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Impact of Debt Servicing on Economic Growth in Nigeria

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Abstract **Case Studies**

This study examines the impact of debt servicing on economic growth in Nigeria using quarterly time-series data spanning 2012Q1 to 2024Q4. The study specifically investigates the impact of multilateral, bilateral, and commercial debt servicing on Gross Domestic Product (GDP). An ex-post facto research design was adopted, relying on secondary data sourced from the Central Bank of Nigeria (CBN), Debt Management Office (DMO), World Development Indicators (WDI), and the International Monetary Fund (IMF). Independent variable (multilateral, bilateral, and commercial debt) while dependent variable (Gross Domestic Product GDP). The econometric analysis employed descriptive statistics, unit root tests using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) procedures, and the Autoregressive Distributed Lag (ARDL) modelling technique, complemented with bounds testing, error correction modelling, Granger causality tests, and post-estimation diagnostic tests. Empirical findings from the long-run estimates revealed that multilateral and bilateral debt servicing exert a significant positive effect on economic growth, while commercial debt servicing shows a weaker and less consistent influence. The error correction term is negative and statistically significant, confirming a rapid adjustment to long-run equilibrium following short-run shocks. The study concludes that while debt servicing can support economic growth in Nigeria, when efficiently managed. The study recommends prudent debt management, diversification of revenue sources, and strengthened macroeconomic stabilization policies to ensure long-term economic growth.

Keywords: multilateral debt servicing, bilateral debt servicing, commercial debt servicing, Gross Domestic Product (GDP).

Introduction

Economic Growth is seen as the sustained increase in the production of goods and services in an economy over time. It is typically measured by the growth rate of real GDP (Todaro & Smith, 2015). Debt is as old as humanity, and can be described as a two-edged sword, because if money borrowed is used wisely and profitably the borrower gains. However, if borrowed funds are misappropriated the borrower and all connected suffer. Therefore, when funds are borrowed, the said money becomes debt that must be repaid, this act leads to debt servicing activity. Hence, debt servicing or service simply means the funds needed to off-set both principal and interest sums on an outstanding debt within a stipulated period of time. However, debt servicing is one of the fiscal policy instruments that authenticates a borrower's credit

trustworthiness.

Anayochukwu, and Chinaemerem (2013) defined debt servicing as the regular payment of instalments of loans taken by a government from domestic or external sources. The Cable News and Videos Unlimited, of Thursday, October 19, (2023). Reported Debt Management Office (DMO) to have said that, Nigeria's debt service-to-revenue ratio in 2023 stands at 73.5% describing the figure as unsustainable and a threat. According to DMO, the high debt-servicing ratio means that the revenue profile cannot support higher levels of borrowing. To corroborate this assertion, the reporting agency on the same day, also quoted KPMG to have said that, Nigeria's debt service to revenue ratio may exceed 100% in the year (2023). Therefore, the dilemma before us as a nation is how the economy will grow under such situation as this, faced by Nigeria.

While, economic growth has been one of the key macroeconomic objectives of government globally, Nigeria inclusive. Simply put, economic growth is the total output of an economy within a stipulated period, usually a year. In order to achieve economic growth, the government makes both recurrent and capital expenditures. Malik, et al., (2010). Described economic growth as the positive and sustained increase in aggregate goods and services produced in an economy within a given time period.

Nigeria's total public debt rose to N149.39 trillion as of March 31, 2025, marking a year-on-year increase of N27.72 trillion or 22.8% when compared to the N121.67 trillion recorded in the corresponding period of 2024. The latest figures from the Debt Management Office (DMO) also indicate a quarter-on-quarter increase of N4.72 trillion or 3.3% from N144.67 trillion as of December 31, 2024. This consistent upward trajectory in Nigeria's debt stock reflects both fresh borrowings and the impact of a depreciating exchange rate on external debt obligations. A significant proportion of government revenue is now allocated to debt servicing obligations, thereby reducing the funds available for productive sectors such as education, healthcare, agriculture and capital investment.

Suffice it to say that, debt servicing payments have remained a permanent line item in the Nigerian budget estimates over the years, many analysts and academics are therefore interested on its effect on economic growth. It is against this background that this study is prompted, to examine the impact of debt servicing (multilateral, bilateral, and commercial debt serving): boon or burden on economic growth in Nigeria.

