# Effect of Asset Quality Regulations on Financial Performance of Deposit Money Banks in Nigeria

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## ABSTRACT

This study investigates how regulations concerning asset quality of Deposit Money Banks (DMBs) affect their financial performance in Nigeria from 2015 to 2025. Concerns about the effectiveness of prudential regulations in sustaining profitability and stability have intensified due to rising non-performing loans (NPLs) and loan concentration. An Autoregressive Distributed Lag (ARDL) model is applied to data of 41 quarterly observations sourced from the Central Bank of Nigeria to explore short- and long-run dynamics between asset quality regulation—measured by loan-to-asset ratios and NPLs—and return on equity. The findings reveal no significant long-run relationship between asset quality regulation and financial performance. However, in the short run, loan-to-asset ratios exert a negative and significant effect, implying that excessive loan growth undermines profitability. Conversely, NPLs show no significant impact, suggesting that banks temporarily offset credit risks through provisioning and income diversification. The absence of long-run cointegration underscores the fragility of asset quality as a driver of sustained profitability. The study concludes that while credit expansion can yield short-term returns, it jeopardises long-term stability without robust risk management. It recommends that the Central Bank of Nigeria enforce stricter prudential guidelines, strengthen loan restructuring mechanisms, and promote proactive risk assessment to ensure sectoral resilience.

**Keywords**: Asset Quality Regulation, Financial Performance, Loans to Assets, Non-performing Loans, ROE.

## INTRODUCTION

Asset quality plays a central role in stabilising financial systems and protecting depositors, especially in emerging economies such as Nigeria. In recognition of this, prudential regulations have been designed to strengthen the soundness of Deposit Money Banks (DMBs) by setting standards on capital adequacy, liquidity, and credit risk management. The Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC) remain at the forefront of enforcing these rules to reduce vulnerabilities that could trigger bank failures and broader economic instability.

The Nigerian banking sector has undergone significant transformation in recent decades, driven by regulatory reforms, consolidation policies, and market restructuring aimed at repositioning banks for effective intermediation. Despite these efforts, the sector has not been immune to shocks. Past crises, whether linked to macroeconomic instability, governance failures, weak investor awareness, or inadequate disclosure, have repeatedly exposed structural weaknesses in the system (Wanjiru et al., 2024). For this reason, the CBN continues to place asset quality regulation at the core of its supervisory framework, emphasising prudential indicators that encourage banks to build and maintain high-quality loan portfolios (Zolkifli et al., 2019).

Recent industry trends underscore both the potential and the risks facing Nigerian banks. In 2022, the banking sector recorded its fastest growth in a decade, expanding by 17.24% in real terms and contributing about 3% to

GDP. Twelve major DMBs listed on the Nigerian Exchange posted combined post-tax profits of ₦1.07 trillion, with top performers such as Zenith Bank and Access Holdings reporting significant growth in customer deposits. Stanbic IBTC also posted the most substantial returns on equity, while others, including Access Holdings, saw profitability weaken (NGX, 2023). These figures highlight both the resilience and the uneven performance of banks, with asset quality standing out as a key differentiator in profitability outcomes.

However, challenges persist. Non-performing loans (NPLs) remain a pressing concern, as their rising share of total loans reflects the vulnerability of banks to credit risk (Luis, 2018). Despite the presence of regulatory safeguards, episodes such as the 2009 banking crisis, which necessitated the creation of the Asset Management Corporation of Nigeria (AMCON), demonstrate how poor asset quality can quickly erode profitability, diminish shareholder value, and threaten the stability of the financial system. Empirical studies affirm that high NPL ratios weaken performance by raising provisioning costs, impairing capital adequacy, and constraining liquidity (Wanjiru et al., 2024). Conversely, overly restrictive lending rules aimed at preserving asset quality may stifle income generation, creating a regulatory dilemma where stability and profitability appear to be at odds (Ismail, 2019).

The complexity of Nigeria's financial environment adds further weight to this debate. Weak credit culture, macroeconomic volatility, and gaps in risk assessment continue to magnify asset quality risks. While prior studies have explored the links between credit risk, asset management, and performance both globally and locally, there is limited empirical evidence on whether Nigeria's asset quality regulations effectively balance stability with profitability. This study seeks to bridge that gap by examining the impact of asset quality regulations—proxied by loans-to-total assets and non-performing loans—on the financial performance of Nigerian DMBs over the period 2015–2025.

Accordingly, the study tests the following hypotheses:

$H_{01}$: Loans-to-total assets have no significant effect on the financial performance of Deposit Money Banks in Nigeria.

$H_{02}$: Non-performing loans have no significant effect on the financial performance of Deposit Money Banks in Nigeria.

