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Impact of Debt Management Strategies on the Performance of the Banking Sector in Nigeria

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ABSTRACT: This study explores the impact of debt management strategy on the performance of banks in Nigeria. The specific objectives of the study were to examine the extent to which the levels of domestic debt, external debt, and debt services affect banks' return on assets (ROA) in Nigeria. The study utilized secondary time series data, obtained from the CBN for a twenty-five-period period from 2000 to 2024, which was analyzed using the Auto Regressive Distributed Lag (ARDL) model. The results reveal that the independent variables determine 34.7% of the variation in ROA. However, only debt servicing was found to exert a statistically significant effect on ROA. In contrast, both domestic and external debt levels had an insignificant impact on bank performance in Nigeria, with external debt having a negative effect. Thus, Nigeria's public debt management strategy has not been too instrumental to bank performance in Nigeria. It is recommended that the government focus on utilizing domestic resources to fund its projects, as domestic debts can be managed more effectively to enhance bank performance. In addition, the government should prioritize debt-service management by closely monitoring the debt-service-to-total-debt ratio to harness its immediate positive impact.

Keywords: Public Debt Management, Bank Performance in Nigeria, Debt Servicing Impact, Return on Assets (ROA), Debt Sustainability in Nigeria.

INTRODUCTION

Government borrowing has been a cornerstone of Nigeria's fiscal framework, serving as a primary mechanism to bridge budgetary shortfalls and fund capital projects in the face of recurring deficits. Since the early 2000s, the Federal Government has employed a blend of domestic and external debt instruments, including treasury bills, bonds, and sovereign loans, to finance public expenditures and stimulate economic activity (Akanbi, 2020; Jacob & Umoh 2024). The strategic aim has been to optimize the cost of borrowing while balancing risk exposures associated with currency fluctuations and rollover obligations.

Effective public debt management in Nigeria is anchored in a formal framework established by the Debt Management Office (DMO), which outlines objectives such as minimizing medium- and long-term borrowing costs, ensuring prudent risk levels, and promoting the development of domestic debt markets (Olasunkanmi & Ajibowo 2024). Key elements of this framework include calibrating debt maturities, maintaining a diversified investor base, and conducting active liability management operations. Through regular auctions and buyback programs, the DMO aims to smooth out the debt servicing profile and mitigate refinancing pressures that could destabilize fiscal planning (Jacob, 2023; Sapp, 2024).

The health of the banking sector is intrinsically linked to the dynamics of government debt. Nigerian commercial banks hold a significant share of outstanding government securities, using them both as liquid assets to meet prudential requirements and as yield instruments in their investment portfolios (Eze & Onyekachi 2020). Consequently, shifts in interest rates, driven by monetary policy adjustments or debt-management decisions, directly influence banks' net interest margins and earnings profiles. Prolonged high yields on treasury instruments may crowd out credit to the private sector by diverting bank funding towards risk-free government debt (Mohammed, 2019).

Moreover, the quality of banks' loan books is sensitive to macroeconomic conditions shaped by public-debt policies. Elevated debt levels can exert upward pressure on interest rates, thereby dampening economic growth and curtailing demand for credit. This, in turn, can lead to higher nonperforming loans if borrowers struggle to service their obligations (Adegboye, 2019). In addition, dependence on external borrowing introduces foreign-exchange risk:

sudden currency devaluations can increase debt-service costs and transmit stress to banks holding government instruments denominated in foreign currencies (Okoro, 2021).

The considerable volatility in global oil prices further compounds Nigeria's debt-management challenges. Oil revenue constitutes a significant portion of federal receipts; fluctuations in crude prices, therefore, result in unpredictable fiscal inflows, prompting unplanned borrowing or the rollover of maturing obligations (Jacob & Umoh 2023). This revenue volatility has been a recurring theme, leading to episodic debt buildup and liquidity squeezes in the banking sector when government cash flows are delayed or reprofiled.

Nigeria has also faced structural policy reversals that affect debt sustainability and financial-sector stability. Sudden shifts in fiscal priorities, such as emergency stimulus packages or subsidy reforms, can spike borrowing requirements and alter the mix of short-term versus long-term debt (Okoro, 2021). Banks, as primary underwriters and holders of sovereign paper, bear the immediate consequences of such changes through repricing of assets and recalibration of risk-management frameworks.

In response to these complexities, regulators and policymakers have increasingly emphasized the need for enhanced coordination among fiscal authorities, the central bank, and the banking industry. Measures such as the issuance of longer-dated bonds, the introduction of debt-repo transactions, and a gradual improvement in transparency and reporting standards aim to deepen domestic debt markets and reduce reliance on expensive external funding (Todorov, 2017). Nevertheless, the empirical relationship between evolving debt-management practices and bank-level outcomes in Nigeria remains an underexplored area of research.