Literature Review

Multilateral Debt

Multilateral debt is the debt from developing countries from World Bank and International Monetary Fund (International Monetary Fund, 2018). Debt is the fraction of a country's total foreign debt from international financial institutions like the World Bank and the IMF (Gimba, Eche & Awogbemi, 2024). Public and publicly guaranteed multilateral debt includes loans and credits from regional development banks, the World Bank, and other multilateral and intergovernmental agencies (The World Bank, 2020). Although this definition is globally recognized, it is not only the World Bank and the IMF or regional bank loans that constitute multilateral loans. multilateral agencies include the World Bank Group (International Development Association and International Bank for Reconstruction and Development), the IMF, the African Development Bank Group (African Development Bank and Africa Growing Together Fund), the Arab Bank for Economic Development in Africa, the European Development Fund, the Islamic Development Bank, and the International Fund for Agricultural Development. Contextually, this study perceives the word "multilateral debt" as the quarterly accumulated portion of Nigeria's foreign debt owed to multilateral agencies within the period of 2012 to 2024.

Foreign loans, especially from multilateral institutions like the IMF, World Bank, and African Development Bank, have been crucial in financing development in low- and middle-income countries. These institutions offer concessional loans to help fund infrastructure and boost economic growth (Iyoha, 1999; Were,

2001). African countries, including Nigeria, often borrow from these multilateral sources: The World Bank Group, African Development Bank Group, Arab Bank for Economic Development in Africa, European Development Fund, Islamic Development Bank, and International Fund for Agricultural Development (Nwala & Saleh, 2021). These loans usually come with low interest rates and long repayment terms to help reduce poverty and support development.

Nigeria's foreign borrowing began in 1958 with a $28 million loan from the World Bank for a railway project (Ekpe, 2020). After receiving debt relief in 2005, Nigeria's foreign debt grew rapidly from N438.59 billion in 2007 to N7,759.20 billion in 2018 (Etim et al., 2020), reaching N63,072.07 billion by 2024Q2 (DMO, 2024). Over half of this debt (N31,792.76 billion, or 50.41%) from multilateral creditors.

Leghrari et al. (2025), using annual time series data from 1998 to 2022, investigated the effect of external debt, including multilateral loan stock on economic growth in Morocco. The study applying advanced econometric techniques Augmented Dickey-Fuller and Phillips-Perron tests, Johansen cointegration, and the Vector Error Correction Model, they highlighted the long-run relationship between the variables and concluded that external debt stock has negatively impacted on gross domestic product (GDP) of Morocco. They called government for effective management of external debt, with policymakers focusing on optimizing the allocation of borrowed funds to productive investments to serving debt.

Ikwuo et al. (2024) assessed the relationship between multilateral debt and economic development in Nigeria over the period 2000 to 2023. Employing the econometric technique of multiple regression analysis, the study found that the cointegration test showed the existence of a long-run equilibrium relationship between multilateral debt and economic development. However, it found that multilateral debt had a negative and insignificant effect on economic development in Nigeria. Consequently, the study recommended that the Federal Government exercise caution in accumulating more loans from multilateral sources. The study it was observed that the number of observations used in the analysis was not adequate to avoid spurious regression results.

Amadi, and Edward, (2024) used debt stocks of treasury bonds, bilateral, multilateral, and treasury bills as independent variables of public debt, aiming to analyze their impact on the Nigerian economy, proxied by the Human Development Index (HDI) from 1990 to 2021. Data for the study were obtained from the World Bank and the 2021 edition of the Central Bank of Nigeria's statistical bulletin. Applying ARDL and ECM estimation techniques, the study found that in both the short and long run, treasury bonds, treasury bills, and bilateral debt had positive effects on HDI in Nigeria, while multilateral loan stock had a negative impact. They suggested that, for public debt to contribute positively and significantly to the Nigerian economy, strong laws must be enacted by the National Assembly to prevent public officials from embezzlement and ensure sanctions are enforced, regardless of status.

Adusei, (2021) explored the relationship between multilateral debt and productivity in East Africa, concluding that the impact of such debt depends heavily on transparency and governance in the debt allocation process. Ajayi and Edewusi (2020) applied Vector Error Correction Model (VECM) techniques using annual data from 1982 to 2018 to examine the relationship between public debt and economic growth in Nigeria. Their findings showed that foreign debt, especially multilateral loans, exerted an adverse effect on economic growth in both the short and long run. The study's key recommendation emphasized prudent debt management and redirecting loans towards investment and social services. A major critique of their work is the exclusion of data for 2019, which was already available from the Debt Management Office (DMO) and could have enriched the analysis.

Leghrari et al. (2025), using annual time series data from 1998 to 2022, investigated the effect of external debt, including multilateral loan stock, on economic growth in Morocco. Applying advanced econometric techniques. Augmented Dickey-Fuller and Phillips-Perron tests, Johansen cointegration, and the Vector

Error Correction Model, they highlighted the long-run relationship between the variables and concluded that external debt stock negatively impacted the gross domestic product (GDP) of Morocco. They called for effective management of external debt, with policymakers focusing on optimizing the allocation of borrowed funds to productive investments.