The rest of this paper is organised as follows. Section 2 reviews the concept, literature and theoretical framework. Section 3 discusses the data sources, model specification, and estimation techniques. Section 4 presents the empirical results and interprets the findings in light of both theory and real-world developments in the Nigerian banking sector. Section 5 concludes the study and provides policy recommendations aimed at strengthening asset quality regulation and improving financial stability in Nigeria.

## CONCEPTS FRAMEWORKS & LITERATURE REVIEW

### Concepts Frameworks

### Asset Quality Regulations

Asset quality is a critical parameter in assessing the financial health and stability of financial institutions, particularly banks. It refers to the quality of a bank's assets, which primarily include its loan portfolio and investments. High asset quality indicates a low risk of default and financial loss, while poor asset quality signifies higher risk, potentially leading to insolvency (Pagratis & Staikouras, 2021). Understanding asset quality is essential for stakeholders, including regulators, investors, and management, as it impacts a bank's profitability, risk profile, and regulatory compliance.

Ozili (2018) opined that asset quality is a critical component in assessing the financial health and stability of financial institutions, particularly banks. It refers to the evaluation of a bank's assets, primarily its loan portfolio, to determine the associated credit risk and the likelihood of defaults. High asset quality indicates that a significant portion of a bank's assets are expected to be repaid in full and on time, thereby ensuring the institution's

profitability and solvency. Asset quality involves evaluating a financial institution's assets to measure the credit risk associated with them. This assessment is crucial because the quality of assets directly impacts a bank's earnings and capital. Poor asset quality can lead to increased non-performing loans (NPLs), which diminish profitability and can threaten the institution's viability.

According to CBN (2023), regulatory bodies utilise frameworks like the CAMELS rating system to assess asset quality among other factors. The 'A' in CAMELS stands for Asset Quality, reflecting its significance in the overall evaluation of a bank's condition. This system rates institutions on a scale from 1 (best) to 5 (worst) based on various components, including asset quality. International accounting standards, such as the IFRS 9, also play a role in asset quality assessment by requiring impairment allowances against financial assets held at amortised cost or fair value through other comprehensive income (FVOCI). These allowances are based on expected credit losses, promoting timely recognition of potential asset impairments. High levels of NPLs require greater provisions for loan losses, reducing net income.

**Loans to Total Assets**

Loans are credit facilities granted by banks to customers for a fixed tenure, usually backed by collateral, and repaid with interest at agreed intervals. They are typically long-term in nature and may be extended for investment, acquisition of fixed assets, or expansion projects. Loans are contractual in nature, with clearly defined repayment schedules and legal enforceability. Loans and advances are the primary assets of deposit money banks (DMBs), as they represent the main channel through which banks earn income and contribute to economic growth by financing individuals, businesses, and government activities. In banking and finance literature, total loans and advances refer to the aggregate amount of credit facilities granted by banks to their customers within a given period, usually classified into short-term, medium-term, and long-term credit depending on the repayment structure and purpose (Pagratis & Staikouras, 2021).

**Non-Performing Loans**

Non-performing loans (NPLs) are among the most important measures of asset quality in the banking industry, claim Wanjiru et al. (2024). As defined by the Basel Committee on Banking Supervision (BCBS) and accepted by the majority of central banks, including the Central Bank of Nigeria (CBN), these are loans and advances on which the borrower has not made scheduled principal or interest payments for a predetermined amount of time, typically 90 days or more. A loan is deemed non-performing under the CBN Prudential Guidelines if principal interest is past due by more than ninety days, or if interest payments totalling ninety days or more have been rolled over, refinanced, or capitalised. NPLs are loans for which "principal and/or interest payments are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalised," according to the IMF.

**Financial Performance**

Financial performance measures the success of a bank in generating profits. The achievements of the company, as shown by its financial statements, display the state of the company during a specific period and are called the company's financial performance (Iwan & Azhar, 2016). The profitability of a bank can be interpreted as its prospects, growth and good development potential. Information about profitability is needed to assess expected changes in economic resources controlled by the bank and to predict the production capacity of the resources in place.

The work of Ystrom (2010) defines performance measurement as a way of ensuring that resources are used most efficiently and effectively. The essence is to provide the organisation with the maximum return on the capital employed in the business. It serves as a general measure of a firm's overall financial health over a specific period. It can be used to compare similar firms within the same industry or to assess industries or sectors in aggregate. Various methods exist to measure financial performance, but all measures should be considered collectively. Managers can control the financial affairs of an organisation by using ratios. Ratios are relationships between two financial balances or calculations that create references for understanding how well an entity is performing financially. They also expand the traditional approach to measuring financial performance, which relies on financial statements (Saleem & Rehman, 2011).