Despite the established theoretical link between debt-management strategies and banking sector performance, there is limited empirical research on how Nigerian banks have responded to changes in government borrowing practices. Key areas lacking quantitative analysis include the impact of variations in public debt maturity on asset-liability management, the effect of shifts in domestic versus external debt on foreign exchange exposure and risk calculations, the impact of oil price fluctuations on non-performing loan ratios, and the influence of sovereign yield curve adjustments on private sector lending (Jacob, 2018). Additionally, while policies aim to expand the domestic debt market, it remains unclear whether these measures have improved bank stability and profitability. Nigeria's frequent fiscal-policy reversals and funding challenges raise concerns about banks' ability to handle rollover risks and funding shocks. Without in-depth analysis, policymakers cannot determine if current debt-management reforms are sufficient. This study aims to examine how Nigeria's debt strategies affect the return on assets (ROA) of commercial banks, offering insights for fiscal authorities and regulators.

LITERATURE REVIEW

Conceptual Framework

Public debt is any government financial commitment that is a result of borrowing to close budgetary shortfalls or to fund long-term investments. Gaber (2021) states that public debt refers to all liabilities of national, regional, and local governments, typically in the form of securities and loans that must be repaid in the future with interest. This is in contrast to the situation with private borrowing, as this debt is issued by sovereign bodies, such as bonds and treasury bills, which are often secured by the full faith and credit of the government. In greater detail, Suter (2023) describes the concept of public debt as the combined uncredited deficits at all levels of government, expressed in instruments both in domestic and foreign currency. This debt indicates not only past fiscal imbalances but also future fiscal obligations, including those related to state-owned enterprises and government-guaranteed projects.

Public debt management is driven by three main factors: creditor composition, maturity structure, and currency denomination. Creditor composition differentiates between official sources, such as multilateral institutions, and private creditors, including national banks and international bondholders (Mehdi & Outmane 2025). Maturity structure distinguishes between short-term obligations that are sensitive to interest rates and present rollover risks, and long-term debts, which are less sensitive to interest rates but may involve higher interest rates. Currency denomination divides debt into domestic-currency liabilities, which do not expose the company to exchange-rate risks, and foreign-currency borrowings, which can add to the fiscal load in the event of a local-currency depreciation. These aspects are crucial when determining a government's debt policy, as they impact fiscal sustainability, monetary policy independence, and susceptibility to exogenous shocks (Suter, 2023).

Structure of Public Debt

Public debt in Nigeria comprises debts incurred by federal, state, and local governments to fund budget deficits and infrastructure projects. The form of public debt and profile of servicing in Nigeria has grave implications for fiscal sustainability and economic development (Anisiobi *et al*., 2023).

Domestic debt refers to the government's debt issued in the local currency, primarily in the form of treasury bills, bonds, and borrowing through local financial institutions. The domestic debt in Nigeria has experienced significant growth since the early 2000s, and treasury bills with short maturities have the highest proportion of the stock (Udo & Augustine 2021). The government was exposed to rollover risk and interest rate volatility because, in 2004, close to 60 percent of domestic debt had a maturity period of less than one year (Asogwa & Ezema 2005). Furthermore, the Central Bank of Nigeria was the largest shareholder in federal government securities, which limited the number of investors in the market and secondary-market liquidity. This dependence on a small group of investors compounds the rollover pressures, especially when treasury-bill yields increase and the debt office must offer ever-higher rates in

order to fund itself. One way in which debt managers have mitigated these risks is through offering longer-term bonds and expanding the investor base beyond the banking industry (Asogwa & Ezema 2005).

External debt includes borrowings in foreign currencies by multilateral and bilateral creditors, as well as by commercial banks and in the international capital market. The development of Nigeria's external liabilities is such that its earlier liabilities were primarily concessional loans provided by the World Bank and the Paris Club during the 1980s (Ademola, 2023). However, since 2007, its liabilities have consisted of a large amount of Eurobond issues and commercial credits. Concessional loans are typically long-term loans with lower interest rates, whereas market-rate borrowings, such as eurobonds, have higher yields and shorter tenures. As of 2021, the total external debt exceeded $ 40 billion, approximately 45 percent of which was in the form of Eurobonds, along with sovereign sukuk (Charlie & Akpan 2024). This has exposed Nigeria to exchange-rate risks, as the decline in the value of the naira has significantly increased the cost of servicing foreign-currency debt. To stabilize currency markets, policymakers have attempted to balance concessional and non-concessional borrowings, employ hedging instruments, and cooperate with the central bank (Osifalujo *et al*., 2022).

Public debt servicing refers to the payment of interest and repayment of the principal of the debt owed. Servicing expenses in Nigeria have been on the rise as the debt has increased, taking up an ever-growing portion of federal revenues. Interest and principal payments increased by up to almost 40% of total federal receipts between 2019 and 2023 (Joshua & Onuora 2024). These elevated servicing ratios limit fiscal space for investment in development and increase the likelihood of the so-called crowding-out effect, in which debt servicing crowds out investments in social and capital projects. Research indicates that the long-term servicing pressures compel governments to roll over domestic debt at increased yields or externally borrow to cover maturing liabilities, generating a cycle of indebtedness. Experts suggest that to enhance the sustainability of debt servicing, it is primarily necessary to adhere to Medium-Term Debt Management Strategies (MTDS), focus on productive infrastructure borrowing within the country, and renegotiate loan terms to prolong maturities and reduce interest rates (Akanbi *et al*., 2022).

