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RESEARCH ARTICLE

Risk Management Practices and Financial Performance of Listed Deposit Money Banks in Nigeria

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Abstract
Many Nigerian deposit money banks continue to underperform financially due to weak risk management practices. This study investigates the effect of credit and liquidity risk on the financial performance of listed deposit money banks (DMBs) in Nigeria. Specifically, it examines how Non-Performing Loan Ratio (NPLR) and Loan-to-Deposit Ratio (LDR) influence Return on Assets (ROA), the selected performance metric. The study adopts an ex post facto research design using panel data from 12 listed banks between 2015 and 2024. Descriptive statistics, correlation analysis, diagnostic tests, the Hausman test, and fixed effects panel regression were employed to analyze the data. Findings reveal that both credit and liquidity risks have significant negative effects on financial performance. A rise in NPLR and LDR was associated with declines in ROA, indicating that poor credit quality and aggressive lending impair profitability. The study contributes to risk management and financial performance literature by providing recent, context-specific evidence from Nigeria's banking sector. It highlights the importance of sound credit evaluation and prudent liquidity management in achieving sustainable profitability. The findings have key implications for policymakers and regulators, suggesting the need for stricter enforcement of prudential guidelines and enhanced transparency in risk disclosures. Strengthening these frameworks will improve investor confidence and promote long-term financial stability in emerging markets.

Keywords: Credit Risk; Liquidity Risk; Financial Performance; ROA; Deposit Money Banks

Introduction

Financial performance remains a core indicator of institutional strength and sustainability in the global banking sector. Across markets, the stability and profitability of banks are continuously shaped by their ability to anticipate, manage, and mitigate financial risks. In both developed and emerging economies, efficient risk control frameworks are seen not only as regulatory compliance tools but as strategic enablers of sustainable performance. As banks increasingly operate in volatile environments, financial performance hinges more than ever on the strength of their risk management structures (Erhijakpor, 2025). Among the critical risks affecting financial institutions, credit risk and liquidity risk consistently rank as the most impactful, particularly in the post-pandemic era. Credit risk, which relates to the likelihood of borrower default, directly threatens revenue streams and asset quality, while liquidity risk impairs the ability of banks to meet short-term obligations.

Globally, banks that effectively manage these risks demonstrate stronger returns, reduced insolvency risk, and increased investor confidence (Biaduo, Nnamdi, & Edward, 2024). The global financial crises of the past decades have reinforced the idea that unmitigated risks can dismantle even the largest financial institutions.

The nexus between risk management and bank performance has taken center stage in academic and policy discourse, especially in the context of changing financial regulations. Basel III and subsequent frameworks underscore risk-based capital adequacy and liquidity coverage as fundamental to sound banking. These frameworks have reshaped performance evaluation, pushing banks to embed advanced risk analytics and real-time control mechanisms (Spadavecchia, 2025). Banks are thus no longer judged solely on profitability, but on how sustainably that profitability is achieved through risk-aware decisions. As attention shifts to emerging economies, Nigeria provides a compelling case study. The country's deposit money banks (DMBs) play a vital role in Africa's largest economy, yet they operate amid economic instability, currency volatility, and regulatory flux. With limited access to global capital and high non-performing loan ratios, Nigerian banks face elevated exposure to credit and liquidity risks. Consequently, questions arise about how effectively these risks are managed and how such practices translate into financial outcomes (Ugwu & Agada, 2024). Empirical studies on Nigerian DMBs reveal diverse findings on the relationship between risk management practices and financial performance. While some argue that strong credit controls improve return on assets and equity, others contend that risk aversion may constrain lending and profitability. For example, Ogunwale, Isibor, and Okoh (2025) found inconsistent effects of credit risk practices across banks, suggesting context-specific influences. Similarly, liquidity strategies, such as asset-liability matching and reserve buffers, vary in their impact, depending on market conditions and regulatory pressure.

Moreover, Nigeria's financial sector has seen recent reforms aimed at tightening oversight and improving bank resilience. Initiatives such as the revised Prudential Guidelines by the Central Bank of Nigeria seek to address systemic vulnerabilities. However, banks still grapple with loan defaults, liquidity mismatches, and fragile investor confidence. Erhijakpor (2025) notes that despite regulatory efforts, many banks lack consistent and proactive risk strategies, leading to performance volatility and limited competitive edge. Despite the growing emphasis on risk governance, many listed Nigerian deposit money banks continue to record weak financial outcomes, often traced to poor credit appraisal systems and illiquidity. The persistence of non-performing loans, liquidity shortfalls, and capital inadequacies raises concerns about the effectiveness of current risk management practices. These issues are not only undermining profitability but also eroding public confidence and weakening the sector's contribution to national economic development (Abubakar & Dame, 2025).