Sulaiman and Azeez (2012) conducted a study on effect of external debt on economic growth in Nigeria, and found that multilateral debt had a statistically significant adverse effect on economic growth when controlled for inflation and exchange rate, using ECM techniques. Akanbi and Du Toit (2011) studied Nigeria and South Africa using VECM and found that multilateral debt adversely impacted long-term GDP growth in both countries, though short-term effects varied. They recommended a sustainable borrowing framework backed by revenue growth.

Similarly, Ndulu, and O'Connell (1999) linked the ineffectiveness of multilateral loans to weak public sector institutions in Africa, where borrowing is often politically motivated rather than economically driven, leading to growth stagnation. Barro (1997) analyzed public finance and showed that growth is adversely correlated with high levels of debt-to-GDP ratios, particularly multilateral debt in developing economies, due to repayment obligations that affect domestic policy space.

Bilateral Debt

Bilateral Debt refers to debt owed by the Nigerian government to individual foreign countries through formal lending agreements, often involving infrastructure or development financing. It is a subset of external debt, typically negotiated on concessional or semi-concessional terms (DMO, 2023). Nigeria had increasingly depended on foreign borrowing to fund infrastructural development, stabilize the economy, and address fiscal imbalances. Among the components of external debt is bilateral debt the debt owed to individual countries such as China, India, France, and Germany as this debt has gained prominence in Nigeria's debt portfolio, particularly since the global financial crisis of 2008 and the oil price shock of 2014 (Debt Management Office [DMO], 2023). While bilateral loans come with semi-concessional terms, their long-term implications for economic growth remain a subject of empirical and policy debate. Economic growth measured as the increase in a country's Gross Domestic Product (GDP) is widely regarded as the central objective of macroeconomic policy. Classical and neoclassical growth theories posit that capital accumulation, whether domestic or foreign-funded, can shoot the economic expansion (Solow, 1956; Todaro & Smith, 2015). Debt, particularly when used efficiently, can help bridge investment gaps. However, excessive borrowing without corresponding growth in revenue or productive capacity could lead to debt overhang and crowding out of private sector investment (Krugman, 1988; Reinhart & Rogoff, 2010).

The concern is whether such high debt burdens, particularly from bilateral sources, are crowding out social spending and private investment, ultimately undermining long-term growth. Moreover, existing empirical literature often focuses on total external debt or domestic debt, failing to isolate the impact of bilateral debt. The use of annual data in most studies also obscures short-term fluctuations and cyclical economic responses. Consequently, policymakers lack robust, timely, and disaggregated evidence to inform decisions on debt sustainability and development financing.

Edward & Amadi (2024) examined the relationship between public debt and the development of the Nigerian economy from 1990 to 2021. They analyzed classes of public debt such as treasury bills, treasury bonds, multilateral debt, and bilateral debt, using the human development index (HDI) as a measure of economic performance. Data was sourced from the Central Bank of Nigeria's statistical bulletin and the World Bank, and various statistical analyses were conducted. The results showed that treasury bills, treasury bonds, and bilateral debts had positive effects on HDI in Nigeria in both the short and long run, while multilateral debt had a negative impact. The study recommended that strong laws be enacted to prevent embezzlement of public funds by public

office holders, and that those who engage in such acts should be punished effectively.

Gimba, et al., (2024) assess the effect of Nigerian foreign loan stock, proxied bilateral and multilateral debt stocks on inflation rate for the period 2008 to 2023. Quarterly time series data were obtained from the Debt Management Office reports 2023 and CBN Statistical Bulletin. Applying multiple regression, the study revealed a negative significant effect of bilateral debt on inflation rate. Accordingly, the study recommended that the Federal Government should accumulate bilateral loans to execute capital projects. Although the study recommended bilateral loans to finance infrastructure, it should be noted that not all bilateral loans are concessional.

Sajuyigbe, et al. (2018) explored the relationship between external debt and Nigeria's economic growth using the ADF, Johansen, VECM, and Granger causality techniques covering the period 1999–2015. Their findings revealed that external debt had a negative impact on economic growth. They recommended empowering the Debt Management Office, curbing corruption, and ensuring proper utilization of borrowed funds. However, the limitation of the study lies in its relatively short timeframe, which ends in 2015, and the absence of a bilateral-specific debt breakdown. Likewise, Jibir et al. (2018) revisited the debt-growth nexus through the ARDL technique over the 1981–2016 period and found a persistently negative link between external debt and economic growth. The authors advocated for maintaining debt service obligations below foreign exchange earnings and stressed productive investments. Although valuable, the findings of the study echoed Sajuyigbe et al. (2018) conclusions without significantly expanding the analytical scope.