## Literature Review

### Asset Quality and Financial Performance

Wanjiru et al. (2024) investigated the effect of asset quality on the financial performance of Deposit Taking Savings and Credit Cooperatives in Kenya. The research considered a target population of 176 DT SACCOs operating in the country between 2018 and 2022. Inclusion-exclusion criteria were applied to arrive at a sample of 159 DT SACCOs. Secondary quantitative data were collected from the financial reports using data extraction tools. The investigators adopted a positivist philosophy and explanatory research design. Data were analysed using Stata. Both descriptive statistics and inferential analyses were conducted. Descriptive statistics showed a high negative correlation coefficient (-89.21%) between asset quality and the financial performance of DT SACCOs in Kenya. Inferential analysis indicated that asset quality had a negative and significant effect on the financial performance of DT SACCOs in Kenya. This finding suggested that an increase in asset quality would lead to a decrease in financial performance, holding all other predictors constant. However, the autocorrelation, stationarity and the Hausman test were not presented.

Barakat et al. (2024) explored how asset quality management impacts bank profitability, with a particular focus on key indicators such as return on equity (ROE) and return on assets (ROA). The study also looks at specific metrics connected to asset quality. The effect of asset quality management on bank profitability is examined using data from ten banks from 2017 to 2021. To measure the profitability variables, ROE and ROA were considered; in contrast, NPL, the total impairment charges to total operating income, and the total impairment charges to gross total loans (TL) are employed as indicators for asset quality management. The analysis shows a strong positive connection between effective management of a bank's asset quality and its profitability. Future investigations may create advanced quantitative models that predict how choices related to the quality of a bank's assets will affect its profitability. Predictive analytics can help researchers identify optimal standards for non-performing loans, provisions, and other important indicators of the quality of a bank's assets.

Oyedokun and Osho (2023) ascertained the effect of asset quality on the financial performance of Deposit Money Banks (DMBs) in Nigeria. This study employed ordinary least squares regression analysis with emphasis on fixed effect and random effect models. The findings indicate that non-performing loans negatively affect the financial performance of DMBs in Nigeria, although this effect is not significant. Conversely, loan loss provisions have a negative and significant impact on these banks' financial performance. Additionally, asset quality emerged as a crucial determinant of Deposit Money Banks' financial performance. The analysis also confirmed that effective loan management is associated with better financial results for Deposit Money Banks. Nevertheless, the study did not perform post-estimation tests.

Naliaka et al. (2023) studied how adherence to rules regarding the quality of bank assets affects the financial performance of commercial banks listed on the Nairobi Securities Exchange. Losses in these banks were shown by a drop in return on assets (ROA) from 29% to 24% in 2019 and down to 21% in 2020. The number of assets was decreasing, and low deposits exacerbated the problem, leading to the closure of several banks, including Chase Bank and Charterhouse Bank. In fact, Kenya Commercial Bank took over a national bank because its assets were not being used efficiently. A mixed research design was utilised on a sample of 12 commercial banks listed on the Nairobi Securities Exchange in Kenya. This included causal and longitudinal designs. Secondary data covering a period of five years was collected. The analysis indicated that asset quality requirements had a significant level of effect. As a conclusion, it was established that asset quality exerts a considerable influence on the financial performance of banks. Nevertheless, the study was undertaken in Kenya, and the findings may differ from those of similar investigations conducted in Nigeria.

Ofoegbu and Adegbie (2022) looked at how Nigerian deposit money banks performed in relation to the quality of their assets. An ex-post facto research design was the methodology employed. The 16-deposit money banks that were listed on the Nigerian Stock Exchange between 2009 and 2018 make up the study population. Purposive sampling was used, and ten of the top quoted deposit money banks were chosen as the sample size. The results showed that certain quoted deposit money institutions in Nigeria have assets significantly affected by asset quality metrics. The study found that performance components, specifically the return on assets, of deposit money banks in Nigeria are highly impacted by asset quality indicators.

In their study, Oke and Ikpesu (2022) investigated how bank asset quality influences the performance of the Nigerian banking sector. They analysed annual panel data for the period 2010 to 2019 by using the system generalised method of moments (SGMM) technique and data obtained from the audited financial statements of twelve banks listed on the Nigerian Stock Exchange. The twelve banks control approximately 95% of the market share, and the results show that capital adequacy and asset quality positively affect bank performance in Nigeria. The data suggest that banks with higher capital buffers do better, as do those with fewer bad loans, although they are less informative about overall bank performance. Moreover, having enough capital and sounder assets translates into better bank earnings. Continuous improvement in asset quality remains important for management, as non-performing loan ratios are still high. Additional credit policies, culture and corporate governance also seem necessary to manage non-performing loan levels.