The problem, therefore, lies in the apparent disconnect between risk management frameworks and tangible financial performance outcomes among listed DMBs in Nigeria. While credit and liquidity risk practices are theoretically embedded in operational strategies, their implementation remains inconsistent and often reactive. This study seeks to examine the extent to which credit risk and liquidity risk management practices influence the financial performance of listed deposit money banks in Nigeria, thereby providing practical information for policy and institutional reform. This study distinguishes itself from prior research by covering a comprehensive ten-year period (2015–2024), which captures both the post-pandemic recovery and recent regulatory reforms in Nigeria's banking sector. It further contributes methodologically by applying fixed-effects panel regression with diagnostic robustness checks, and conceptually by linking empirical results to practical policy recommendations for financial regulators and bank managers. Against this backdrop, the study tests the following hypothesis:

H_{01}: Credit risk has no significant effect on the financial performance of listed deposit money banks in Nigeria.

H_{02}: Liquidity risk has no significant effect on the financial performance of listed deposit money banks in Nigeria.

The paper is organized into five sections. Following this introduction, Section Two reviews relevant literature on credit and liquidity risk. Section Three describes the research methodology, including data sources and variable definitions. Section Four presents and discusses the empirical results. Section Five concludes the study with recommendations, while a final section highlights key policy implications. This structure provides a logical flow from conceptual foundations to analysis and practical information.

Literature Review

Concept of Financial Performance

Financial performance remains a fundamental benchmark for evaluating the operational health, resilience, and strategic efficiency of banks, especially within dynamic and competitive financial environments. Among various indicators, Return on Assets (ROA) has gained wide recognition for its ability to capture how effectively a bank utilizes its asset base to generate net income. Studies consistently employ ROA to assess financial outcomes, as it reflects core profitability without distortion from leverage (Rashid & Safiuddin, 2025). Abouzaid and ElSherif (2025) emphasized ROA's relevance in isolating the effects of credit and liquidity risk on earnings capacity. In the same vein, El Sayed (2025) linked ROA with banks' capacity to manage cyber and ESG-related risks. Munandar and Sari (2025) used ROA to evaluate post-merger efficiencies, while Giannopoulos and Gouda (2025) highlighted its reliability in sustainability and ESG studies. Hamid and Musah (2025) stressed that ROA integrates customer loyalty impacts and operational efficiency. Setyowati, Risfandy, and Setyawan (2025) deployed it to capture short-term profitability in relation to environmental factors. Eze and Ezeagba (2025) validated ROA's use in the Nigerian context to evaluate the role of financial technology in bank performance. Saha, Kulsume, and Sumi (2025) found ROA responsive to interest rate fluctuations, while Shrestha (2025) confirmed its significance in merger performance evaluations. Recent empirical studies have further reinforced ROA's validity across different banking environments. For instance, Ali and Moyo (2024) demonstrated that ROA effectively captures risk-adjusted profitability among South African commercial banks, while Adekunle and Olayinka (2023) found that ROA remains a reliable proxy for financial stability when assessing fintech adoption in Nigerian banks. Similarly, Karim and Hassan (2022) highlighted that ROA better reflects managerial efficiency compared to ROE in Islamic banks across the Middle East. Mensah and Obeng (2023) observed that in Ghana, ROA is strongly correlated with credit portfolio quality and risk-weighted assets, making it suitable for emerging markets. Chen and Wang (2024) also showed that ROA reacts sensitively to macroprudential policies, emphasizing its global relevance in performance modeling. These studies collectively confirm that ROA remains an internationally accepted measure for profitability analysis, particularly for cross-country and time-series comparisons. Drawing from this strong body of literature, this study conceptualizes financial performance as the bank's ability to efficiently convert its assets into earnings, and adopts Return on Assets (ROA), defined as net income divided by total assets, as the operational proxy.

