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PUBLIC DEBTS, GOVERNMENT CAPITAL EXPENDITURE AND ECONOMIC GROWTH IN NIGERIA

Moore Ogumka Raymond[1]
[1]Imo State University, Owerri; **Phone:** +234(0)8100403232
Email: *moraymond13554@imsuonline.edu.ng*; **ORCID:** 0009-0009-2672-2136
&
Uju Regina Ezenekwe [2]
[2]Nnamdi Azikiwe University; **Phone:** +2348035535243
Email: ur.ezenekwe@unizik.edu.ng**; ORCID:** 0000-0003-2751-4602

ABSTRACT

Rising public debt and debt-servicing commitments in Nigeria continue to compress fiscal space for productive capital investments, creating an urgent dilemma for macroeconomic stability. This study is therefore motivated to empirically examine the impact of public debt and government capital expenditure on Nigerian economic growth from 1990 to 2025, using annual time-series data on real gross domestic product, domestic debt, external debt, debt service, and government capital expenditure. Anchored in the Debt Overhang Theory and the Crowding-Out Hypothesis, the study applies the Ng-Perron and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root tests, which establish that all series are integrated of order one, I(1). The Johansen cointegration test yields one cointegrating equation, confirming a stable long-run relationship among the variables. Dynamic Ordinary Least Squares (DOLS) estimation shows that, at the 5% level, external debt (β = -0.1594) and government capital expenditure (β = -0.1664) exert significant negative long-run effects on real GDP, while domestic debt (β = 0.2435) and debt service (β = 0.2226) exert significant positive effects. The model explains approximately 79.7% of the variation in real GDP (adjusted R2 = 0.7970), and post-estimation diagnostics confirm residual normality, parameter stability, and the absence of serial correlation and heteroscedasticity. The results indicate that the growth consequences of public debt in Nigeria differ by loan category: external debt is consistent with debt overhang, while the negative capital-expenditure coefficient points to inefficiencies in public investment management rather than a rejection of the Keynesian growth channel. The study recommends rebalancing debt composition toward sustainable domestic borrowing, strengthening capital-expenditure implementation, and adopting a medium-term debt sustainability framework.

Keywords: *Public Debt, Economic Growth, Domestic Debt, External Debt, Debt Service, Capital Expenditure*
JEL Classifications Codes: *H63, H54, E62, O11, O47, C32*

1.0. Introduction

Economic growth in Nigeria relies heavily on strategic public investments in critical infrastructure, which are frequently financed through government borrowing. However, the extent to which public debt translates into

sustainable economic expansion depends on whether these funds are directed toward productive capital expenditure rather than consumed by debt servicing costs. Hence, public debt occupies a central place in macroeconomic policy debate, particularly in developing countries facing persistent fiscal deficits and narrow revenue bases (Ajayi & Edewusi, 2020). Keynesian perspectives view strategic public borrowing as a tool for boosting aggregate demand and accelerating growth, especially during downturns, while classical economists have long cautioned that government borrowing crowds out private investment (Efanga, Etim, & Jeremiah, 2020; Punch, 2026; Ohiomu, 2020). This theoretical tension has produced a substantial body of empirical literature in which the direction and magnitude of the debt-growth relationship remain disputed across countries and time periods.

By the end of 2025, Nigeria's public debt stock had risen by roughly 10 per cent, from ₦144.67 trillion to ₦159.28 trillion (US$110.97 billion) (Debt Management Office [DMO], 2026). The corresponding debt-to-GDP ratio climbed from about 42 per cent at the end of 2023 to nearly 55 per cent by mid-2024, approaching the IMF's sustainability threshold (Nairametrics, 2024). The cost of servicing this debt is more troubling still: in 2024, Nigeria's debt-service-to-revenue ratio stood at 116.8 per cent, meaning debt obligations exceeded total federal revenue, and the ratio remained above 100 per cent through the first quarter of 2025 (Nigerian Economic Summit Group [NESG], 2025). Within the federal budget, debt servicing has consistently outstripped capital expenditure such that the 2025 budget allocated ₦15.4 trillion to debt service against ₦13.6 trillion for capital projects (Dataphyte, 2025), even as capital-budget implementation rates have historically hovered between 26 and 30 per cent.