Ayiro et al (2022) assess the influence of asset quality on the financial performance of tier IV commercial banks in Kenya. The study was guided by the scientific theory of management, Transaction Cost theory and Contingency theory. This study employed a longitudinal research design. As of 2022, there were 13 tier IV commercial banks in Kenya, according to the Central Bank of Kenya's website. Panel data were analysed using STATA. Pearson's product-moment correlation coefficient yielded r = -0.4306 and a p-value of 0.0000, both of which are significant for asset quality. The regression coefficient was -0.14, with a p-value of 0.013, for asset quality (AQ) and financial performance (ROE) at a 5% level of significance. These results indicate that asset quality had a significant influence on financial performance. Consequently, the descriptive statistics table, including mean, standard deviation, minimum, and maximum, was not presented. However, because the study was conducted in Kenya, the variables might differ from similar studies in Nigeria.

A study conducted by Giulio and colleagues from 2021 examined a group of 63 publicly listed banks from Europe. They aimed to discern the relationship between capital levels and asset quality—specifically examining provisioning and coverage of these banks—and overall risk and performance metrics. Results revealed different outcomes depending on whether risk-based or non-risk-based capital levels were assessed. For instance, the information value of the leverage ratio was only superficially related to the size of the bank. In contrast, the total capital ratio exhibited a positive correlation with stability levels and a negative correlation with insolvency risk. These findings underscore the significance of capital reserves to the broader resilience of the banking sector. Moreover, banks with larger capital buffers tended to record higher performance levels, while those enforcing heavy coverage and provisioning measures were generally linked to lower resilience and poorer performance.

**Theoretical Framework**

The Public Interest Theory of Regulation, which emerged prominently in the 1960s, provides a classical justification for why governments intervene in markets. According to Oyedokun and Osho (2023), the central argument of this theory is that without oversight, private businesses may act in ways that exploit consumers or undermine broader societal welfare. Regulation, therefore, serves as a corrective mechanism, protecting citizens from harmful practices, safeguarding public safety, and ensuring that businesses operate not solely for profit but also for the benefit of society at large.

Pagratis and Staikouras (2021) further argue that markets are prone to failures and imperfections, making it necessary for the state to step in and guide the allocation of resources toward the common good. In this sense, regulatory bodies play a crucial role by issuing binding rules and standards designed to foster efficiency, transparency, and stability. Nonetheless, the theory acknowledges an inherent tension. Regulatory agencies, while established to protect the public interest, may themselves be vulnerable to influence or even capture by the very industries they oversee (Iwan & Azhar, 2016). This concern is echoed by Becker (1983), who suggested that control by a small group of influential individuals may sometimes improve efficiency but may also distort regulations away from their intended goals. Similarly, Adams, Hayes, Weierter, and Boyd (2007) observed that the close interaction between regulators and the regulated can expose agencies to pressure, potentially weakening their ability to act impartially. When such capture occurs, the public good may be compromised, leaving consumers unprotected.

Jamal et al. (2014) note that while the theory emphasises the government's responsibility to uphold the public good, it does not fully explain how regulatory capture occurs or how it can be remedied. Ystrom (2010) also

cautions that conflicts between regulators and industries can sometimes harm the very sectors that regulation seeks to strengthen. Despite these criticisms, the Public Interest Theory remains highly relevant to this study. It provides a valuable lens for understanding why the Central Bank of Nigeria (CBN) enforces prudential guidelines to regulate the conduct of Deposit Money Banks. These guidelines are designed to promote stability, ensure sound lending practices, and protect depositors. By framing asset quality regulations within the public interest perspective, the study underscores that such policies are not merely administrative requirements but essential tools to safeguard financial performance and the long-term stability of Nigeria's banking sector.

## METHODOLOGY

An ex post facto research design was employed to investigate the role of asset quality regulations in shaping the financial performance of Deposit Money Banks in Nigeria. This inquiry analysed quarterly time series data ranging from 2015 to 2025, comprising a total of 41 observations sourced from the statistical bulletin of the Central Bank of Nigeria (CBN). The characteristics of the data were summarised using descriptive statistics, including the mean, standard deviation, skewness, kurtosis, and the Jarque–Bera test. To ascertain the stationarity of the data and determine the presence of long-run equilibrium relationships among the variables, the Augmented Dickey-Fuller (ADF) unit root test was performed.