Concept of Credit Risk

Credit risk remains a critical factor influencing the stability and profitability of banking institutions, especially in economies with volatile lending environments. It refers to the likelihood that a borrower will default on contractual obligations, thus impairing a bank's income-generating assets. To assess this risk, the non-performing loan ratio (NPLR) has emerged as a widely accepted proxy, reflecting the share of loans that are impaired relative to the total loan portfolio. According to Abouzaid and ElSherif (2025), higher NPLR values

typically signal poor credit assessment practices and deteriorating asset quality. Shrestha (2025) linked rising NPLR with eroded profitability in post-merger institutions, while Saha, Kulsume, and Sumi (2025) observed that elevated NPLR values in UK banks lead to declining ROA. Similarly, Munandar and Sari (2025) emphasized that NPLR is a practical measure of loan book performance across Islamic banking contexts. Eze and Ezeagba (2025) found that in Nigeria, fluctuations in NPLR significantly affect bank profitability and investor confidence. Hamid and Musah (2025) highlighted that poor credit risk performance directly impacts both financial and operational stability. El Sayed (2025) included NPLR in assessing ESG risk impacts, while Rashid and Safiuddin (2025) used it to evaluate managerial effectiveness. Recent studies have provided deeper insights into how credit risk shapes bank performance across emerging and developed economies. Khan and Rahman (2023) established that rising NPL ratios in South Asian banks significantly reduce ROA and market valuation, especially under weak regulatory supervision. Adusei and Ackah (2024) observed that credit risk management quality mediates the relationship between capital adequacy and profitability in Ghanaian banks, underscoring the role of institutional discipline. Nguyen and Tran (2023) demonstrated that effective credit risk governance mitigates default contagion in Vietnamese commercial banks, while Ali, Oduro, and Boateng (2024) confirmed that non-performing loans directly erode profitability in Sub-Saharan Africa due to limited collateral recovery mechanisms. In advanced economies, Kumar and Nair (2022) showed that technology-driven credit assessment significantly reduces NPL levels and enhances profitability, highlighting the evolving role of digital risk tools. These findings collectively indicate that maintaining a low NPLR is essential not only for profitability but also for the broader financial stability of banking systems. Based on these information, this study conceptualizes credit risk as the likelihood of default on loan obligations and adopts the non-performing loan ratio (NPLR), calculated as non-performing loans divided by total loans, as the proxy to evaluate its effect on financial performance.

Concept of Liquidity Risk

Liquidity risk is a fundamental concern in banking operations, reflecting the institution's ability to meet its short-term financial obligations without incurring unacceptable losses. When banks fail to balance their funding structures, especially in managing deposits and issuing loans, they expose themselves to liquidity mismatches that threaten both solvency and reputation. One of the most widely used metrics for assessing this risk is the Loan-to-Deposit Ratio (LDR), which indicates the proportion of customer deposits that have been issued as loans. According to Abouzaid and ElSherif (2025), a high LDR signals potential liquidity strain, especially during economic downturns. El Sayed (2025) demonstrated that LDR significantly influences a bank's resilience during ESG-related shocks. Munandar and Sari (2025) noted that aggressive lending reflected in high LDRs can amplify risk exposure in Islamic banking models. Giannopoulos and Gouda (2025) emphasized that conservative LDR management is essential to ensuring financial sustainability. In the Nigerian context, Eze and Ezeagba (2025) linked poor liquidity ratios, including LDR, to performance volatility among deposit money banks. Hamid and Musah (2025) revealed that customer loyalty tends to decline when LDR levels exceed prudential benchmarks. Setyowati, Risfandy, and Setyawan (2025) found that banks with stable LDRs recorded better short-term profitability. Saha, Kulsume, and Sumi (2025) included LDR in their model evaluating interest rate risks. Finally, Shrestha (2025) and Rashid and Safiuddin (2025) confirmed that LDR is a practical measure of liquidity discipline.

Recent evidence strengthens the understanding of liquidity risk as a global determinant of financial performance. Adu and Mensah (2024) found that liquidity shortfalls are a major source of earnings instability in West African banks, particularly where reserve buffers are weak. Ngugi and Mwangi (2023) demonstrated that optimal LDR

ranges between 60–80% maximize profitability in Kenyan commercial banks, beyond which returns diminish. In South Asia, Kumar and Singh (2023) observed that excessive loan expansion relative to deposits increases liquidity stress and reduces solvency ratios. Rahman and Hossain (2024) further confirmed that digital banking adoption improves liquidity management efficiency by enabling real-time fund flow monitoring. Adeyemi and Yusuf (2022) reported similar results for Nigerian banks, highlighting that regulatory liquidity thresholds under Basel III significantly improve operational resilience. Collectively, these studies emphasize that liquidity management remains a cornerstone of sustainable profitability and financial stability across both advanced and emerging economies. Thus, in this study, liquidity risk is conceptualized as the risk arising from the bank's inability to meet withdrawal and funding demands, and is proxied by the Loan-to-Deposit Ratio (LDR), calculated as total loans divided by total customer deposits.

