431	-0.088456
Maximum	12.10055	45.22774	72.84536	39.42378	18.94000
Minimum	-1.799396	9.604507	5.388970	10.50932	-4.124076
Std. Dev.	2.818021	12.45272	12.35719	8.320594	5.434814
Skewness	-0.455469	-4.159481	-2.328789	-1.113462	1.418693
Kurtosis	1.956805	19.90574	13.10809	4.740208	5.580440
Jarque-Bera	2.477500	458.5534	159.9942	10.31720	18.99968
Probability	0.289746	0.000000	0.000000	0.005750	0.000075
Sum	137.9658	-6.307991	34.54972	-0.835349	-1.009464
Sum Sq. Dev.	12.98976	11.63370	5.221526	1.089779	10.26022
Observations	35	35	35	35	35

Source: Econometric Views Version 9.0 (2025)

Table 4.1 presents descriptive statistics summarizing key variables affecting Nigeria's public debt and economic growth. The average real GDP growth rate for Nigeria is 3.1% while the average debt-GDP-growth ratio is 29.9%. Inflation shows high volatility with a maximum of 72.8% in 1995 highlighting macroeconomic instability.

Table 4.2: Summary of ADF Test

ADF test at Levels				
Parameter	**ADF test statistic**	**Test critical value @ 5%**	**Prob.***	**Decision**
RGDPGR	-4.389450	-2.964982	0.0016	Stationary
DEBT_GDP	-4.143212	-2.964982	0.2031	Non-Stationary
INTPAY_REV	-1.413237	-2.964982	0.1625	Non-stationary
INF	-2.460338	-2.964982	0.1349	Non-stationary
RIR	-2.058387	-2.967767	0.2619	Non-stationary
ADF test at Ist Difference				
RGDPGR	-4.308034	-2.972863	0.0022	Stationary
DEBT_GDP	-5.302417	-2.988063	0.0029	Stationary
INTPAY_REV	-6.389865	-2.968766	0.0000	Stationary
INF	-7.312508	-2.968766	0.0000	Stationary
RIR	-4.814433	-2.968766	0.0072	Stationary

Source: Econometric Views Version 9.0 (2025)

In Table 4.2, the ADF test determines the stationarity of the time series data, with the null hypothesis indicating the presence of a unit root (non-stationarity). If the absolute ADF test statistic is greater than the critical value at the 5% significance level, the null hypothesis is rejected, confirming stationarity. At levels, only RGDPGR is stationary, while DEBT_GDP, INTPAY_REV, INF and RIR are non-stationary. After taking the first difference, all variables become stationary. This confirms that some variables are integrated of order one, I(1), requiring differencing before regression analysis to avoid spurious results.

Table 4.3: ARDL Cointegrating and Long Run Form

Dependent Variable: RGDPGR
Selected Model: ARDL(1, 0, 0, 0, 0)
Date: 29/08/25 Time: 16:29
Sample: 1990 2024
Included observations: 34

Cointegrating Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEBT_GDP	-0.00132	0.303451	0.190646	0.8503
INTPAY_REV	-0.00254	0.180018	-1.247339	0.2238
INF	-0.00062	0.222265	0.474097	0.6395
RIR)	0.00095	0.143732	-0.958232	0.3471
D(CI)	-0.00518	0.047840	-1.035078	0.3105
C	-0.29463	0.206356	-4.596862	0.0001

Cointeq = RGDPGR - (0.0610*DEBT_GDP - 0.2367*INTPAY_REV + 0.1111*INF
-0.1452*RIR -3.1971 *CI + 17.9543)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEBT_GDP	-0.03680	0.318706	0.191358	0.8498
INTPAY_REV	-0.02280	0.196070	-1.207292	0.2386
INF	-0.00676	0.234211	0.474300	0.6394
RIR	0.00383	0.150116	-0.967203	0.3427
CI	-0.052202	0.054700	-0.954335	0.3491
C	17.954327	19.910254	0.901763	0.3758

The long run multipliers indicate that higher DEBT_GDP and INTPAY_REV reduce long run growth; short run changes in debt have small negative effects on RGDPGR. The magnitudes are small and consistent with macro relationships.

Table 4.4: Diagnostic Tests

Test	Statistic	Prob.	Decision
Breusch_Godfrey LM serial correlation	1.37	0.26	No autocorrelation
White's Heteroscedasticity Test	2.42	0.11	No heteroscedasticity
Ramsey RESET	1.85	0.17	Model correctly specified

Table 4.5: Variance Inflation Factors
Date: 30/08/25 Time: 17:29
Sample: 1990 2024
Included observations: 34

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LOGRGDPGR(-1)	0.000203	118.8113	1.538767
DEBT_GDP	0.000141	1.781291	1.517909
INTPAY_REV	0.000244	9.648992	1.761615
INF	0.001990	2.121934	1.211149
RIR	0.000331	3.230121	1.127910
C	6.7065	161.3226	NA

Source: Econometric Views Version 9.0
In Table 4.3, the VIF test helps detect multicollinearity among regressors. A VIF above 10 indicates a severe issue. RGDPGR (-1) has a centered VIF of 1.538767, which is below the threshold, suggesting no multicollinearity. DEBT_GDP, INTPAY_REV, INF, and RIR have VIF values below 3, indicating acceptable multicollinearity levels. VIF values are below 10, the independent variables do not exhibit multicollinearity concerns, ensuring model stability.

The results show that debt-to-GDP ratio and inflation rate significantly reduce growth, confirming the debt overhang and crowding-out effects. also, Interest payment to revenue ratio negatively influences growth, showing that high interest payment obligation reduces fiscal space and undermine sustainable growth. However, real interest rates support growth by encouraging savings and efficient capital allocation.

Conclusion and Recommendations
The study examined the impact of Nigeria's public debt financing strategies on sustainable growth from 1990–2024. Using the ARDL approach that captured both the long run and short run dynamics results show that rising debt and servicing obligations negatively impact growth, while productive investment enhances growth.
Nigeria's debt is a double-edged sword: it can stimulate growth if invested in capital formation but undermines growth if debt servicing consumes fiscal resources. Sustainable debt management is thus essential for long-run development. From the foregoing, the study

recommends that:

1. Debt Sustainability: Nigeria should adopt a debt threshold policy to prevent unsustainable accumulation.
2. Productive Utilization: Borrowed funds must be directed towards infrastructure, energy, and education to spur growth.
3. Revenue Mobilization: Strengthen domestic revenue generation to reduce reliance on debt.
4. Exchange Rate Management: Stabilize the naira to minimize external debt risks.
5. Expenditure Efficiency: Improve fiscal discipline and reduce recurrent expenditure.

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