To investigate how asset quality regulations affect the financial performance of deposit money banks in Nigeria, the Autoregressive Distributed Lag (ARDL) model was employed. Asset quality regulations were represented by total loans and advances as well as non-performing loans, with ROE serving as the dependent variable. All variables were transformed using natural logarithms to standardise the data and allow for elasticity-based interpretation. For model validation, various diagnostic tests were conducted, including the Jarque-Bera test for normality, a test for heteroscedasticity, and the Breusch-Godfrey test for autocorrelation. Finally, the Ramsey RESET test was applied to identify specification errors and assess the stability of the estimated model. The following model was estimated.

$$ROE = f(LTA, NPL) \quad (1)$$

$$ROEt = \alpha_0 + \alpha_1 LTAt + \alpha_2 NPLt + \mu_t \quad (2)$$

Where;

ROE = Return on Equity

LTA = Loans to Assets

NPL = Non-performing Loans

$\alpha_0$ = Intercept or autonomous parameter estimates for asset quality regulations

$\alpha_1$ - $\alpha_4$ Coefficient of asset quality regulations on financial performance

$\mu_t$ = error terms.

Building the equations into an ARDL model, we have:

$$\Delta ROE_t = \mu + \alpha_1 ROE_{t-1} + \alpha_2 LTA_{t-1} + \alpha_3 LPL_{t-1} + \sum_{i=1}^{p-1} \lambda_1 \Delta ROE_{t-i} + \sum_{i=0}^{q-1} \lambda_2 \Delta LTA_{t-1} + \sum_{i=0}^{q-1} \lambda_3 \Delta NPL_{t-1} + \varepsilon_t \quad (3)$$

The hypothesis was tested using a 5% (0.05) significance level. The null hypothesis was rejected if the p-value of the t-statistic was less than 0.05, indicating a statistically significant relationship between the variables; otherwise, it was accepted.

## RESULTS AND DISCUSSIONS

Table 2 presents the descriptive statistics for the variables used in the study: Return on Equity (ROE), Loans-to-Total Assets (LTA), and Non-Performing Loans (NPL), covering 41 quarterly observations between 2015 and 2025.

Table 2: Descriptive Statistics

| | ROE | LTA | NPL |
|---|---|---|---|
| *Mean* | 21.661 | 40.071 | 8.227 |
| *Median* | 17.884 | 37.802 | 6.400 |
| *Maximum* | 50.282 | 48.843 | 16.240 |
| *Minimum* | 8.947 | 32.835 | 3.610 |
| *Std. Dev.* | 10.219 | 4.663 | 4.213 |
| *Skewness* | 1.266 | 0.577 | 0.818 |
| *Kurtosis* | 3.573 | 1.955 | 2.043 |
| *Jarque-Bera* | 11.525 | 4.141 | 6.134 |
| *Probability* | 0.003 | 0.126 | 0.046 |
| *Observations* | 41 | 41 | 41 |

Source: E-Views 13, 2025.

On average, banks recorded a ROE of 21.66%, with values ranging from as low as 8.95% to as high as 50.28%. This widespread, confirmed by the standard deviation of 10.22, suggests that while some banks consistently posted modest profitability, others achieved exceptionally high returns, possibly reflecting differences in management efficiency, asset quality, and market positioning. The skewness value of 1.27 indicates a rightward distribution, meaning that a few banks with unusually high profitability pushed the average upward. The kurtosis of 3.57 points to a slightly leptokurtic distribution, implying that extreme values are more common than in a normal distribution. The Jarque-Bera test statistics ($p = 0.003$) confirm that ROE is not normally distributed, reflecting disparities in profitability across banks.

For LTA, the mean ratio of 40.07% suggests that lending forms a substantial portion of bank assets. The relatively small standard deviation (4.66) indicates that most banks maintain loan portfolios within a close range, though values span between 32.83% and 48.84%. The distribution is mildly skewed to the right (0.58) and slightly flatter than usual, as indicated by the kurtosis of 1.96. Importantly, the Jarque-Bera probability of 0.126 shows that the null hypothesis of normality cannot be rejected, suggesting that LTA is approximately normally distributed. This reflects the consistency of Nigerian banks in maintaining loan portfolios as a significant component of their assets.

NPL averaged 8.23%, with a range from 3.61% to 16.24%. This points to notable variability in asset quality across the sector, as some banks appear to manage credit risks more effectively than others. The standard deviation of 4.21 confirms this dispersion. The positive skewness (0.82) indicates that most banks record relatively low NPL levels, but a few have disproportionately high default rates. The kurtosis value of 2.04 is close to the standard distribution benchmark of 3, suggesting a balanced distribution with some moderate tails.

However, the Jarque-Bera statistics (p = 0.046) indicate mild non-normality, likely due to a small number of banks experiencing unusually high loan defaults.