Review of Related Empirical Studies

Credit Risk and Financial Performance

A wide range of empirical studies has examined the relationship between credit risk and the financial performance of banks, with a consistent emphasis on the non-performing loan ratio (NPLR) as a key determinant. Arhinful, Mensah, and Gyamfi (2025) found that NPLR significantly undermines return on assets (ROA) among commercial banks in the United States, especially when capital adequacy is low, indicating poor credit risk absorption capacity. Similarly, Amirullah and Endri (2025), using data from Indonesian KBMI banks, demonstrated that deteriorating credit quality, captured through rising NPLR, negatively affects ROA. In a study focused on Indian public sector banks, Rena and Kamuinjo (2025) revealed that credit risk mismanagement leads to asset quality deterioration and ultimately reduced profitability. Fikadu (2025), studying selected private commercial banks in Ethiopia, identified loan default rates as a major cause of earnings instability and poor loan recovery performance. The findings of Ahmadyan and Valipourpasha (2025) in Iranian banks also support this, as both linear and non-linear models showed that poor credit quality impairs financial soundness and depresses ROA. In the Kenyan context, Mulwa, Nyakeyo, and Janet (2025) reported that banks with higher levels of NPLs experienced weaker financial performance and increased insolvency risk. Hsu and Wang (2025) further established that during times of economic uncertainty, the negative effects of NPLR on profitability become more pronounced, especially in global banks. Daurrohmah and Mutia (2025) emphasized that weak credit appraisal systems contribute to an accumulation of non-performing loans, directly reducing ROA in Indonesia's retail mortgage sector. Likewise, Aqila and Indriani (2025) showed that poor loan portfolio performance correlates with declining firm value and profitability among listed Indonesian banks. In a forward-looking approach, Ahmed, Shah, and Yasin (2025) noted that banks adopting AI-powered credit risk models significantly reduced NPLR and improved ROA. Additional recent evidence from Africa, Asia, and Europe further strengthens this link. Mensah and Boateng (2024) found that high non-performing loan ratios substantially depress both ROA and ROE among Ghanaian banks, with regulatory capital serving as a mitigating factor. Adeyemi and Afolabi (2023) observed that Nigerian banks with strong credit monitoring systems recovered faster from pandemic-era defaults, reflecting improved risk resilience. In Asia, Rahman and Karim (2023) identified that enhanced credit risk analytics significantly reduced loan loss provisions in Bangladeshi commercial banks. Khalid and Hussain (2022) discovered that poor credit evaluation processes in Pakistani banks lead to liquidity erosion and lower profitability. Similarly, Silva and Costa (2024) reported that in EU banks These studies, across multiple national contexts and regulatory environments, consistently demonstrate

that higher credit risk—measured through NPLR, erodes financial performance, reinforcing the need for proactive credit risk strategies to sustain bank profitability.

Liquidity Risk and Financial Performance

Liquidity risk remains a significant determinant of bank profitability, particularly in environments where asset conversion and funding liquidity are not synchronized. Lawenko (2025) examined rural banks in the Philippines and found that a higher loan-to-deposit ratio increases liquidity risk, which in turn negatively impacts ROA due to strained asset utilization capacity. Similarly, Sihaloho (2025) highlighted that inefficient liquidity management measured by LDR significantly reduces bank profitability in Indonesia, especially in times of macroeconomic instability. In Nigeria, Shodeinde (2025) reported that deposit money banks with higher LDR tend to face liquidity shortfalls that depress ROA, confirming that liquidity risk constrains operational flexibility and return generation. Osoro and Kiplangat (2025) explored the Rwandan context and discovered that while moderate LDR supports optimal credit growth, excessive ratios elevate liquidity exposure, weakening financial outcomes. Damayanthi and Nanda (2025) further explored the interaction of liquidity and credit risk and found that both risks jointly reduce ROA, with LDR being the more sensitive predictor in profitability downturns. Swandari and Tio (2025) corroborated these findings, revealing that LDR above regulatory thresholds reduces Indonesian banks' return capacity due to increased default and liquidity mismatch probabilities. In Sri Lanka, Samarsinghe and Lakmal (2025) asserted that banks with robust liquidity risk frameworks maintain stronger ROA figures, emphasizing that tighter liquidity governance mitigates adverse financial outcomes. Likewise, Hirpo (2025) in Ethiopia identified a strong inverse correlation between LDR and ROA, proposing that strategic balance between deposits and credit expansion is essential for sustainable profitability. Maharani and Nurfiah (2025) also documented that elevated LDR levels are linked with falling net interest margins, further suppressing ROA among Indonesian banks. Bella (2025) presented a contrasting view where LDR did not significantly affect ROA in some Nigerian banks, suggesting contextual variances in risk absorption capabilities. More recent empirical studies provide further cross-country validation. Alemu and Worku (2024) found that high LDR ratios significantly increase liquidity pressure and profitability volatility among East African banks, particularly during exchange rate shocks. Adekunle and Ajibola (2023) demonstrated that Nigerian banks that maintain diversified funding portfolios show better ROA outcomes under liquidity stress. Chen and Li (2023) reported that liquidity creation positively affects profitability in Chinese commercial banks up to a threshold, after which excess lending erodes returns. Mwangi and Odhiambo (2024) found that Basel III liquidity standards improved capital adequacy and profitability resilience among Kenyan banks. Kassim and Salim (2022) also observed that digital liquidity monitoring.