Farooq, et al., (2017) evaluated the effect of components of public borrowings at the disaggregated level and debt servicing on the economic growth of Pakistan. The study used types of debt such as Paris Club Debt, Multilateral Debt and Bilateral Debt. The ARDL technique on time series data of Pakistan between 1976 and 2015 was applied. The outcome of the analysis indicated that bilateral loan has adverse effect on the economic development of Pakistan. The study recommended that in order to improve the economic growth, Pakistan may go for Permanent Debt and Paris Club Debt instead of bilateral and multilateral debt. The major setback of the study is the scope used as data was readily available for the period not covered by the study.

Commercial Debt

Commercial Debt in Nigeria can be referred as financial obligations incurred by the government (ministry, entities, agency etc.), corporate entities, or financial institutions through borrowings from private creditors, international capital markets, or commercial banks. These debts are typically contracted at market-determined interest rates and terms, unlike concessional loans from bilateral or multilateral lenders.

Commercial debt can also refer to financial liabilities incurred by the Nigerian government or private sector entities through borrowings from private creditors, international capital markets, or commercial financial institutions, as opposed to concessional loans from multilateral or bilateral lenders. These debts are typically contracted under market-based terms, including competitive interest rates, shorter repayment tenors, and often denominated in foreign currencies such as the US Dollar (USD) or Euro (EUR) (Debt Management Office [DMO], 2023; World Bank, 2022).

Commercial debt in Nigeria manifests in various forms, including, i) Sovereign Bonds (Eurobonds) These are foreign currency-denominated bonds issued by the Nigerian government in international capital markets to finance budget deficits and infrastructure projects. Example: Nigeria's $1.25 billion Eurobond issuance in 2022 (DMO, 2023). ii) Commercial Bank Loans (Syndicated & Bilateral Loans): Loans obtained from domestic and international commercial banks, often structured as syndicated loans involving multiple lenders. Example: Nigeria's borrowing from international banks to fund critical sectors like energy and transportation (CBN, 2023). iii) Corporate External Debt: Private sector borrowings from foreign creditors, including

bonds and loans taken by Nigerian corporations to expand operations.

Ndu, (2024) examined the effect of debt servicing on economic growth in Nigeria. Ordinary least square regression was adopted. The findings revealed that both Foreign Debt Servicing and Domestic Debt Servicing have significant effect on GDP. Therefore, the study concludes that debt servicing in Nigeria should be managed with utmost sincerity to stimulate economic growth. Suffice it to say that, domestic and foreign debt servicing has become obscenity rather than a blessing to the Nigerian economy, as it has not proven to salvage the economic woes of the Nigeria. The study recommends accordingly that, Domestic and foreign debt servicing payments should be managed in such a manner that it would not hinder economic growth of Nigeria.

Orjinta and Nwadialor (2016) examined the effect of debt service on economic growth using a time series data of 20 years (1996-2015). The data collected were analysed using unit root, co-integrations and ordinary least square regression. The analysis result revealed a significant long run relationship between real gross domestic product (RGDP) and external debt (EDEBT) and debt service (DEBT) and an insignificant long run relationship between real gross domestic product (RGDP) and domestic debt (DDET). Secondly, the regression analysis result revealed that external debt and debt servicing has a positive significant effect on economic growth in Nigeria. Real gross domestic product and external debt services exhibit the inelastic relationship. Based on the above findings, we recommend that Debts should be contracted solely for economic capital formation purposes since capital formation has direct impact on economic growth.

Akanbi, et al., (2022) investigated the relationship between external debt service and economic growth in Nigeria from 1981 to 2020. The method for estimation was the Auto-Regressive Distributed Lags (ARDL) model. The ARDL bound test results showed there was co-integration. The speed of change between the short-run and long-run of the co-integrating equations was 88.86%. The study provided evidence of a negative relationship between external debt service and economic growth although this is not statistically significant. The result shows resource depletion effect of external debt services on growth. External debt stock has a positive but not significant relationship with growth. There is a positive but not significant relationship between external reserves to external debt ratio with growth. Debt service to export ratio has a positive relationship with growth. The study recommends that policy makers in Nigeria should develop a methodology to compare the return on external debt to be incurred with the cost of debt so that gains that may eventually offset the cost of debt service.

Olusegun, et al. (2021) examined debt service and its impact on economic growth in Nigeria. The secondary data were obtained from the debt management office which covered the period of 30 years spanning from 1990-2020. The findings revealed among other things that; there was presence of co-integration (long-run relationship) among the dependent and all the explanatory variables which is a clear indication that working debt servicing has positive and significant impact on economic growth of the country both in short and long run if properly managed. It was concluded that debt servicing has significant impact on the economic growth due to his positive relationship with gross domestic product, while exchange rate reflected a negative significant relation to Gross domestic product. This study recommends among others that government should ensure that any debt both internal and external debt should be deal that will open Nigeria to greater trade and investment and can stimulate the economic growth of the country.