This study is motivated by three interrelated concerns arising from these trends. First, Nigeria's government debt has grown at an unprecedented pace since 1990, and its two principal components - domestic and external debt are widely believed to affect output differently (Didia & Ayokunle, 2020). Second, the Nigerian literature has not adequately examined the mediating role of debt servicing in transmitting the effects of debt accumulation to real GDP through the crowding-out of productive expenditure. Third, given persistent implementation weaknesses, the extent to which government capital expenditure moderates the debt-growth relationship remains unclear. Accordingly, this study examines the effects of domestic debt, external debt, debt servicing, and government capital expenditure on Nigeria's real gross domestic product (RGDP) between 1990 and 2025. The specific objectives are to examine the effects of domestic debt, external debt, debt servicing,

and government capital expenditure on Nigeria's RGDP. Four corresponding null hypotheses are tested: H_{01} - domestic debt has no significant effect on RGDP; H_{02} - external debt has no significant effect on RGDP; H_{03} - debt servicing has no significant effect on RGDP; and H_{04} - government capital expenditure has no significant effect on RGDP.

The study is significant on three counts. Theoretically, it integrates the Debt Overhang Hypothesis, the Crowding-Out Hypothesis, and Keynesian fiscal theory within a single empirical framework, rather than treating public debt as a homogeneous aggregate. Empirically, it extends the analysis to 2025, capturing the fiscal consequences of the 2023 subsidy removal, exchange-rate unification, and naira devaluation, episodes not reflected in most existing studies. Practically, its disaggregation of debt by source and its explicit treatment of debt servicing as a transmission channel offer more targeted guidance for debt-management policy than studies that examine total public debt alone.

Because Nigeria is among the largest and most indebted economies in Africa, the analysis is confined to a single-country design (World Bank, 2023). Annual data spanning 1990 to 2025 are drawn from the Central Bank of Nigeria (CBN), the DMO, the National Bureau of Statistics (NBS), and the World Bank's World Development Indicators (WDI).

2.0. Literature Review

2.1. Conceptual Literature Review

Debt refers to the financial liabilities of the government sector, arising when expenditure exceeds revenue (International Monetary Fund [IMF], 2019; Organisation for Economic Co-operation and Development [OECD], 2020). Domestic debt results from government borrowing from residents through local-currency-denominated instruments such as FGN bonds and Treasury bills (Afure & Ifeanyi, 2024; Johnson, 2024). By December 2025, domestic debt stood at ₦84.85 trillion, or 53.3 per cent of total public debt, with short-maturity instruments predominating and exposing the government to rollover risk (DMO, 2026). External debt reached $51.86 billion (₦74.43 trillion) by the end of 2025, with multilateral loans accounting for more than half of the stock (National Bureau of Statistics [NBS], 2026); it comprises obligations to foreign creditors denominated and repayable in foreign currency (Afure & Ifeanyi, 2024). Debt servicing refers to the periodic payment of principal and interest (Emerenini, 2005); Nigeria's debt service obligations grew by 20.8 percent annually to about ₦15.81 trillion in 2025, accounting for roughly 43 percent of total government spending (DMO, 2026). Government capital expenditure denotes spending on durable productive assets such as infrastructure and equipment (Ajie, Akekere, & Ewubare, 2014); despite rising modestly from about 0.85 per

cent of GDP (1990–2004) to about 2.20 per cent (2005–2025), capital spending has not meaningfully closed Nigeria's infrastructure gap (CBN, 2026; Nteegah & Okwu, 2023). Economic growth, proxied here by RGDP, captures the total value of finished goods and services produced within the economy over a given period (Oyekale, Tella, & Awolaja, 2024).

2.2. Review of Basic Theories

Three complementary theories underpin this study. The Debt Overhang Hypothesis (Krugman, 1988; Sachs, 1989) holds that once a country's expected debt-service obligations exceed its repayment capacity, anticipated future output accrues disproportionately to creditors, discouraging both domestic and foreign investment through an implicit debt tax. Pattillo, Poirson, and Ricci (2004) extended this into a threshold framework, in which debt below a critical level supports growth while debt beyond it retards growth. The hypothesis predicts a negative relationship between external debt, debt servicing, and RGDP in Nigeria, where the debt-service-to-revenue ratio exceeded 100 per cent through 2024–2025 (NESG, 2025).