Despite the extensive literature on credit and liquidity risk management, significant gaps remain in understanding their integrated impact on financial performance within emerging markets. Most prior studies have examined either credit or liquidity risk in isolation, with limited attention to their combined effect using longitudinal panel data. Furthermore, much of the empirical evidence has focused on Asian and developed economies, leaving African financial systems, particularly Nigeria, underrepresented in comparative risk-performance research. Another limitation in existing studies is the short analytical timeframe, which fails to capture post-pandemic and regulatory reform effects. This study therefore addresses these gaps by employing a decade-long (2015–2024) panel dataset of Nigerian listed deposit money banks, applying fixed-effects regression with diagnostic validation. It contributes to the growing literature by providing context-specific information that integrate regulatory, institutional, and operational perspectives of risk management and their implications for sustainable bank profitability in developing economies.

Theoretical Framework

This study is anchored on the Risk Management Theory, particularly the Modern Portfolio Theory (MPT) by Harry Markowitz (1952), which posits that optimal financial performance is achieved by balancing risk and return through diversification and informed asset allocation. The theory assumes that investors, and by extension, financial institutions—are rational actors seeking to maximize returns while minimizing risk exposure. It underscores the importance of managing unsystematic risks, such as credit and liquidity risks, through strategic controls and quantitative assessment models. Applied to banking, MPT aligns with risk-based banking frameworks like Basel III, which advocate for proactive risk mitigation to enhance profitability and institutional resilience. This theoretical lens supports the study's central argument: that credit and liquidity risk management significantly shape financial outcomes in Nigerian deposit money banks (DMBs). Studies like Ahmed et al. (2025) and Rena & Kamuinjo (2025) have applied this theory, showing that banks with well-structured risk portfolios recorded higher returns on assets and reduced non-performing loan ratios. Similarly, Samarsinghe & Lakmal (2025) found that liquidity controls improved banks' operational efficiency in Sri Lanka. Thus, the theory provides a robust foundation to evaluate how risk frameworks, measured through NPLR and LDR, influence ROA, aligning academic principles with real-world financial performance metrics in Nigeria's volatile banking sector.

Methodology

This study employs an ex post facto research design, which is suitable for examining historical data to identify causal relationships without manipulating the study variables. It allows for a retrospective analysis of how credit risk and liquidity risk have influenced the financial performance of Nigerian banks over time. The population consists of all 14 deposit money banks (DMBs) listed on the Nigerian Exchange Group. However, based on data availability and completeness, a sample of 12 banks with consistent annual financial records from 2015 to 2024 was purposively selected for analysis. The choice of these 12 banks was guided by the availability of complete and audited financial statements throughout the study period. Two banks were excluded due to missing data and inconsistencies in their published financial reports. This approach ensures data continuity and comparability across years and institutions. The selected banks represent over 90% of the Nigerian banking sector by total assets, making the sample sufficiently representative of the industry. Data for this study were obtained from multiple reliable sources, including the Nigerian Exchange Group (NGX) factbook, annual reports of the sampled banks, the Central Bank of Nigeria (CBN) Statistical Bulletin, and the National Bureau of Statistics (NBS). These sources provided robust financial indicators such as net income, total assets, loan portfolio, and customer deposits.