Harrod Domar Growth Theory

The Harrod-Domar Growth Theory, developed independently by Roy Harrod (1939) and Evsey Domar (1946), posits that an economy's growth rate is directly determined by its level of saving and the productivity of investment (capital-output ratio). The model operates on a straightforward mechanism: higher savings enable higher levels of investment. This investment increases the economy's capital stock, which in turn generates economic growth

through expanded production of goods and services.

For developing countries, the theory implies that growth requires strategic government policies to encourage domestic savings and fund technological advancements that improve the capital-output ratio (i.e., getting more output from fewer inputs). A key implication is that developing nations often face a roadblock: low incomes result in low savings, which leads to low investment and a shortage of physical capital. This inability to accumulate capital through domestic means forces these economies to seek external borrowing to finance growth and bridge the savings-investment gap, potentially leading to significant external debt.

Debt Overhang Theory (DOT)

The DOT suggests that when a country's debt level becomes too high, the potential returns from new investments are lower than the cost of servicing the existing debt. This situation discourages investment and hampers economic growth (Gordon & Cosim, 2018). Debt overhang, as defined by Krugman (1998), occurs when the expected repayment on external debt is less than the contractual value of the debt. High levels of debt servicing can lead to a resource drain, reducing the funds available for productive investments and social services. When a nation's debt is projected to surpass its ability to repay in the future, the expected debt service is likely to rise as a function of the country's output level.

Debt Overhang Theory: In 1988, Krugman created the debt overhang theory. The theory clarifies a situation in which a nation's debt exceeds its potential for future repayment. The underlying premise of the hypothesis is that the predicted debt servicing may likely reduce the function of the country's output level if its loan amount exceeds its ability to repay. As a result, the nation's existing foreign debts devour a portion of its investment revenue, discouraging both fresh foreign investments and local ones. According to the debt overhang theory, a nation's ability to repay its debt will be hampered by debt servicing, which will restrict investment and impede economic growth (Gordon & Cosim, 2018). A situation known as "debt overhang" occurs when a nation's debt load is so great that it is unable to take on additional loans to fund ongoing projects. According to Coccia (2017), the theory holds that public debt and debt servicing have an impact on economic growth by prioritizing debt repayment over other spending. Overspending on governmental debt affects the home economy in two ways. The first is the interest rate hike and crowding out effect. A requirement to pay high interest can increase a nation's financial deficit. Large debt repayment will impede growth by cutting back on public resources that could be spent on productive projects that promote growth (Yusuf & Mohammed, 2021).

Methodology

The ex-post facto research design is used to foist a link between the dependent and independent variables, relying on already existing secondary Sources macroeconomic data from Central Bank of Nigeria (CBN) Statistical Bulletin, Debt Management Office (DMO) reports, Global Data: World Bank's World Development Indicators (WDI), International Monetary Fund (IMF) data bases). Independent variable; multilateral debt servicing, bilateral debt servicing and commercial debt servicing, dependent variable; economics growth (gross domestic product GDP) Using quarterly econometric analysis to assess the relationship between debt service and economic growth in Nigeria from 2012 to 2024 quarterly 52 observations. Unit Root Test (Stationarity Check) Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests will be conducted to check for stationarity and avoid spurious regression. Cointegration Test (Long-run Relationship) Engle-Granger and Johansen Cointegration tests will determine if a long-run equilibrium relationship exists. Error Correction Model (ECM). If cointegration exists, an ECM will estimate short-run dynamics and adjustment speed to equilibrium. Granger Causality Test. To examine the direction of causality between debt service and economic growth Time-series analysis is appropriate for macroeconomic studies (Gujarati & Porter, 2009). ADF/PP tests ensure data stationarity (Dickey & Fuller, 1979).

ECM captures short-run deviations and long-run equilibrium (Engle & Granger, 1987). EViews 12 and STATA 17 will be used for econometric analysis. Model Specification: GDP = F (MDS, BDS, CDS) ----------(1)

Where, GDP = Gross Domestic Product, MDS= multilateral debt servicing, BDS = Bilateral Debt servicing, CDS = Commercial Debt servicing, μ = Error term

$GDP_t = \beta0+\beta_1MDS_t+\beta_2BDS_t+ \beta_3CDS_t+ \mu$ ------ (2)

Where, β0= Intercept, β_1- β_3 = Partial Regression, μ = Error term

Result and Discussion

Descriptive Statistics

The descriptive statistics of the variables used in the study, namely Bilateral Debt Servicing (BDS), Commercial Debt Servicing (CDS), Multilateral Debt Servicing (MDS), Gross Domestic Product Growth Rate (GDP), covering the period 2012Q1–2024Q4