The descriptive statistics highlight three important insights. First, bank profitability in Nigeria is highly volatile, with a few institutions significantly outperforming others. Second, loans remain the backbone of bank assets, and lending levels are relatively consistent across the industry. Third, asset quality, as reflected by NPL ratios, varies widely, raising concerns about credit risk management practices. These findings provide a strong foundation for the econometric analysis, which investigates whether such variations in lending and asset quality have significant short- or long-term effects on bank profitability.

Table 3: Correlation Matrix

| | ROE | LTA | NPL |
|---|---|---|---|
| *ROE* | 1 | -0.354 | -0.503 |
| *LTA* | -0.354 | 1 | 0.608 |
| *NPL* | -0.503 | 0.608 | 1 |

Source: E-Views 13, 2025.

The correlation matrix revealed a notable relationship among the variables. Return on Equity (ROE) is negatively correlated with both Loans-to-Total-Assets (LTA) (-0.35) and Non-Performing Loans (NPL) (-0.50). This suggests that both higher loan concentration in total assets and higher levels of non-performing loans are associated with lower bank profitability. The stronger negative correlation between ROE and NPL indicates that credit quality plays a more critical role in determining banks' returns than loan volume alone, as rising defaults directly erode profitability.

On the other hand, LTA and NPL show a strong positive correlation (0.61), implying that banks with higher loan exposure in their asset structure also tend to experience higher levels of loan defaults. This indicates that aggressive lending may increase credit risk if not supported by strong risk management. Overall, the correlation matrix suggests that while loan expansion is essential for banking operations, excessive reliance on loans without adequate credit assessment negatively affects asset quality and ultimately reduces financial performance.

Table 3: Summary of Unit Root Test

| Variables | Adj. T-Statistic | Order of Integration |
|---|---|---|
| ROE | 7.782375 (-3.552666) | I(0) |
| LTA | -7.574035 (-3.548208) | I(1) |
| NPL | -14.75661 (-3.565430) | I(1) |

Source: Researcher’s Computation using E-view 13, 2025

The unit root test results show that the variables have mixed orders of integration. Return on Equity (ROE) is stationary at level I(0) because its adjusted t-statistic (7.78) is greater than the critical value (-3.55) in absolute terms, indicating that profitability does not have a unit root and exhibits stability in the short run. In contrast, Loans-to-Total-Assets (LTA) and Non-Performing Loans (NPL) are stationary only after first differencing, I(1), as their test statistics (-7.57 and -14.76) are well below their respective critical values. This indicates that both loan exposure and credit risk are non-stationary at the level but become stable when transformed to first differences.

The implication is that the variables exhibit a mixed level of integration, which justifies the use of an ARDL (Autoregressive Distributed Lag) model for further analysis since it can accommodate both I(0) and I(1) variables without requiring pre-testing for standard integration order. This result also suggests that while profitability tends to fluctuate around a stable mean in the short run, lending structures are more volatile and require differencing to remove persistent trends, reflecting underlying dynamics in banks' loan portfolios.

Table 4: ADRL Bound Test

| Test Statistic | Value | k |
|---|---|---|
| F-statistic | 2.328 | 2 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 3.17 | 4.14 |
| 5% | 3.79 | 4.85 |
| 2.5% | 4.41 | 5.52 |
| 1% | 5.15 | 6.36 |

Source: E-View 13 Output, 2025

The ARDL bounds test result shows that the computed F-statistic (2.33) is below the lower critical bound (I0) at all conventional significance levels (10%, 5%, 2.5%, and 1%). For instance, at the 5% significance level, the lower and upper bounds are 3.79 and 4.85, both of which are higher than the test statistic. Since the F-statistic falls below the lower bound, we fail to reject the null hypothesis of no long-run relationship among the variables (ROE, LTA, and NPL).

This implies that in the Nigerian banking context under study, the variables do not exhibit a stable long-run equilibrium relationship. In other words, changes in LTA and NPL do not significantly explain long-term variations in profitability (ROE). The implication for policy and practice is that the relationship among these variables is more likely to manifest in the short run rather than in a sustainable long-run equilibrium. This suggests that profitability may be influenced more by immediate fluctuations in lending and asset quality than by persistent long-run dynamics.