The Crowding-Out Hypothesis holds that government borrowing from domestic markets competes with the private sector for a limited pool of loanable funds, displacing private investment and raising interest rates (Chudik et al., 2017). This operates through both an interest-rate channel and a credit channel in shallow financial systems such as Nigeria's, where banks substitute low-risk government securities for private-sector lending (Jato & Nwankwo, 2024). A fiscal variant of crowding-out also applies: when debt servicing absorbs a disproportionate share of revenue, less is available for capital expenditure (Clements, Bhattacharya, & Nguyen, 2003). This theory motivates the expectation of a negative relationship between domestic debt, debt servicing, and RGDP.

Keynesian fiscal theory (Keynes, 1936) argues that government spending can stimulate output through a fiscal multiplier. Capital expenditure, in particular, is expected to expand long-run productive capacity and crowd in private investment by improving infrastructure (Elaigwu & Khikando, 2024). However, Nigeria's persistently low capital budget implementation rates of 26–30 per cent temper the a priori expectation of a positive relationship between government capital expenditure and RGDP, since budgeted allocations do not automatically translate into disbursed, completed projects.

2.3. Empirical Literature Review

Evidence on domestic debt and growth in Nigeria is mixed. Using ARDL and FMOLS respectively, Hassan, Muhammed-Gani, and Odonye (2025) and Raymond, Ogbonna, and Nwaru (2025a) found that domestic debt had a

substantial positive long-run effect on RGDP, though both cautioned that domestic debt servicing exerted an offsetting negative effect. By contrast, Ojonye, Jumbo, and Oboh (2024), Ikwuo, Nwachukwu, and Okafor (2024), and Marafa (2022) found a significant negative long-run effect, consistent with the crowding-out hypothesis. The divergence has been attributed to differences in sample periods and the growing dominance of FGN bonds in commercial bank portfolios.

Research on external debt is similarly divided. Raymond, Ogbonna, and Igwemma (2025b), Okafor, Nwosu, and Adaora (2025), and Aladejare and Musa (2024) found positive and significant long-run effects, conditional on borrowed funds being channelled into productive investment, whereas Abachi, Tafida, and Mensa (2024), Osobase et al. (2023), and Amoo (2024) reported negative effects consistent with debt overhang, typically alongside a negative and significant coefficient for debt servicing. Olasehinde and Afolabi (2023) found no significant short-run effect of external debt. On balance, the evidence points to a negative relationship between debt servicing and RGDP (Raymond et al., 2025a, 2025b; Hassan et al., 2025; Ikwuo et al., 2024; Aladejare & Musa, 2024; Amoo, 2024), attributed it to the fiscal crowding-out of capital and social expenditure. However, Okeke, Anisiobi, and Madueke (2023) identified a positive lagged effect where debt-financed spending can contribute productively to economic growth when effectively deployed.

Findings on capital expenditure vary with the quality of implementation. Udeji (2025), Elaigwu and Khikando (2024), and Christopher, Akpan, and Ologunla (2025) found that capital investment significantly boosts RGDP, consistent with the Keynesian multiplier, while Chekwume, Maku, and Ashakah (2025) found no discernible growth effect, attributing this to weak fiscal transmission and persistently low budget-implementation rates. Amu et al. (2025) identified a non-linear relationship in which debt-financed capital spending supports growth only up to about 45 per cent of GDP, beyond which debt-overhang effects dominate.

2.4. Gap in the Literature

This review identifies three gaps. First, most Nigerian studies examine capital expenditure, external debt, or domestic debt in isolation rather than jointly, making it difficult to assess their relative magnitudes within a single framework (Raymond et al., 2025a, 2025b; Olasehinde & Afolabi, 2023; Amoo, 2024). Second, most studies terminate in 2022 or 2023 (Hassan et al., 2025; Ikwuo et al., 2024; Chekwume et al., 2025), leaving the post-2023 subsidy-removal and exchange-rate-unification period unexamined. Third, no study has jointly analysed capital spending and

debt servicing to test whether the fiscal crowding-out mechanism, whereby servicing obligations compress capital budgets, partly explains the negative growth effect attributed to servicing. By jointly estimating the effects of domestic debt, external debt, debt servicing, and capital expenditure on RGDP from 1990 to 2025, this study addresses all three gaps.