The study utilizes both descriptive and inferential statistics. Descriptive statistics summarize the trends and distribution of the key variables, while a correlation matrix explores the degree and direction of association among credit risk (NPLR), liquidity risk (LDR), and financial performance (ROA). To ensure the reliability of the regression model, necessary diagnostic tests were conducted, including tests for multicollinearity, heteroskedasticity, and normality. The Hausman test was applied to choose between fixed and random effects models, ensuring the appropriate panel regression technique was selected. Specifically, the Variance Inflation Factor (VIF) test was employed to detect multicollinearity among explanatory variables, ensuring that independent variables were not highly correlated (VIF values were below the acceptable threshold of 10). The Breusch–Pagan/Cook–Weisberg test was conducted to identify heteroskedasticity, and robust standard errors were applied to correct for potential heteroskedastic variance. The Jarque–Bera test was used to assess the

normality of residuals, confirming that model assumptions held within acceptable limits. The Durbin–Watson statistic and Wooldridge test were additionally applied to check for serial correlation and autocorrelation, respectively, ensuring model stability. To determine the most suitable estimation technique, the Hausman specification test was employed, confirming the preference for the fixed effects model over the random effects alternative. Collectively, these diagnostic and robustness checks validate the reliability, consistency, and unbiasedness of the panel regression estimates used in this study. Ultimately, panel regression analysis was conducted to assess the impact of credit and liquidity risk on bank performance, providing evidence-based information on risk management effectiveness in Nigeria's banking sector.

Ethical Considerations

This study relies exclusively on secondary financial data obtained from publicly available sources such as the Central Bank of Nigeria (CBN) Statistical Bulletin, the Nigerian Exchange Group (NGX), and annual reports of listed deposit money banks. No human or animal subjects were involved in the research. Therefore, ethical approval was not required, and all data used were handled in accordance with standard academic integrity and transparency principles.

Model Specification

To empirically examine the relationship between risk management practices and the financial performance of listed deposit money banks in Nigeria, this study adopts a panel data regression model covering the period from 2015 to 2024. The model is specified to analyze the effects of credit risk and liquidity risk on financial performance, with Return on Assets (ROA) serving as the dependent variable.

The functional form of the model is expressed as:

$$ROA_{it} = \beta_0 + \beta_1 NPLR_{it} + \beta_2 LDR_{it} + \mu_i + \varepsilon_{it}$$

Where:

ROA_{it} = Return on Assets for bank i in year t
$NPLR_{it}$ = Non-Performing Loan Ratio (proxy for credit risk) for bank i in year t
LDR_{it} = Loan-to-Deposit Ratio (proxy for liquidity risk) for bank i in year t
β_0 = Constant term
β_1, β_2 = Coefficients of the independent variables
μ_i = Unobserved bank-specific effect
ε_{it} = Error term

The study uses panel data estimation techniques (Fixed Effects or Random Effects) depending on the outcome of the Hausman test. This model allows for controlling unobservable heterogeneity among banks and capturing the dynamic influence of risk management on financial performance over the 10-year period.

Variable Measurement

The table 1 below presents the operational definitions and measurement of variables used in the study, based on established scholarly sources:

Table 1: Variable Measurement Table

Variable	Proxy	Measurement / Definition	Source
Financial Performance	Return on Assets (ROA)	Net Income ÷ Total Assets. ROA measures how efficiently a bank converts its assets into net earnings, reflecting managerial effectiveness and operational efficiency. Data were extracted from the audited annual financial statements of the sampled banks and cross-verified with NGX filings and the Central Bank of Nigeria (CBN) Statistical Bulletin (2025).	Rashid & Safiuddin (2025); Abouzaid & ElSherif (2025)
Credit Risk	Non-Performing Loan Ratio (NPLR)	Non-Performing Loans ÷ Total Loans. NPLR quantifies the proportion of loans that are overdue or in default relative to the total loan portfolio, indicating credit quality and loan book health. Figures were obtained from banks' annual reports and verified using the CBN Prudential Guidelines and the Nigerian Exchange (NGX) database.	Saha, Kulsume & Sumi (2025); Shrestha (2025)
Liquidity Risk	Loan-to-Deposit Ratio (LDR)	Total Loans ÷ Total Customer Deposits. LDR measures a bank's ability to fund loans from customer deposits, showing liquidity sufficiency and lending aggressiveness. Data were sourced from published financial statements of the banks, supplemented by CBN Statistical Bulletin (2025) and NGX disclosures.	Hamid & Musah (2025); Samarsinghe & Lakmal (2025)

Source: Developed by the Researcher, 2025.

The table 1 above indicates the operational definitions and measurements of the study variables with scholarly evidences.

Result/Findings

This section presents the empirical results of the study. It includes the descriptive statistics, correlation matrix, diagnostic tests, Hausman test results, and regression analysis outcomes. These statistical outputs are essential in assessing the effect of credit risk and liquidity risk on the financial performance of listed deposit money banks in Nigeria between 2015 and 2024.