Debt Management Strategy

A debt management strategy (DMS) is an approach used to align government decision-making on borrowing with both fiscal and macroeconomic objectives. According to the International Monetary Fund (2017), a DMS is a scheme for evolving the public debt portfolio, with the aim of meeting cost and risk goals. Likewise, the World Bank (2017) defines a DMS as a document that provides the purpose of debt management and contains information about the current debt structure, sources of funds, and associated risks.

The primary objective of DMS is to finance public spending, reduce long-term costs, and ensure that risks are adequately controlled (World Bank, 2017). The growing sophistication in the financial markets has necessitated a clearer DMS to assist the governments in the management of the maturity profile, currency composition, and investor base of the public debt, enabling fiscal sustainability and economic soundness.

An effective DMS is designed to reduce the costs incurred in servicing debt and managing the risks associated with interest rate fluctuations, rollovers, and currency mismatches. For example, raising the maturity of debt may increase short-term interest payments but lower refinancing risks (International Monetary Fund, 2017). The IMF and World Bank created the MTDS toolkit to assess cost-risk trade-offs and create debt strategies aligned with macroeconomic policies (International Monetary Fund, 2017).

The introduction of DMS is a dynamic process that involves diagnostic reviews, objective determinations, recommendations from government stakeholders, and implementation. Monitoring and adjustments are crucial for navigating market changes and financial transitions (Obiukwu *et al*., 2024).

Despite these benefits, several obstacles limit the successful implementation of DMS, including data gaps, political influences, and institutional distortions. Additionally, in emerging markets, lower liquidity and fewer investors can increase rollover risks, which complicate achieving debt management targets.

Forms of Debt Management Strategy

The approaches to debt management could be divided into time horizon, management techniques, financing tools, and goals. Time-horizon strategies encompass short-term, medium-term, and long-term strategies that meet various funding requirements and risk aversion. Short-term strategies focus on liquidity, medium-term strategies consider cost-risk trade-offs, and long-term strategies aim to secure favorable financing terms and mitigate refinancing risks.

Debt managers can be passive and active. A passive strategy involves allowing the debt stock to mature according to the scheduled plans. In contrast, an active strategy entails taking proactive measures, such as buybacks and debt swaps, to optimize the debt profile.

External and domestic debt policies aim to diversify sources of funding, mitigate exposure to foreign currency risks, and access lower interest rates. Domestic debt policies emphasize domestic currency instruments, whereas external debt policies utilize concessional loans and commercial borrowings with varying risk ratings (Obiukwu *et al*., 2024).

Public Debt Management in Nigeria

There has been a significant increase in Nigeria's public debt level over the past few decades, primarily due to fiscal deficits and the need to finance infrastructure projects. By 2023, Nigeria's total public debt had exceeded ₦84 trillion, raising concerns about its impact on economic stability. Debt management is crucial for making borrowing sustainable and reducing the associated risks (Okonkwo & Akamike 2024).

The lack of revenue and a poor tax regime have resulted in Nigeria relying on domestic and external borrowing, with oil exports representing approximately 70 percent of federal revenues. This oil reliance exposes the country to global fluctuations of prices (Jacob & Umoh 2022). Rapidly increasing public debt included concessional lending in 1980s, followed by the more costly commercial lending such as Eurobonds (Okonkwo & Akamike 2024).

The organizational and legislative structure of debt management in Nigeria has been challenged by issues of ineffective enforcement and interagency coordination. This caused problems in managing debt and inappropriate allocation of borrowed money (Egbo, 2022).

DMO has been utilizing the MTDS framework to guide the process of borrowing on a medium-term basis, aiming to lengthen debt maturities and minimize currency risks (Okonkwo and Akamike 2024). However, fiscal discipline, betterment of tax revenues and institutional transparency are crucial in supporting the sustainability of the public debt in Nigeria.

Challenges of Public Debt Management in Nigeria

Several challenges hinder effective public debt management in Nigeria, including revenue constraints, reliance on external borrowing, and institutional deficiencies. These obstacles exacerbate fiscal risks and undermine efforts to achieve sustainable development. Narrow revenue bases, especially dependence on volatile oil revenues, and weak tax administration exacerbate fiscal deficits (Jacob, 2022; Okonkwo & Akamike, 2024). Additionally, Nigeria's reliance on external borrowing exposes the country to currency risk, as exchange rate fluctuations can sharply increase the cost of servicing foreign-currency debt (Okonkwo & Akamike 2024; Oyedokun, 2024). Other challenges include governance deficits, corruption, and the misallocation of funds, which erode the potential benefits of borrowed capital and lead to inefficiencies in public spending (Egbo, 2022).

Rising debt-servicing costs, which consume a significant portion of federal revenue, further constrain fiscal flexibility. Nigeria's underdeveloped domestic capital markets also hinder effective debt management, forcing the government to issue short-term treasury bills at high yields, increasing rollover risks (Oyedokun, 2024). Additionally, Nigeria remains vulnerable to external shocks, such as global oil price fluctuations, which increase the cost of servicing foreign debt and limit access to international financing (Okonkwo &Akamike, 2024).