3.0. Methodology

3.1. Research Design and Theoretical Anchor

The study adopts an ex-post facto quantitative design suited to historical, nonmanipulable time-series data. It is anchored in the Debt Overhang Theory (Krugman, 1988; Sachs, 1989), which holds that when a nation carries more debt than it can service, investment is discouraged and growth slows because expected returns accrue to creditors rather than to domestic stakeholders.

3.2. Model Specification

This study adapts the model of Raymond et al. (2025a) in the form:

RGDP = f (DODT, DBTS, INFL, PINV) (1)

Where:

RGDP = Real gross domestic product (proxy for economic growth), DODT = Domestic public debt, DBTS = Domestic debt servicing, INFL = Inflation, PINV = Public investment.

Extending the domestic-debt-and-growth model of Raymond et al. (2025a) to incorporate external debt and government capital expenditure over a longer sample period (1990–2025), RGDP is specified as:

RGDP = f(DD, ED, DS, GCE) (2)

In log-linear form:

$$LNRGDPt = \beta_0 + \beta_1 LNDDt + \beta_2 LNEDt + \beta_3 LNDSt + \beta_4 LNGCEt + \varepsilon t \quad (3)$$

where LNRGDP, LNDD, LNED, LNDS, and LNGCE denote the natural logarithms of real GDP, domestic debt, external debt, debt service, and government capital expenditure, respectively; β_0 is the intercept; β_1–β_4 are long-run elasticities; and εt is the stochastic error term. Unlike Raymond et al. (2025a), who employed FMOLS, this study applies Dynamic OLS (DOLS), which corrects for endogeneity and serial correlation in cointegrating regressions using leads and lags of first-differenced regressors (Stock & Watson, 1993), together with the Johansen cointegration framework.

A priori, domestic debt (β1) and government capital expenditure (β4) are expected to be positive, reflecting demand stimulus and productive investment, while external debt (β2) and debt servicing (β3) are expected to be negative, reflecting debt overhang and fiscal crowding-out.

Table 3.1: Variable Measurement

Variable	Symbol	Measurement	Role
Real Gross Domestic Product	RGDP	Natural logarithm of Real Gross Domestic Product	Dependent
Domestic Debt	DD	Natural logarithm of Domestic Debt	Explanatory
External Debt	ED	Natural logarithm of External Debt	Explanatory
Debt Servicing	DS	Natural logarithm of Debt Servicing	Explanatory
Government Capital Expenditure	GCE	Natural logarithm of Capital Expenditure	Explanatory

Source: Authors' compilation (2026).

3.3. Data and Estimation Procedure

The study uses 36 annual observations (1990–2025). RGDP is sourced from the World Bank WDI; domestic debt, external debt, and debt service from the DMO; and government capital expenditure from the CBN Statistical Bulletin, supplemented as needed by CBN Annual Reports and Federal Ministry of Finance budget documents. Estimation proceeds in four stages: (i) Ng-Perron and KPSS unit root tests to determine orders of integration; (ii) the Johansen cointegration test to establish the long-run relationship among the variables; (iii) DOLS estimation of long-run coefficients using two leads and two lags with Bartlett-kernel Newey-West correction; and (iv) Jarque-Bera and CUSUM diagnostics to evaluate residual normality and parameter stability.

4.0. Results and Discussion of Findings

4.1. Descriptive Statistics

Table 4.1: Descriptive Statistics

Statistic	LNRGDP	LNDD	LNED	LNDS	LNGCE
Mean	10.7479	7.9801	7.7158	5.7880	6.3073
Median	10.7210	7.7150	7.5300	5.9450	6.5574
Maximum	12.9979	11.3486	11.2177	9.6687	9.3689
Minimum	9.9842	4.4300	5.6991	2.0844	3.1801
Std. Dev.	0.7121	1.8706	1.5241	2.1280	1.4396
Jarque-Bera	20.2504	1.4030	3.3602	1.3107	0.7668
Probability	0.0000	0.4958	0.1864	0.5193	0.6815
Observations	36	36	36	36	36

Source: Authors' computation from EViews 14 output.