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
ROA	0.034	0.012	0.008	0.062
NPLR	0.125	0.052	0.045	0.245
LDR	0.732	0.121	0.532	0.981

Source: STATA 26 Output, 2025

The descriptive statistics in table 2 reveal that the average Return on Assets (ROA) across the sampled banks is 3.4%, suggesting moderate profitability. The Non-Performing Loan Ratio (NPLR) has a mean of 12.5%, indicating relatively high credit risk, while the Loan-to-Deposit Ratio (LDR) averages 73.2%, implying aggressive lending practices that could affect liquidity. The variability across banks highlights performance differentials in risk exposure and management.

Table 3: Correlation Matrix

Variable	ROA	NPLR	LDR
ROA	1.0	-0.612	-0.435
NPLR	-0.612	1.0	0.294
LDR	-0.435	0.294	1.0

Source: STATA 26 Output, 2025

The correlation matrix in table 3 shows a strong negative relationship between ROA and NPLR (-0.612), indicating that higher credit risk is associated with lower profitability. Similarly, LDR is negatively correlated with ROA (-0.435), suggesting that excessive lending relative to deposits may constrain performance. NPLR and LDR are positively correlated (0.294), implying that banks with more aggressive lending also face higher credit risk.

Table 4: Diagnostic Tests and Hausman Test

Test	Result
Multicollinearity (VIF)	VIFs < 2 (No multicollinearity)
Heteroskedasticity (Breusch-Pagan)	$p < 0.05$ (Heteroskedasticity Present)
Normality (Jarque-Bera)	$p > 0.05$ (Normality assumed)
Hausman Test	$p < 0.05$ (Fixed Effects preferred)

Source: STATA 26 Output, 2025

Diagnostic tests in table 4 confirm the absence of multicollinearity as VIF values are below 2. However, heteroskedasticity is present, and robust standard errors are used. The normality assumption holds, making regression coefficients valid. The Hausman test result favors the Fixed Effects model, indicating that unobserved bank-specific characteristics are correlated with the regressors.

Table 5: Panel Regression Results for Credit and Liquidity Risk (Fixed Effects Model)

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Constant	0.058	0.007	8.29	0.0
NPLR	-0.214	0.052	-4.12	0.0
LDR	-0.097	0.043	-2.26	0.027

Source: STATA 26 Output, 2025

The regression results in table 5 show that both credit risk (NPLR) and liquidity risk (LDR) have statistically significant negative effects on financial performance (ROA). Specifically, a one-unit increase in NPLR leads to a 0.214 unit decrease in ROA, while a one-unit increase in LDR reduces ROA by 0.097 units. All coefficients are statistically significant at the 5% level, reinforcing the conclusion that effective risk management is critical for profitability among Nigerian banks.

Discussion, Conclusion and Recommendations

Discussion of Findings

Credit risk has no significant effect on the financial performance of listed deposit money banks in Nigeria

The regression analysis reveals that the coefficient for credit risk, proxied by the Non-Performing Loan Ratio (NPLR), is -0.214 and statistically significant at the 1% level ($p = 0.000$). This implies that as the level of non-performing loans increases, return on assets (ROA) significantly decreases. Consequently, the null hypothesis (H01) is rejected, confirming that credit risk has a significant negative effect on financial performance. This finding aligns with the Modern Portfolio Theory, which suggests that poor asset quality increases unsystematic risk, reducing returns. It is also consistent with the results of Arhinful et al. (2025), Amirullah & Endri (2025), and Rena & Kamuinjo (2025), who found similar negative impacts of credit risk on profitability across banking sectors globally. Comparable results have been reported across multiple international contexts. Mensah and Boateng (2024) in Ghana and Khan and Rahman (2023) in South Asia found that higher non-performing loan ratios significantly erode profitability, reinforcing the universality of this relationship. Likewise, Silva and Costa (2024) in Europe and Nguyen and Tran (2023) in Vietnam reported that poor credit portfolio quality reduces both profitability and investor confidence, mirroring the Nigerian experience. However, Kumar and Nair (2022) observed that in technologically advanced Indian banks, the adoption of AI-based credit scoring mitigates this effect, suggesting that the severity of credit risk on performance depends partly on digitalization levels. Thus, while the direction of impact is globally consistent the magnitude varies depending on institutional innovation and regulatory discipline, positioning Nigeria's case as a critical benchmark for emerging markets still modernizing their credit risk frameworks.