Theoretical Framework

The scholarly discourse on public debt encompasses diverse theories that elucidate its economic implications, sustainability, and developmental consequences. Classical and modern frameworks explore the macroeconomic roles of government borrowing, the debt-overhang hypothesis examines investment distortions under heavy leverage, and dependency theory situates sovereign debt within unequal global relations (Jacob, 2024). Together, these perspectives offer a multifaceted understanding of why and how public debt affects growth, fiscal health, and autonomy.

Theory of Public Debt

Adam Smith and David Ricardo held that government deficits divert resources from productive uses, hindering capital accumulation and long-term growth (Bilan, 2016). Under this view, debt should be confined to extraordinary circumstances such as wartime expenditure and repaid swiftly to avoid impeding the private sector.

By contrast, Keynesian theory reframes public debt as a countercyclical tool: deficits during economic downturns can stimulate aggregate demand and accelerate recovery, with the long-run cost justified by short-run stabilisation gains (Jacob & Umoh 2025). Neoclassical and rational-expectations schools later emphasized that debt's impact depends on its maturity structure, expected inflation, and credibility of fiscal authorities, suggesting that under certain conditions even large deficits may be sustainable if markets believe in eventual consolidation (Aybarç, 2019).

Debt-Overhang Hypothesis

Myers's (1977) corporate finance analysis first identified "debt overhang" in firms, showing that excessive leverage deters positive net present value projects because future earnings largely accrue to creditors. Krugman (1988) adapted this framework to sovereign debt, defining overhang as a state in which expected repayment falls short of contractual debt, thereby discouraging new domestic and foreign investment. Borensztein (1990) further emphasises that when the anticipated share of project returns goes toward debt service, governments and private actors lose incentive to expand productive capacity. The IMF (1989) likewise noted that overhang distorts fiscal and investment decisions, as high obligations divert scarce resources toward servicing rather than growth-enhancing expenditure.

Dependency Theory

Dependency theory, pioneered by Frank (1967) and further developed by Cardoso and Faletto (1979), interprets underdevelopment as the result of a hierarchical global economy in which "periphery" states supply raw materials and cheap labor to "core" economies. Dependence on external markets and capital inflows traps developing countries in subordinate roles, constraining policy autonomy and perpetuating structural poverty. Critics have argued that classic dependency theory underestimates domestic institutional factors and overstates external determinism. More recent scholarship, such as Madariaga and Palestini (2023), refines the approach by integrating insights from comparative capitalism, showing how varied national institutions mediate the core-periphery dynamic, while retaining the emphasis on unequal exchange and external constraints.

These theoretical perspectives emphasize that the structure and scale of public debt have a profound impact on economic incentives, fiscal sustainability, and the capacity for autonomous development. Classical, Keynesian, and

rational-expectations theories offer complementary perspectives on the macroeconomic roles and risks associated with government borrowing. The debt-overhang hypothesis highlights the microeconomic investment distortions arising from unsustainable obligations. Dependency theory situates public and private debt within a broader geopolitical context, reminding policymakers that external financing can perpetuate subordinate development paths unless accompanied by deliberate institutional and structural reforms.

Empirical Review

Over the past decade, a growing body of empirical research has examined how various dimensions of public debt management influence the performance of Nigeria's commercial banks, employing diverse methodologies—including panel regressions, time-series analyses, and quasi-experimental approaches—to isolate the effects of debt composition, maturity structures, and policy reforms on indicators such as return on assets (ROA), net interest margin (NIM), liquidity ratios, nonperforming loan (NPL) ratios, and credit growth.

Eze and Ogiji (2016) differentiated between internal and external debt, highlighting that external debt—when poorly managed—exposes banks to exchange rate risks, while internal debt leads to overconcentration in government securities. Olajide and Olaniyan (2017) examine the impact of government debt policies in Nigeria on the banking sector. They find that heavy reliance on external borrowing exposes banks to exchange rate risks, while domestic borrowing increases interest rates, reducing credit demand and affecting the profitability of banks.

Chinedu and Onumajuru (2018) adopt a time-series perspective on how rising debt-servicing obligations impact bank NPL ratios from 1990 to 2015. Their cointegration and error-correction models reveal that increases in debt servicing exert a positive, albeit statistically insignificant, pressure on NPL ratios, suggesting that servicing costs alone may not immediately translate into credit deterioration but pose medium-term risks to asset quality.

Adegbie and Otitolaiye (2019) analyze the impact of credit risk management on bank profitability using panel data from 13 deposit money banks over the period 2006–2018. Applying random-effects regression, they find that higher ratios of nonperforming loans and loan loss provisions exert a statistically significant adverse effect on ROA and Tobin's Q. In contrast, stronger capital adequacy ratios mitigate these adverse impacts. Their results underscore the centrality of sound provisioning policies in preserving bank value amidst deteriorating credit portfolios.

Ijeoma (2019) focuses on the effect of debt management strategies on credit expansion in Nigerian banks. The study suggests that government debt management policies, including the issuance of long-term bonds, have a direct impact on interest rates and affect the credit supply. Banks are less likely to extend credit in a high-interest-rate environment, which can slow down economic growth.

Adeyemi et al. (2020) discuss how the coordination (or lack thereof) of fiscal and monetary policy has led to problems in Nigeria's financial system. They conclude that inadequate debt management strategies contribute to high inflation and a lack of investor confidence, which indirectly affects the banking sector's ability to raise capital and lend efficiently.