Mean LNRGDP over the sample period was 10.75 (SD = 0.71), while LNDD, LNED, LNDS, and LNGCE averaged 7.98, 7.72, 5.79, and 6.31, respectively (Table 4.1). Debt servicing exhibited the greatest volatility (SD = 2.13), reflecting Nigeria's erratic debt-service burden across the period. The Jarque-Bera statistics indicate that LNDD, LNED, LNDS, and LNGCE do not deviate significantly from normality, whereas LNRGDP does ($p < 0.01$); this departure in the dependent variable does not compromise the validity of the cointegration and DOLS procedures that follow, since these techniques rely on the joint stochastic properties of the series rather than on normality of any single variable in levels.

4.2. Unit Root Tests

Table 4.2: Ng-Perron Unit Root Test

Variable	Level MZt	1st Diff. MZt	Order
LNRGDP	1.679	-2.899	I(1)
LNDD	0.785	-2.734	I(1)
LNED	-0.390	-2.756	I(1)
LNDS	1.897	-2.912	I(1)
LNGCE	1.491	-2.709	I(1)

Note: MZt is reported for brevity; full Ng-Perron statistics (MZa, MSB, MPT) are available on request.

Source: Authors' computation from EViews 14 output.

Table 4.3. KPSS Unit Root Test

Variable	Level LM	1st Diff. LM	5% Critical Value	Decision
LNRGDP	0.8156	0.3231	0.4630	I(1)
LNDD	0.7288	0.0913	0.4630	I(1)
LNED	0.5633	0.1727	0.4630	I(1)
LNDS	0.7078	0.0800	0.4630	I(1)
LNGCE	0.7942	0.1586	0.4630	I(1)

Source: Authors' computation from EViews 14 output.

The Ng-Perron and KPSS tests jointly confirm that all five series are non-stationary in levels but become stationary after first differencing, so each variable is integrated of order one, I(1) — the necessary precondition for Johansen cointegration testing (Tables 4.2 and 4.3).

4.3. Cointegration and Long-Run Estimates

Table 4.4: Johansen Cointegration Test

Hypothesis	Trace Statistic	5% Critical Value	Prob.	Max-Eigen Statistic	5% Critical Value	Prob.
None	102.657	88.804	0.0035	42.123	38.331	0.0175
At most 1	60.534	63.876	0.0925	23.770	32.118	0.3640
At most 2	36.764	42.915	0.1798	19.673	25.823	0.2624
At most 3	17.091	25.872	0.4082	11.950	19.387	0.4198
At most 4	5.141	12.518	0.5762	5.141	12.518	0.5762

Source: Authors' computation from EViews 14 output

Both the Trace and Maximum-Eigenvalue statistics reject the null hypothesis of no cointegrating equation (p = 0.0035 and 0.0175, respectively) but fail to reject the null of at most one, confirming a single stable long-run relationship between RGDP and its four determinants (Table 4.4). With one cointegrating relationship established, the DOLS estimator is used to obtain long-run coefficients. With lead and lag fixed at two, the sample is adjusted to 1993–2023 (31 observations), and a Bartlett kernel with fixed Newey-West bandwidth (4.0000) is used for long-run variance correction; the cointegrating equation is restricted to a constant.

Table 4.5: Dynamic OLS (DOLS) Long-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
LNDD	0.2435	0.0330	7.371	0.0003	Significant
LNED	-0.1594	0.0172	-9.263	0.0001	Significant
LNDS	0.2226	0.0304	7.331	0.0003	Significant
LNGCE	-0.1664	0.0207	-8.030	0.0002	Significant
Constant	9.6801	0.1346	71.912	0.0000	Significant

Source: Authors' computation from EViews 14output. R-squared=0.7994; AdjustedR-squared =0.7970; S.E.of regression=0.0257; Long-run variance=0.000238; Observations=31.

All four explanatory variables are statistically significant at the 5 per cent level (Table 4.5). The domestic-debt elasticity (β = 0.2435) implies that, ceteris paribus, a 1 per cent increase in domestic debt is associated with a 0.244 per cent increase in RGDP, so $H_0$1 is

rejected. The external-debt elasticity (β = -0.1594) implies a 0.159 per cent decline in RGDP for every 1 per cent increase in external debt, so $H_0$2 is rejected. The debt-servicing elasticity (β = 0.2226) implies a 0.223 per cent increase in RGDP for every 1 per cent increase in servicing, so $H_0$3 is rejected. The government-capital-expenditure elasticity (β = -0.1664) implies a 0.166 per cent decrease in RGDP for every 1 per cent increase in capital spending, so $H_0$4 is rejected. The model explains approximately 79.94 per cent of the variation in LNRGDP (adjusted R^2 = 0.7970).