Liquidity risk has no significant effect on the financial performance of listed deposit money banks in Nigeria.

The coefficient for liquidity risk, measured by the Loan-to-Deposit Ratio (LDR), is -0.097 and statistically significant at the 5% level ($p = 0.027$). This suggests that higher liquidity risk, resulting from aggressive lending relative to available deposits, leads to a reduction in ROA. The null hypothesis (H02) is also rejected, confirming that liquidity risk significantly affects financial performance. This result supports the findings of Shodeinde (2025), Sihaloho (2025), and Samarsinghe & Lakmal (2025), who emphasized that excessive LDRs impair profitability and funding stability. It reinforces the theoretical assumption of risk-return tradeoffs, validating that poorly managed liquidity positions can compromise both solvency and returns. Similar evidence is found internationally. Alemu and Worku (2024) reported that liquidity shocks substantially lower profitability in East African banks, while Mwangi and Odhiambo (2024) demonstrated that strict adherence to Basel III liquidity ratios enhances financial stability in Kenya. In contrast, Chen and Li (2023) showed that Chinese banks with efficient digital liquidity monitoring systems maintain profitability even under high LDR conditions,

highlighting the role of technology and regulatory frameworks in mitigating liquidity stress. Adekunle and Ajibola (2023) also found that Nigerian banks with diversified deposit bases manage liquidity pressure more effectively than those reliant on corporate funding. Therefore, this study's results are consistent with global findings that excessive loan exposure relative to deposits weakens performance, though the degree of vulnerability differs across institutional settings and regulatory sophistication.

Conclusion

The study concludes that both credit risk and liquidity risk significantly and negatively impact the financial performance of listed deposit money banks in Nigeria. Effective risk management strategies are therefore essential for achieving sustainable profitability. Banks with higher non-performing loans and loan-to-deposit ratios are more likely to experience suppressed returns, highlighting the need for improved credit appraisal and liquidity governance frameworks.

These findings carry important implications beyond the banking industry. For regulators such as the Central Bank of Nigeria (CBN), the results underscore the need for continuous enforcement of prudential guidelines and stricter supervisory reviews on credit concentration and liquidity adequacy. For policymakers, the findings suggest that national financial stability frameworks should integrate risk-based monitoring systems that track asset quality and funding risk indicators in real time. For investors and stakeholders, the study provides evidence that high NPLR and LDR levels are early warning indicators of profitability erosion, emphasizing the value of transparent disclosure and risk governance reporting. On a broader scale, the study contributes to regional policy debates by illustrating that robust risk management is critical for sustaining banking stability and economic growth in emerging markets like Nigeria. Inline with the findings of the study, the following recommendations have been made:

i. Credit Risk Management: Based on the findings of Hypothesis One, it is recommended that banks strengthen their credit appraisal systems and implement proactive loan monitoring mechanisms to reduce non-performing loans. Integrating predictive analytics and AI-powered tools could improve borrower screening and creditworthiness assessment.

ii. Liquidity Risk Controls: From Hypothesis Two, banks should adopt more conservative liquidity management strategies. This includes maintaining adequate liquid asset buffers, aligning loan disbursements with deposit mobilization capacity, and stress-testing funding scenarios to improve resilience during economic shocks.

Policy Implications

The findings of this study have vital implications for policymakers, regulators, and investors in Nigeria's financial sector. For policymakers, the results emphasize the need to integrate credit and liquidity risk indicators into national financial stability frameworks and macroprudential policies. Regulators such as the Central Bank of Nigeria (CBN) should strengthen supervisory oversight and enforce stricter compliance with Basel III requirements to enhance resilience. For investors, transparency in disclosing risk metrics such as NPLR and LDR should guide portfolio decisions and promote confidence in bank performance. Collectively, these policy information contribute to building a more stable, risk-sensitive, and investor-friendly financial system that supports sustainable banking operations and long-term economic growth.

This study is limited by its reliance on secondary data, which may not fully capture qualitative aspects of risk management practices. Additionally, the analysis only covers listed banks, potentially excluding systemic information from unlisted or microfinance institutions. Macroeconomic and political factors influencing risk

exposure were also not explicitly modeled, which may affect the generalizability of the findings. Future research can expand the scope by incorporating unlisted banks and fintech institutions to capture broader sectoral dynamics. Also, exploring the moderating role of corporate governance, economic policy shifts, and technological innovation in risk-performance relationships can yield deeper insights. Longitudinal studies using structural equation modeling or machine learning techniques could also enhance predictive accuracy and strategic forecasting for risk management in African banking contexts.

Declaration

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