Table 5: ARDL Estimation

| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
|---|---|---|---|---|
| ROE(-1) | 1.083 | 0.176 | 6.134 | 0.000 |
| ROE(-2) | 0.160 | 0.258 | 0.621 | 0.539 |
| ROE(-3) | -0.446 | 0.184 | -2.420 | 0.022 |
| LTA | 1.091 | 0.593 | 1.838 | 0.077 |
| LTA(-1) | -1.620 | 0.918 | -1.763 | 0.089 |
| LTA(-2) | 0.108 | 0.912 | 0.119 | 0.905 |

| | | | | |
|---|---|---|---|---|
| LTA(-3) | 1.586 | 0.901 | 1.760 | 0.089 |
| LTA(-4) | -1.433 | 0.652 | -2.197 | 0.036 |
| NPL | 0.136 | 0.601 | 0.226 | 0.822 |
| C | 14.269 | 19.590 | 0.728 | 0.472 |
| R-squared | 0.892 | | | |
| Adjusted R-squared | 0.856 | | | |
| Prob(F-statistic) | 0.000 | | | |

Source: E-View 13 Output, 2025

The ARDL regression results show that the model explains a large portion of variations in bank profitability, with an R-squared of 0.89 and an adjusted R-squared of 0.86, indicating strong explanatory power. The F-statistic is highly significant ($p = 0.0000$), confirming the overall validity of the model. The lagged dependent variable coefficients suggest strong persistence in profitability: ROE (-1) is positive and highly significant (1.08, $p < 0.01$), meaning past profitability strongly predicts current profitability. However, ROE (-3) is negative and significant (-0.45, $p < 0.05$), suggesting cyclical corrections over longer lags, where unusually high profitability may adjust downward after several periods.

For the independent variables, LTA shows mixed effects. The contemporaneous coefficient is positive but only marginally significant (1.09, $p \approx 0.08$), suggesting that higher loan concentration may enhance profitability in the short run. However, its lagged values alternate between positive and negative signs, with LTA (-4) being significantly negative (-1.43, $p < 0.05$). This implies that while loan expansion can boost short-term returns, excessive reliance on loans may create risks that erode profitability after several quarters. Non-Performing Loans (NPL), on the other hand, show no significant direct effect on ROE. However, its weakly positive coefficient may reflect that banks offset some credit risk through interest charges or provisioning practices. The Durbin-Watson statistic (2.07) suggests no autocorrelation in residuals, supporting model reliability. Overall, the findings indicate that bank profitability in Nigeria is strongly path-dependent, influenced by short-term lending expansion, but vulnerable to longer-term risks associated with heavy loan exposure.

Table 6: Ramsey RESET Test

| | Value | Df | Probability | |
|---|---|---|---|---|
| t-statistic | 1.192 | 26 | 0.243 | |
| F-statistic | 1.421 | (1, 26) | 0.243 | |
| F-test summary: | | | | |
| | Sum of Sq. | Df | Mean Squares | |
| Test SSR | 21.402 | 1 | 21.402 | |
| Restricted SSR | 412.852 | 27 | 15.290 | |
| Unrestricted SSR | 391.450 | 26 | 15.055 | |

Source: Researchers Computation, 2025 (E-views 13)

The Ramsey RESET test result shows that the t-statistic (1.19, p = 0.2439) and the F-statistic (1.42, p = 0.2439) are both statistically insignificant at the 5% level. Since the p-values are greater than 0.05, we fail to reject the null hypothesis that the model is correctly specified. This means there is no evidence of omitted variable bias or functional form misspecification in the ARDL model.

In practical terms, the result suggests that the chosen model adequately captures the relationship between ROE, LTA, and NPL without the need for additional nonlinear transformations or higher-order terms. Combined with the strong explanatory power ($R^2 = 0.89$) and absence of autocorrelation (Durbin-Watson ≈ 2), the RESET test strengthens the reliability of the model, implying that the estimates can be trusted for both interpretation and policy recommendations.

Table 7: Heteroskedasticity Test

| | | | |
|---|---|---|---|
| F-statistic | 0.737 | Prob. F(9,27) | 0.672 |
| Obs*R-squared | 7.297 | Prob. Chi-Square(9) | 0.606 |
| Scaled explained SS | 3.508 | Prob. Chi-Square(9) | 0.940 |

Source: Researchers Computation, 2025 (E-views 13)

The Breusch-Pagan-Godfrey heteroskedasticity test results show that all test statistics are insignificant, with p-values well above 0.05 (e.g., Prob. F = 0.6721, Prob. Chi-Square = 0.6061, and Prob. Scaled SS = 0.9407). Since we fail to reject the null hypothesis of homoskedasticity, there is no evidence of heteroskedasticity in the residuals of the ARDL model.

This implies that the error variances are constant across observations, which supports the reliability of the estimated coefficients. In other words, the model does not suffer from heteroskedasticity problems, so standard errors and significance tests for the coefficients can be considered valid. This further strengthens the robustness of the regression results for policy and interpretation purposes.

## DISCUSSION OF FINDINGS

The ARDL regression results provide important insights into how asset quality regulations shape the performance of Nigerian banks in practice. For Hypothesis 1 (loan-to-asset ratios significantly affect financial performance), the findings show that while higher loan-to-asset ratios initially improve profitability, this effect fades over time. The lagged coefficients reveal that prolonged reliance on loan growth eventually erodes returns, mainly due to rising credit risk. This pattern mirrors real-world experiences in Nigeria, particularly during the post-2016 recession, when banks aggressively expanded credit to sustain earnings amid falling oil revenues, only to face surging non-performing loans as the economy contracted.