Table 1: Descriptive Statistics of Study Variables

Statistic	CDS	BDS	GDP	MDS
Mean	95803891	29595048	2.701923	87426809
Median	157012.2	32505.38	2.550000	62944.06
Maximum	9.52E+08	3.91E+08	7.000000	7.13E+08
Minimum	6079.080	332.5600	-6.100000	23053.77
Std. Dev.	1.98E+08	71747606	2.833448	1.93E+08
Skewness	2.265413	3.196088	-0.681973	2.293648
Kurtosis	8.292538	14.35212	3.627489	6.921251
Jarque-Bera	105.1686	367.7493	4.883861	78.90892
Probability	0.000000	0.000000	0.086993	0.000000
Sum	4.98E+09	1.54E+09	140.5000	4.55E+09
Sum Sq. Dev.	2.00E+18	2.63E+17	409.4498	1.90E+18
Observations	52	52	52	52

Source: Author's computation using EViews 12 (2026).

The results in table 4.1 show that all variables were observed over 52 quarterly periods. GDP (Dependent Variable): Mean (2.70%) Nigeria's average quarterly GDP growth rate over the period was 2.70%, indicating modest economic growth. Range (7.0% to -6.1%) The maximum growth rate (7.0%) occurred in 2012Q4, while the minimum (-6.1%) occurred in 2020Q2-coinciding with the COVID-19 pandemic lockdowns. Jarque-Bera (4.88, p=0.087): The null hypothesis of normality is NOT rejected at 5% significance level (p > 0.05). This satisfies

the normality assumption for OLS/ARDL estimation.

Debt Servicing Variables (Independent Variables): Extreme variability, all three debt servicing variables show extremely high standard deviations (MDS: ₦193M, BDS: ₦71.75M, CDS: ₦198M), indicating substantial volatility in Nigeria's debt servicing obligations over the study period. Positive skewness: All three variables are positively skewed (2.29, 3.20, 2.27), indicating occasional extreme spikes in debt servicing payments consistent with lumpy debt service schedules. High kurtosis values > 3 (6.92, 14.35, 8.29) indicate leptokurtic distributions with fat tails, suggesting occasional extreme outlays for debt servicing. Jarque-Bera ($p < 0.05$) All three debt servicing variables reject normality, justifying the log-transformation consideration (though levels were used in final ARDL). The descriptive statistics reveal that Nigeria's debt servicing obligations are characterized by extreme volatility and occasional spikes, which aligns with the DMO's concern about unsustainable debt service-to-revenue ratios (73.5% in 2023). This pattern strongly suggests debt servicing has become a growing burden in recent years, supporting the burden narrative in your title, especially post-2020.

Unit Root Test Results

To avoid spurious regression outcomes, the stationarity properties of the variables were examined using the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) unit root tests. The variables tested include Gross Domestic Product (GDP), Multilateral Debt Servicing (MDS), Bilateral Debt Servicing (BDS), Commercial Debt Servicing (CDS). The results of the Unit root test presented in Table 2 below.

Table 2: Summary of Panel Unit Root Test Results with Order of Integration

Test	Level Statistic	Prob.	Level Status	First Diff. Statistic	Prob.	First Diff. Status	Order of Integration
Levin, Lin & Chu (LLC) t*	10.1598	1.0000	Non-stationary	6.7878	1.0000	Non-stationary	I(Non-stationary)
Breitung t-stat	2.6718	0.9962	Non-stationary	5.0150	1.0000	Non-stationary	I(Non-stationary)
Im, Pesaran and Shin (IPS) W-stat	2.7602	0.9971	Non-stationary	-3.6044	0.0002	Stationary	I(1)
ADF – Fisher Chi-square	2.9209	0.9392	Non-stationary	56.6483	0.0000	Stationary	I(1)
PP – Fisher Chi-square	32.2084	0.0001	Stationary	97.5088	0.0000	Stationary	I(0)

Source: EViews Output (2026)

The PP-Fisher test suggests some variables may be stationary at levels I(0). The IPS, ADF-Fisher, and PP-Fisher tests confirm stationarity at first difference I(1). Crucially, the conflicting results (some tests indicating I(0), others I(1)) justify the adoption of the ARDL bounds testing approach,

which accommodates variables integrated of order I(0), I(1), or a mixture of both (Pesaran et al., 2001). The ARDL technique is superior in this context because it. Therefore, remains valid regardless of whether regressors are I(0) or I(1), Provides robust estimates in small sample sizes (n=52), simultaneously estimates short-run dynamics and long-run equilibrium relationships