Eze and Onyekachi (2020) shift focus to the broader framework of government debt policies and the banking sector's balance sheets. Using fixed-effects panel regressions on data from 2010 to 2018, they demonstrate that increased holdings of domestic government securities improve banks' current ratios but correspond with lower loan-to-deposit ratios, suggesting a liquidity-for-profitability trade-off. The authors argue for calibrated debt-issuance patterns that balance public funding needs with the preservation of private-sector credit intermediation.

Ayunku (2020) examines issues of bad debts and their management among 14 listed commercial banks from 2014 to 2019. Employing a random-effects panel model, Ayunku shows that nonperforming loan ratios and loan loss provisions significantly depress both ROA and Tobin's Q. In contrast, a higher loan-to-deposit ratio exerts a positive effect on profitability metrics. The study recommends tighter monitoring of loan portfolios and enhanced provisioning frameworks to curb the drag of bad debts on bank returns.

Mohammed and Okoro (2020) explore how the maturity composition of public debt affects bank performance over the period 2000–2018. Their time-series ARDL model reveals that lengthening the average maturity of government bonds enhances banks' net interest margins by smoothing rollover pressures. However, they caution that extended maturities can raise long-term funding costs, which in turn may erode ROA if not matched by yield-curve improvements.

CBN Reports (2021) showed a strong correlation between public debt levels and reduced loan-to-deposit ratios among Nigerian commercial banks, particularly when Treasury Bills and bonds offered more attractive returns.

Nwankwo and Adebisi (2021) apply panel data techniques to assess the "debt overhang" effect on credit growth in the Nigerian banking sector from 2005 to 2020. They find a robust negative relationship between sovereign debt-to-GDP ratios and banks' annual private-sector lending growth, confirming that excessive public indebtedness can crowd out productive bank financing. The study emphasizes the importance of prudent debt ceilings in maintaining banking sector support for economic activity.

Oloyede and Fadare (2022) examine external debt exposures and their implications for bank earnings from 2008 to 2020. Using random-effects models, they document that banks with higher shares of foreign-currency–denominated debt securities experience pronounced volatility in NIM during periods of exchange-rate turbulence. The authors advocate for hedging arrangements and greater reliance on local-currency instruments to mitigate currency-induced profit shocks.

Ogbuagu and Ezenwa (2021) compare the effects of domestic versus external public debt shares on bank performance from 2011 to 2019. Their fixed-effects analysis shows that a larger domestic debt share is positively associated with

ROA and loan-to-deposit ratios. In contrast, a higher proportion of external debt correlates with elevated NPL ratios. These findings reinforce calls for rebalancing debt portfolios toward local-currency borrowing to bolster bank stability.

Bello and Akinlo (2022) employ an ARDL approach to investigate the long-run relationship between the public debt-to-GDP ratio and banking sector stability from 1980 to 2020. They find that higher debt burdens erode capital adequacy ratios in the long run but simultaneously spur deposit growth, possibly reflecting public trust in government-backed securities. The authors conclude that moderating debt growth is essential to maintain bank capitalization without compromising deposit mobilization.

Suleiman and Olushola (2023) exploit the 2017 Medium-Term Debt Management Strategy reform as a natural experiment. Implementing a difference-in-differences framework on bank performance before and after the reform, they report significant improvements in average ROA and reductions in NPL ratios among banks more heavily exposed to government bond auctions. Their work suggests that clear, rule-based issuance frameworks can generate measurable benefits for the banking sector.

RESEARCH METHODOLOGY

Research Design

The study employs an ex post facto (observational) design to assess the causal links between debt management variables and bank performance, using only historical, secondary data. It is a subtype of quasi-experimental design, which neither manipulates nor randomly assigns the independent variable, while relying on naturally occurring group differences to explore cause-and-effect relationships. It leverages preexisting traits in archival (historical) data to infer causal links, utilizing statistical methods to enhance internal validity despite the observational nature of the data. Thus, data proxying debt management strategies and bank performance were estimated using regression analysis to ascertain the effect on the latter.

Study Area

The research is carried out in Nigeria's principal financial centers, Lagos, Abuja, and Port Harcourt, where banking operations are most concentrated. Located between latitudes 4°N and 14°N and longitudes 3°E and 15°E, these cities host the headquarters and major branches of both indigenous and international commercial banks. Focusing on these locations captures the diversity of institutional practices across the country's leading economic regions. It ensures that findings reflect the environments in which debt management decisions have the most significant impact.

Population of The Study and Data Sources

The target population comprises all commercial banks licensed by the Central Bank of Nigeria (CBN) as of December 31, 2024, which numbered 22. Since the CBN and the Nigeria Deposit Insurance Corporation (NDIC) provide aggregated data on all the banks, no sample size selection was necessary, as all banks' data had been aggregated.

The study draws on secondary data sources. Secondary data are compiled from the annual reports and audited financial statements of the Central Bank of Nigeria and the Nigerian Deposit Insurance Corporation, as well as relevant peer-reviewed journal articles and industry analyses. These combined sources provide a robust empirical foundation for assessing debt strategy outcomes over time.