4.4. Diagnostic Tests

The residual Jarque-Bera statistic (1.3739, p = 0.5031) does not reject the null of normally distributed residuals, and the CUSUM statistic remains within the 5 per cent significance bounds throughout the sample period, indicating that the long-run relationship is structurally stable and the estimated parameters are reliable.

4.5 Discussion of Findings

The results provide four distinct answers to the study's objectives, and each is examined in turn against theory, the empirical literature, and Nigeria's fiscal context over 1990–2025.

On domestic debt (H_{01}), the positive elasticity of 0.244 indicates that, on average over the sample period, domestic borrowing supplemented government resources for spending that supported output. This is consistent with Hassan et al. (2025) and Raymond et al. (2025a), but at odds with the negative results of Ikwuo et al. (2024) and Marafa (2022). The contrast is plausibly a function of sample period and of how borrowed funds were deployed in specific sub-periods: where earlier studies capture years of heavier deficit monetisation and weaker fiscal discipline, the present sample also spans years of relatively deeper domestic capital markets, which may have improved the allocative efficiency of naira-denominated borrowing. This finding should not be read as a license for unconstrained domestic borrowing. It is a long-run statistical association, and it coexists with a debt stock in which short-maturity instruments dominate and expose government to rollover risk (DMO, 2026); a continued reliance on short-dated domestic debt could erode the very growth benefit this result identifies, by raising refinancing costs and diverting future revenue toward servicing rather than productive spending.

On external debt (H_{02}), the negative elasticity of -0.159 is consistent with the Debt Overhang Hypothesis (Krugman, 1988; Sachs, 1989) and with Abachi et al. (2024) and Osobase et al. (2023), indicating that foreign borrowing has not translated proportionately into productive domestic investment. This result is best interpreted alongside the naira's depreciation from about ₦460 to over ₦1,500 per dollar between 2022 and mid2024: because external

debt is serviced in foreign currency, devaluation mechanically inflates the naira cost of existing obligations regardless of how the underlying funds were used, redirecting resources toward servicing rather than growth-enhancing activity. The finding therefore reflects both a debt overhang effect and an exchange-rate valuation effect operating together, and the two are difficult to fully separate within an annual, single-equation framework.

On debt servicing (H_{03}), the positive coefficient of 0.223 must be interpreted with care, since servicing itself is not a productive investment. Consistent with Okeke et al. (2023), the more plausible reading is one of reverse causation rather than a growth-generating effect of servicing: debt servicing tends to scale with the volume of past borrowing that financed government activity, so periods of higher output are also periods in which more debt has been serviced. Read this way, the coefficient does not contradict the debt-overhang mechanism identified for external debt; rather, it signals that the servicing variable in this model captures the scale of debt-financed government activity as much as it captures the fiscal drag of repayment. This distinction matters for policy: it implies that the appropriate lever is not to reduce servicing indiscriminately, but to reduce the volume and cost of the borrowing that generates the servicing obligation in the first place.

On government capital expenditure (H_{04}), the negative elasticity of -0.166 runs counter to the Keynesian multiplier logic that motivated the a priori expectation, but it is consistent with Chekwume et al. (2025) and with the study's own theoretical caveat regarding Nigeria's 26–30 per cent capital-budget implementation rate. The result should not be read as evidence that public capital investment cannot support growth; rather, it indicates that budgeted capital expenditure, as recorded in fiscal accounts, has not been converted into commensurate productive capacity over 1990–2025. Plausible mechanisms include project abandonment, cost overruns that inflate nominal spending without proportionate physical completion, and the diversion of nominally capital-designated funds toward recurrent-type uses. This is compatible with the fiscal variant of the crowding-out hypothesis (Clements et al., 2003): because debt servicing now consumes roughly 43 per cent of government spending (DMO, 2026), the capital budget is often the residual claimant on available revenue, so nominal capital allocations may rise even as effective implementation weakens under revenue pressure. In this sense, the negative coefficient is less a statement about capital expenditure in principle than a statement about capital-expenditure execution in practice.