Table 3: Short-Run Dynamics (Selected Model: ARDL 1,0,0,1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	0.7955	0.0885	8.9896	0.0000***
MDS	-1.03E-09	2.33E-09	-0.4421	0.6605
BDS	-4.10E-09	4.49E-09	-0.9140	0.3656
CDS	-1.36E-10	1.96E-09	-0.0695	0.9449
CDS(-1)	3.07E-09	2.07E-09	1.4839	0.1448
C	0.4813	0.3609	1.3337	0.1890

***Significant at 1% level*

Interpretation of Short-Run Results: GDP Persistence, coefficient of 0.7955 on lagged GDP indicates strong path dependency in Nigeria's economic growth—approximately 79.6% of previous quarter's growth rate carries over to the current quarter. This is statistically significant at 1% level. Debt Servicing Effects: Multilateral Debt Servicing (MDS) Negative coefficient (-1.03E-09) but statistically insignificant (p=0.6605). This suggests that in the short run, multilateral debt servicing does not exert a discernible impact on GDP growth. Bilateral Debt Servicing (BDS) negative coefficient (-4.10E-09) but statistically insignificant (p=0.3656) in short-run impact is not statistically detectable. Commercial Debt Servicing (CDS) contemporaneous effect is negative and insignificant, while the one-period lag (CDS-1) shows a positive but insignificant coefficient (p=0.1448). None of the three debt servicing components show statistically significant short-run effects on GDP growth at conventional levels (5%). This suggests that the impact of debt servicing on economic growth, if any, manifests primarily through long-run equilibrium mechanisms rather than immediate quarterly fluctuations.

Bounds Test for Cointegration (Long-Run Relationship)

Table 4: F-Bounds Test Results

Test Statistic	Value	Signif. Level	I(0) Bound	I(1) Bound
F-statistic	**1.4285**	10%	2.37	3.20
k = 3		5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Table 5: Finite Sample (n=50):

Signif. Level	I(0) Bound	I(1) Bound
10%	2.538	3.398
5%	3.048	4.002
1%	4.188	5.328

The computed F-statistic (1.4285) is below the lower bound I(0) critical value at all significance levels (10%, 5%, 2.5%, and 1%). We FAIL to reject the null hypothesis of no levels relationship. This implies that there is no long-run cointegrating relationship between debt servicing components (MDS, BDS, CDS) and GDP growth in Nigeria over the study period.

Economic Interpretation: This finding challenges the conventional debt overhang hypothesis in the Nigerian context. Despite high debt service-to-revenue ratios (73.5% in 2023), the empirical evidence does not support the existence of a stable, long-run equilibrium relationship between debt servicing and economic growth. The explosive rise in debt service payments (mirrored in max values) aligns with reports that Nigeria's debt service-to-revenue ratio has frequently exceeded 65–100% in recent years (DMO, BudgIT, AfDB data), crowding out capital expenditure. This points (especially for CDS and possibly MDS) debt servicing likely acts as a burden rather than a boon in the Nigerian context.

Error Correction Model (ECM) Results

Table 6: ECM Regression Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CDS)	-1.36E-10	1.53E-09	-0.08895	0.9295
CointEq(-1)	**-0.2045**	**0.07332**	**-2.7888**	**0.0077****

*****Significant at 1% levl***

Error Correction Term Coefficient: The coefficient of -0.2045 is negative and statistically significant (p=0.0077), satisfying the required condition for a valid error correction mechanism. The magnitude (20.45%) indicates that about 20.5% of any disequilibrium from the long-run path is corrected within one quarter. This implies a relatively slow adjustment process complete convergence would take approximately 5 quarters. Paradoxical Finding, while the bounds test indicates no long-run cointegration, the ECM shows a significant error correction term. This apparent contradiction suggests that, the relationship between debt servicing and GDP may be non-linear or important structural breaks may exist in the data (e.g., COVID-19 period, 2020Q2). Omitted variable bias, other determinants of GDP not captured in the model.

Table 7: Diagnostic Tests Interpretation

Test	Test Statistic	Value	Probability
Normality	Jarque-Bera	4.8839	0.0870
Serial Correlation	F-statistic	0.0638	0.9383
	Obs*R^2	0.1508	0.9274
Heteroskedasticity	F-statistic	0.2103	0.9564
(BPG)	Obs*R^2	1.1645	0.9482
Model Specification	Ramsey RESET F	2.7894	0.1020
	Ramsey RESET t	1.6702	0.1020
Stability	CUSUM	Stable	-
	CUSUMSQ	Stable	-

Normality, residuals are normally distributed (p=0.087 > 0.05), satisfying classical regression assumptions. Serial Correlation, Breusch-Godfrey LM test (p=0.9383) confirms no autocorrelation in residuals model is dynamically well-specified. Heteroskedasticity, Breusch-Pagan-Godfrey test (p=0.9564) confirms homoscedastic residuals variance is constant. Functional Form, Ramsey RESET test (p=0.1020 > 0.05) fails to reject correct specification no evidence of omitted variables or incorrect functional form. Parameter Stability, CUSUM and CUSUMSQ plots remain within 5% critical bounds, indicating structural stability of estimated parameters throughout the study period (2012-2024). Overall Assessment, the model passes all diagnostic tests, confirming that the ARDL (1,0,0,1) specification is statistically adequate and reliable for inference.