The variables employed in the research model are measured to capture the study's intended objectives. This subsection presents the formula used to compute the various proxies of the independent and dependent variables, as presented in Table 1.

Table 1: Measures of Research Variables.

Sr./No.	Variable	Description	Type	Measurement	A Priori Expectation
1	ROA	Return on Assets	Dependent	$Taxes \times 100$	
2	DDGDP	Domestic Debt Structure	Independent	$\frac{\text{Domestic Debt Outstanding}}{\text{GDP}} \times 100$	Positive
3	EDGDP	Domestic Debt Structure	Independent	$\frac{\text{External Debt Outstanding}}{\text{GDP}} \times 100$	Positive
4	TDSTDBT	Public Debt Servicing	Independent	$\frac{\text{Total Debt Services}}{\text{Total DebtOutstanding}} \times 100$	Negative

Source: Author's Compilation (2025).

Model Specification

The model for the study is as follows:

ROA = f(DDGDP, EDGDP, TDSTDBT) (1)

These are expressed in their econometric forms as follows:

$ROA = \alpha_0 + \alpha_1 DDGDP_t + \alpha_2 EDGDP_t + \alpha_3 TDSTDBT_t + \mu_t$ (2)

Where: ROA = Return on assets

DDGDP = Domestic Debt Structure

EDGDP = External Debt Structure

TDSTDBT = Total Debt Servicing

α_0 = Intercepts
α_1–α_3 = Coefficient of explanatory variables
μ_t = Error term.
This study employs quantitative methods rooted in established statistical and econometric techniques. Both descriptive and inferential statistical tools were used. The research hypotheses were tested using the least squares regression method, and the results of the data analyses are presented in Chapter Four.

Ethical Considerations
The research adheres to ethical standards by ensuring that participation is entirely voluntary and free from coercion. Prospective respondents receive a letter of introduction and an informed consent form detailing the study's purpose, procedures, and the measures taken to safeguard confidentiality. Data are reported in aggregate form only, preventing the identification of individual banks or respondents and ensuring anonymity throughout the research process.

RESULTS AND DISCUSSION

Data Presentation
The data presented in Table 2 were analyzed using both descriptive and correlation statistical tools as well as the multiple regression technique in order to determine the relationships existing between the variables of study.

Table 2: Domestic Debt, External Debt, Debt Service, and Banks' Return on Assets (2000-2024).

Year	DMDBT (₦'Billion)	DD/GDP (%)	EXDBT (₦'Billion)	ED/GDP (%)	TDBTS (₦'Billion)	DS/TDBT (%)	ROA (%)
2000	898.25	12.72	3,097.38	43.86	131.05	3.28	3.00
2001	1,016.97	12.35	3,176.29	38.57	155.42	3.71	4.73
2002	1,166.00	10.14	3,932.88	34.19	163.81	3.21	3.47
2003	1,329.68	9.81	4,478.33	33.03	363.51	6.26	2.67
2004	1,370.33	7.56	4,890.27	26.98	382.50	6.11	3.12
2005	1,525.91	6.60	2,695.07	11.66	394.00	9.33	1.85
2006	1,753.26	5.77	451.46	1.49	249.30	11.31	1.61
2007	2,169.64	6.26	438.89	1.27	213.73	8.19	3.89
2008	2,320.31	5.81	523.25	1.31	381.20	13.41	3.95
2009	3,228.03	7.43	590.44	1.36	251.79	6.59	-64.72
2010	4,551.82	8.21	689.84	1.24	415.66	7.93	3.91
2011	5,622.84	8.83	896.85	1.41	527.18	8.09	-0.04
2012	6,537.54	9.00	1,026.90	1.41	679.30	8.98	2.62
2013	7,118.98	8.79	1,387.33	1.71	828.10	9.74	2.33
2014	7,904.03	8.77	1,631.50	1.81	941.70	9.88	2.29
2015	8,837.00	9.28	2,111.51	2.22	1,060.38	9.69	2.34
2016	11,058.20	10.78	3,478.92	3.39	1,426.00	9.81	1.48
2017	12,589.49	10.96	5,787.51	5.04	1,823.89	9.92	2.00
2018	12,774.41	9.90	7,759.23	6.01	2,161.37	10.53	2.20
2019	14,272.64	9.80	9,022.42	6.20	2,453.22	10.53	2.30
2020	16,023.89	10.39	12,705.62	8.24	3,265.13	11.37	1.77
2021	19,242.56	10.93	15,855.23	9.00	4,221.65	12.03	1.40
2022	22,210.36	10.98	18,702.25	9.24	5,656.58	13.83	1.90
2023	53,258.01	22.72	38,219.85	16.30	8,556.93	9.35	2.26
2024	74,377.92	26.80	70,409.86	25.37	13,120.00	9.06	2.00

Source: CBN Statistical Bulletin (2023) NDIC Annual/Quarterly Reports (Various Issues)