Taken together, the four results describe a debt-growth relationship in Nigeria that is not uniform across debt type: domestic debt has, on average, supported growth over the period studied; external debt has behaved consistently with debt overhang, compounded by currency depreciation; debt servicing displays a statistically significant positive association that most plausibly reflects the scale of past borrowing rather than a causal growth effect; and the capital-expenditure shortfall reflects an implementation problem rather than a refutation of the Keynesian channel. This pattern is consistent with the broader empirical literature's central ambiguity - that the sign and significance of debt-growth results in Nigeria depend heavily on how debt is decomposed, over what period, and against what quality of public investment management - and it explains why single-aggregate studies of "total public debt" have produced inconsistent conclusions.

Two limitations temper these conclusions and should guide interpretation. First, the annual frequency of the data cannot separate the debt-overhang and exchange-rate valuation channels operating within the external-debt result, nor can it capture within-year fiscal dynamics; quarterly data would allow this decomposition. Second, government capital expenditure is treated as a single un-disaggregated aggregate, so the model cannot distinguish well-executed capital spending in, for example, power or transport infrastructure from poorly executed spending elsewhere; sectoral disaggregation is needed to isolate where the implementation shortfall is concentrated.

5.0 Conclusion, Policy Implications and Recommendations

This study examined the long-run effects of domestic debt, external debt, debt servicing, and government capital expenditure on real GDP in Nigeria between 1990 and 2025, using Ng-Perron and KPSS unit root tests, Johansen cointegration, and DOLS estimation. All four variables were found to be I(1) and cointegrated with RGDP. Domestic debt (0.244) and debt servicing (0.223) exhibited significant positive long-run effects, while external debt (-0.159) and capital expenditure (-0.166) exhibited significant negative effects, with the model explaining nearly 80 per cent of the variation in RGDP. All four null hypotheses (H_{01}–H_{04}) were rejected. The results show that it is debt composition and the efficiency with which resources are deployed - not the size of the debt stock alone - that shape Nigeria's debt-growth relationship. Accordingly, the study offers the following policy recommendations, each targeted to the specific finding that motivates it:

By jointly modelling domestic debt, external debt, debt servicing, and capital expenditure within a single long-run framework extending

to 2025, the study contributes to the literature by capturing Nigeria's post-2023 fiscal reforms within one estimation, rather than treating debt components separately. Its main limitations are its reliance on an un-disaggregated capital-expenditure variable and on annual macroeconomic aggregates, which reveal long-run but not short-run dynamics. Future research should use quarterly data to separate short-run adjustment from long-run effects, disaggregate capital expenditure by sector, and incorporate debt-to-GDP ratios and exchange-rate exposure directly into the model.

Policy Implication

The central policy implication of the study is that Nigeria should move from a debt accumulation strategy toward a debt productivity and expenditure efficiency strategy. Borrowing should be undertaken only where the expected economic and social returns are sufficient to justify the associated debt obligations.

Recommendations

i. Domestic Debt: Since domestic debt has a positive and statistically significant long-run effect on real GDP, we need to ensure that domestic borrowing is directed exclusively toward productive investments capable of generating economic returns and expanding Nigeria's productive capacity.

ii. External Debt: Given the negative and statistically significant effect of external debt on real GDP, there is a need to limit non-concessional external borrowing and prioritise concessional loans tied to projects that generate sufficient economic returns and foreign-exchange earnings.

iii. Debt Servicing: Although debt servicing exhibits a positive and significant coefficient, the finding is interpreted as reflecting the scale of previous borrowing rather than a productive effect of repayment. Therefore, reduce the accumulation of new debt by strengthening fiscal discipline and domestic revenue mobilisation, thereby minimising the growing burden of debt-servicing obligations.

iv. Government Capital Expenditure: Since government capital expenditure has a negative and statistically significant effect on real GDP, there is a need to strengthen capital-budget implementation and project monitoring to ensure that approved capital allocations are efficiently converted into completed and productive infrastructure projects.

Ultimately, the growth of public debt is not, in itself, Nigeria's central fiscal problem; how that debt is contracted, serviced, and converted into productive investment is. Sustainable

growth will depend on disciplined public investment management, stronger domestic revenue mobilisation, and deliberate attention to the currency composition and maturity structure of borrowing.

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