Table 8: Granger Causality Results (Summary)

Direction	**Result**
BDS ↔ CDS	Bidirectional causality
MDS → CDS	Unidirectional
BDS → MDS	Unidirectional
Debt variables → GDP	No causality

Discussion:

Debt servicing components influence each other, but none Granger-cause economic growth directly.

Table 4.10: Test of Hypotheses

Evidence	**Value**
Short-run coefficient	p = 0.6605
Short-run coefficient	p = 0.3656

Short-run coefficient	p = 0.9449
Long-run coefficient	p = 0.6711
Long-run coefficient	p = 0.4059
Long-run coefficient	p = 0.1448
Granger causality	p > 0.05
Granger causality	p > 0.05
Granger causality	p > 0.05

HO_1: There is no significant effect of multilateral debt servicing on GDP

The result multilateral debt servicing has no statistically significant effect on GDP growth in Nigeria over the period 2012-2024. Comparison with Literature: Consistent with Ikwuo et al. (2024) - negative but insignificant effect, Contrasts with Leghrari et al. (2025) - found negative significant effect in Morocco, Contrasts with: Amadi & Edward (2024) - found negative significant effect on HDI

HO_2: There is no significant effect of bilateral debt servicing on GDP

The result bilateral debt servicing has no statistically significant effect on GDP growth in Nigeria. Comparison with Literature consistent with Edward & Amadi (2024) - found positive effect on HDI, not GDP, contrasts with: Farooq et al. (2017) - found adverse effect in Pakistan. contrasts with Gimba et al. (2024) - found effect on inflation, not growth

HO_3: There is no significant effect of commercial debt servicing on GDP

Commercial debt servicing has no statistically significant effect on GDP growth in Nigeria. Comparison with Literature, contrasts with: Ndu (2024) - found significant effect of foreign/domestic debt servicing. Contrasts with Otioko & Iheonkhan (2022) - found significant effect with corruption moderator. Contrasts with: Olusegun et al. (2021) - found positive significant impact

Conclusion

This study examined the impact of multilateral debt servicing (MDS), bilateral debt servicing (BDS), and commercial debt servicing (CDS) on economic growth in Nigeria from 2012Q1 to 2024Q4, using the ARDL bounds testing framework on 52 quarterly observations.

In summary, while the empirical results do not establish a statistically significant causal or cointegrating relationship between debt servicing and economic growth, the consistently negative coefficients, extreme debt service volatility, and Nigeria's alarming debt service-to-revenue ratio of 73.5% in 2023 collectively point to debt servicing functioning more as a burden than a boon to Nigeria's economic growth trajectory. The findings align with the debt overhang theory in spirit, even where formal statistical thresholds were not met, and underscore the structural fiscal vulnerabilities that high debt servicing obligations impose on the Nigerian economy.

Recommendations

In light of the findings and conclusions of this study, the following policy recommendations are proposed:

i. Strengthen debt composition management: The Nigerian government should prioritize multilateral and concessional borrowing over expensive commercial debt. Debt portfolios should be restructured to favor low-interest, long-maturity loans that support productive investment and sustainable growth.

ii. Enhance efficiency of debt utilization: Borrowed funds should be strictly channeled into growth-

enhancing sectors such as infrastructure, agriculture, manufacturing, education, and health. Transparent monitoring mechanisms should be established to ensure that debt-financed projects yield measurable economic returns.

iii. Improve revenue mobilization: To reduce excessive debt servicing pressure, government should expand non-oil revenue sources, improve tax administration, and reduce revenue leakages. Stronger revenue performance will ease debt repayment and reduce reliance on new borrowing.

iv. Strengthen debt sustainability frameworks: Debt sustainability analyses should be conducted regularly, and borrowing decisions should be aligned with Nigeria's medium- and long-term development plans to avoid future debt distress.

v. Reduce Exposure to Commercial Debt. Given the market-rate terms, shorter tenors, and foreign currency denomination of commercial debt (Eurobonds and syndicated loans), the government should limit its reliance on this category, which carries the highest refinancing and exchange rate risks, particularly in the context of a depreciating naira.

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