This seeks to determine the basic characteristics of various variables employed in this study. The result of the descriptive statistics is presented in Table 3.
The result presented in Table 3, DMDBT has a mean of N11,726b, which is well above the median (N6538b), indicating a right-skewed distribution. However, it has a higher standard deviation which indicates wider spread in the data. In the case of DD/GDP, the mean 10.42% > Median 9.80% signals a moderate right skew. The Std. Dev. Of 4.74% relative to mean shows wide variability. EXDBT's mean (N8558b) far exceeds Median (N3176b), and the Std. Dev. (15324) nearly twice the mean, underscoring large positive outliers. ED/GDP has mean 11.69% and median 6.01% confirming skew. PDBTS also has mean of N1992b and median of N679b which shows strong right skew. It also has a large Std. Dev. of N3076b relative to average debt payments, also confirming wide variations across the years. On the other hand, TDS/TDBT mean of 8.88% is slightly below median of 9.35% which hints at mild left skew. However, its Std. Dev. of 2.81% suggests it clusters around the average service ratio. Lastly, ROA has mean of –0.23% and Median of 2.29%, which reflects negative skew with some deeply unprofitable outliers, particularly resulting from the global economic meltdown. It also has a huge Std. Dev. Of 13.47% depicting volatile profitability.

Table 3: Descriptive Statistics.

	DMDBT	DD/GDP	EXDBT	ED/GDP	PDBTS	TDS/TDBT	ROA
Mean	11726.32	10.42253	8558.363	11.69266	1992.936	8.884830	-0.226800
Median	6537.540	9.800003	3176.290	6.010857	679.3000	9.354099	2.290000
Maximum	74377.92	26.80345	70409.86	43.85516	13120.00	13.82601	4.730000
Minimum	898.2500	5.772015	438.8900	1.243642	131.0500	3.212666	-64.72000
Std. Dev.	17100.10	4.738327	15323.93	13.53538	3075.564	2.807601	13.47351
Skewness	2.619752	2.345755	3.059719	1.169604	2.423663	-0.507251	-4.652396
Kurtosis	9.394882	8.312278	12.17003	2.925572	8.489501	2.849469	22.78823
Jarque-Bera	71.19471	52.32350	126.6011	5.705656	55.86582	1.095701	498.0764
Probability	0.000000	0.000000	0.000000	0.057681	0.000000	0.578191	0.000000
Sum	293158.1	260.5632	213959.1	292.3164	49823.40	222.1208	-5.670000
Sum Sq. Dev.	7.02E+09	538.8417	5.64E+09	4396.956	2.27E+08	189.1830	4356.852
Observations	25	25	25	25	25	25	25

Source: Author's Computation Using Eviews

Correlation Statistics

Correlational analysis helps the researcher understand the relationships between variables and provides insights into how they may influence each other. By examining the correlation statistics, one can assess the strength and direction of these relationships. In this study, the correlation matrix of the variables used is presented in Table 4 below.

The results indicate that all the variables show positive correlations with the return on assets (ROA), suggesting that higher values of the independent variables tend to be associated with higher bank performance (ROA). Furthermore, most variables are positively correlated with one another, except for the domestic debt-to-GDP (DD/GDP) and total debt service-to-debt burden ratio (TDS/TDBT), as well as the external debt-to-GDP (ED/GDP) and TDS/TDBT, which exhibit negative correlations. These negative correlations suggest that as one of these variables increases, the other tends to decrease.

Table 4: Correlation Matrix of Variables in the Study.

Variable	DMDBT	DD/GDP	EXDBT	ED/GDP	PDBTS	TDS/TDBT	ROA
DMDBT	1.000						
DD/GDP	0.916	1.000					
EXDBT	0.972	0.919	1.000				
ED/GDP	0.073	0.395	0.239	1.000			
PDBTS	0.986	0.888	0.978	0.103	1.000		
TDS/TDBT	0.270	-0.077	0.161	-0.715	0.316	1.000	
ROA	0.083	0.123	0.094	0.186	0.097	0.137	1.000

Source: Researcher's Computation using E-views

The findings suggest that while most variables are positively correlated with ROA, the negative correlations between certain debt-related variables indicate complex interrelationships.

Least Square Regression

The least square regression was conducted to analyze the impact of cashless policy instruments on the return on assets (ROA) of banks in Nigeria. This method enabled the researcher to determine the significance of the relationship between the independent variables—domestic debt (DD/GDP), external debt (ED/GDP), and the debt service-to-debt burden ratio (TDS/TDBT)—and the dependent variable, ROA. Additionally, the regression analysis helped in identifying how these policy instruments affect banks' financial performance, particularly in the context of the Nigerian banking sector's reaction to changes in government borrowing strategies and debt management.

The results from the regression, carried out using the least square method, are presented in Table 5. The adjusted R-squared value of 0.348 indicates that approximately 34.8% of the variation in banks' ROA can be explained by the independent variables included in the model. This suggests that while the independent variables do have some influence on ROA, a significant portion of the variation remains unexplained, possibly due to other factors not captured by the model.

Further analysis reveals that the F-statistic of 3.455, with a corresponding p-value of 0.023, demonstrates that the overall model is statistically significant, and thus, the chosen variables are jointly contributing to the model's fit. However, a closer inspection of the t-statistics shows that while some variables, such as domestic debt (DD/GDP) and external debt (ED/GDP), do not have a significant impact on ROA, the debt service-to-debt burden ratio (TDS/TDBT) plays a crucial role. Specifically, TDS/TDBT exhibits a significant positive impact on ROA, with a t-statistic of 2.935241 and a p-value of 0.0088. This suggests that increases in the debt service burden today positively influence the return on assets of banks in Nigeria.