For Hypothesis 2 (non-performing loans significantly affect financial performance), the results do not show a statistically significant direct effect on return on equity. This suggests that banks can cushion the immediate impact of loan defaults, often through provisioning, repricing of credit, or income diversification. During the COVID-19 pandemic, for instance, many Nigerian banks absorbed the potential spike in NPLs by restructuring large portions of their loan books in line with CBN forbearance policies. While this helped preserve short-term profitability, it also masked underlying vulnerabilities that resurfaced once regulatory forbearance was phased out.

Diagnostic checks (RESET, Breusch-Pagan, and Durbin-Watson) confirm that the model is well specified, free of heteroskedasticity, and robust for inference. This lends confidence to the interpretation of results. The evidence suggests that Nigerian banks' profitability is driven more by short-term lending strategies than by sustainable improvements in asset quality. This observation is consistent with recent regulatory interventions. The Central Bank of Nigeria's tightening of prudential requirements in recent years, including stricter loan concentration limits and closer monitoring of credit exposures, reflects a recognition of these risks. Left

unchecked, the strategy of chasing short-term gains through loan expansion can expose banks to systemic vulnerabilities, particularly during economic downturns.

These findings are also in line with the broader literature. Pagratis and Staikouras (2021) and Oyedokun and Osho (2023) argue that while loan expansion can temporarily boost performance, it undermines long-term stability. Wanjiru et al. (2024) and Barakat et al. (2024) similarly highlight how weak asset quality depresses profitability, while Naliaka et al. (2023) and Ofoegbu and Adegbie (2022) underscore the importance of regulatory compliance in sustaining bank performance.

Conclusively, the results highlight the delicate balance Nigerian banks must strike. Short-term gains from aggressive lending can quickly be reversed in the face of macroeconomic shocks, as seen during the 2016 recession and the COVID-19 crisis. Regulatory tightening by the CBN is therefore not just administrative—it is a necessary safeguard to ensure that profitability is achieved in ways that strengthen, rather than weaken, the long-run stability of the banking system.

## CONCLUSION AND POLICY RECOMMENDATIONS

### Conclusion

This study examined the effect of asset quality regulations on the financial performance of Deposit Money Banks in Nigeria between 2015 and 2025 using the ARDL framework. The results show that while loan-to-asset ratios provide a short-term boost to profitability, their lagged adverse effects highlight the risks of over-reliance on loan growth. This dynamic reflects Nigeria's banking experience following the 2016 recession, when aggressive credit expansion initially supported earnings but later led to rising non-performing loans as economic conditions deteriorated. Interestingly, non-performing loans did not exert a statistically significant direct effect on return on equity, suggesting that banks were able to cushion the impact of defaults temporarily. This finding is consistent with the COVID-19 period, when CBN's regulatory forbearance allowed banks to restructure loan portfolios and preserve profitability in the short run. However, such measures only defer underlying risks, which resurface once temporary buffers are withdrawn. These findings emphasise that while loan expansion can sustain earnings in the short run, it is sustainable asset quality, not credit growth alone, that determines long-run financial stability.

### Policy Recommendations

The findings carry clear policy implications for Nigeria’s banking sector. The evidence that loan expansion produces temporary profitability but erodes long-run stability reinforces the importance of CBN’s prudential oversight. Regulators should continue to tighten concentration limits and stress-test loan portfolios, especially in sectors vulnerable to macroeconomic shocks such as oil and gas. Lessons from the post-2016 recession show that unchecked loan growth quickly translates into rising defaults, underscoring the need for balance between credit expansion and credit quality.

The results also suggest that while banks can absorb short-term shocks through provisioning and restructuring, as seen during the COVID-19 crisis, such strategies are not permanent solutions. Building on this experience, the CBN should encourage banks to institutionalise more proactive loan restructuring frameworks, adopt international best practices for managing distressed assets, and deploy advanced risk assessment tools such as data-driven credit scoring systems. This will ensure that profitability is not just protected in crisis periods but sustained over the long run.

Finally, recent CBN tightening measures should be complemented by enhanced transparency in loan reporting and greater investor disclosure. Stronger monitoring and disclosure requirements will help prevent regulatory forbearance from masking systemic risks and align Nigeria’s banking practices more closely with global standards. By combining lessons from past crises with forward-looking regulation, policymakers can safeguard profitability while ensuring that Nigeria’s banking sector remains resilient in the face of future shocks.

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