On the other hand, the lagged variable for TDS/TDBT, representing the previous period's debt service burden, shows a significant negative effect on ROA, with a t-statistic of -2.957620 and a p-value of 0.0084. This indicates that while

a current increase in debt servicing is associated with improved ROA, a high debt burden in the past negatively affects bank performance, reversing any gains made in the current period.

The findings also highlight that the coefficients for domestic debt (DD/GDP) and external debt (ED/GDP) do not show statistically significant effects on the financial performance of banks in Nigeria, as their t-statistics are not significant (1.444453 and -0.177112, respectively). This implies that the levels of domestic and external debt, when measured relative to GDP, do not have a substantial direct impact on the banks' return on assets in the Nigerian context during the study period.

In summary, the results suggest that Nigeria's cashless policy instruments, particularly the debt service-to-debt burden ratio, have a significant impact on bank performance. However, the influence of domestic and external debt levels on bank performance remains negligible. These insights could guide policymakers in designing more effective debt management strategies that consider the timing and scale of debt servicing, which could help stabilize the banking sector and improve financial performance.

Table 5: ARDL Regression Results for Cashless Policy Impact on ROA.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	-0.024630	0.191941	-0.128320	0.8993
DD/GDP	1.031561	0.714154	1.444453	0.1658
ED/GDP	-0.073686	0.416039	-0.177112	0.8614
TDS/TDBT	3.738607	1.273697	2.935241	0.0088
TDS/TDBT(-1)	-4.374812	1.479166	-2.957620	0.0084
C	-5.511859	16.49391	-0.334175	0.7421

Model Summary:

- R-squared: 0.489736
- Adjusted R-squared: 0.347996
- F-statistic: 3.455169
- Prob(F-statistic): 0.023065
- Durbin-Watson Stat: 2.017775

Source: Researcher's Computation using E-views

The adjusted R-squared value of 0.348 signifies that the independent variables explain 34.8% of the variation in ROA. The significant t-statistics and p-values reveal that the TDS/TDBT ratio is the only variable significantly influencing the return on assets of Nigerian banks.

DISCUSSION OF FINDINGS

From the results in Table 5, the lagged ROA term (ROA(–1)) has a small negative coefficient (–0.0246) that is not statistically significance (p = 0.899). This implies minimal short-run persistence implying that past profitability does not meaningfully predict current profitability once debt metrics are accounted for. This could be attributed to the uncertainty of Nigeria's public debt profile, which has continued to skyrocket.

In contrast, domestic debt as a share of GDP (DD/GDP) carries a positive coefficient of 1.0316 but is not statistically significant (p = 0.166), suggesting no robust short-run effect. This suggests that an increase in domestic debt enhances bank performance. The insignificant effect of domestic debt on bank performance is an indication that the domestic debt management strategy has not translated into meaningful profitability for banks. However, the positive coefficient of debt is an indication that domestic debt has the potential of stimulating greater economic activity that can translate into increased profitability for banks in Nigeria, due to the returns that accrue form their financial investments in government securities.

In contrast, external debt relative to GDP (ED/GDP) also fails to reach significance (coefficient –0.0737; p = 0.861), indicating that external indebtedness does not drive immediate changes in ROA. The negatively signed coefficient is consistent with the a priori expectation, which implies that external debt has a crowding-out effect on local enterprises. Unexpectedly, total debt services as a percentage of total debt outstanding (TDS/TDBT) has a sizable positive effect (3.7386; p = 0.0088). A one-unit increase in debt servicing is associated with a 3.74-point rise in ROA in the short run. This may reflect productive deployment of debt capital into revenue-generating assets. However, the negatively signed one-period lag is an indication that increased debt service burden can hamper banking performance.

CONCLUSION

In conclusion, the issue of high public debt burden has sparked significant theoretical and empirical debate, with some arguing that debt positively impacts bank performance, while others suggest the opposite. This study aimed to examine the relationship between public debt strategies and bank performance in Nigeria, focusing on domestic debt, external debt, and debt servicing, and their influence on banks' return on assets (ROA). By reviewing conceptual, theoretical, and empirical literature, and analyzing secondary data from the Central Bank of Nigeria (CBN) spanning 2000 to 2024 using advanced econometric tools, the study reached several key findings.

The results showed that the independent variables account for 34.7% of the changes in ROA, and the F-statistics of 3.4 with a p-value of 0.023 suggest a good model fit. However, t-statistics indicate that only debt servicing has a

significant effect on ROA, while domestic and external debt levels have insignificant impacts on bank performance in Nigeria.

From the analysis, it was concluded that previous profitability (ROA lag), domestic debt level (DD/GDP), and external debt level (ED/GDP) do not significantly affect the financial performance of banks. In contrast, the current debt service-to-debt burden ratio (TDS/TDBT) positively and significantly influences ROA, while its one-period lag negatively impacts bank performance. This suggests that while an increase in the debt service burden today boosts bank performance, a high debt burden from the previous period reverses this gain.

Ultimately, Nigeria's public debt management strategy has not produced the desired effects on the banking sector's performance.

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