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Credit Risk Management and Profitability of Deposit Money Banks in Nigeria

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ABSTRACT

Profitability remains central to the operations of deposit money banks (DMBs) worldwide, shaping their sustainability, resilience, and ability to support economic growth through credit creation and financial intermediation. Effective credit management is therefore essential, as it influences key performance indicators such as Net Interest Margin (NIM), which reflects the spread between interest income and expenses. This study examines the impact of credit management on the profitability of Nigerian DMBs from 2010 to 2023, focusing on the relationship between NIM and three major financial indicators: Loan-to-Deposit Ratio (LDR), Average Liquidity Ratio (ALR), and Non-Performing Loans to Total Loans (NPLL). A Vector Autoregression (VAR) framework, supported by impulse response functions, variance decomposition, and stability diagnostics, was employed. The results show that NIM is shaped by its own past behaviour as well as by liquidity and asset-liability structure (captured by LDR and ALR), while credit quality (NPLL) exerts only a marginal short-term influence. These findings highlight the significance of internal financial strategies in enhancing bank profitability. The study recommends optimizing LDR, strengthening asset-liability management, and maintaining strong credit risk controls despite NPLL's limited short-run effect.

1. Introduction

Profitability lies at the heart of the operational framework of deposit money banks (DMBs) globally, shaping their resilience, sustainability, and ability to drive economic growth through credit creation, financial intermediation, and innovation. It also guides strategic and operational decisions, influencing risk management, investment choices, and customer engagement (Olowe, 2022). The global financial crisis of 2008 demonstrated that weak profitability and excessive risk-taking can endanger not only individual banks but the entire financial system. As global banking evolves—driven by digitalization, fintech competition, and changing interest rate environments—banks continually adjust their income structures and cost strategies (McKinsey, 2022).

Across Africa, profitability remains central to banking stability despite macroeconomic volatility, regulatory limitations, and low financial inclusion. Many African DMBs, particularly in East and West Africa, continue to show strong performance and resilience (Ernest & Young, 2020). High interest margins, underdeveloped capital markets, and moderate competition often drive profitability, while digital banking and mobile innovations are expanding non-interest income streams (Olowe, 2022).

In Nigeria, profitability is critical for both banking sector sustainability and national economic development. The Central Bank of Nigeria (CBN) maintains regulatory oversight to ensure soundness and innovation, while profitability indicators such as return on assets (ROA) and return on equity (ROE) remain central to evaluating bank performance. However, Nigerian DMBs operate under pressures including exchange rate instability, inflation, regulatory interest rate controls, and persistent non-performing loans (IMF, 2022). Effective credit management is therefore essential for sustaining profitability, particularly through its influence on Net Interest Margin (NIM), a key measure of bank performance.

Despite regulatory reforms, credit management challenges—such as high non-performing loan ratios and weak liquidity positions—continue to impair the profitability of Nigerian DMBs. These issues reduce NIM and weaken the capacity of banks to support economic growth (Natufe & Evbayiro-Osagie, 2023; Ugwu et al., 2023).

This study aims to examine how credit management affects the profitability of DMBs in Nigeria. Specifically, it seeks to:

i. Assess the relationship between the Average Liquidity Ratio (ALR) and Net Interest Margin (NIM).
ii. Evaluate the effect of the Loan-to-Deposit Ratio (LDR) on NIM.
iii. Investigate the influence of the Non-Performing Loan-to-Total Loan Ratio (NPLL) on NIM.

The study proposes the following hypotheses:

HO1:ALR has no significant positive relationship with NIM in Nigerian DMBs.
HO2:LDR has no significant positive relationship with NIM in Nigerian DMBs.
HO3:NPLL has no significant positive relationship with NIM in Nigerian DMBs.

2. Review of Related Literature

2.1 Conceptual Review

Concept of Profitability in Deposit Money Banks

Profitability is a key indicator of the financial performance of Deposit Money Banks (DMBs), reflecting their ability to generate earnings relative to operating costs, risks, and capital structure (Ogunleye & Adepoju, 2023). It signals operational efficiency, sound financial management, and value creation for stakeholders. Profitability is also influenced by interest-rate conditions; for instance, aggressive rate hikes by global central banks between 2022–2024 boosted interest income and net interest margins but led to increased defaults in interest-sensitive economies (Standard Bank, 2024; IMF, 2023).

In Africa, profitability remains critical to financial stability and economic growth. African DMBs play significant roles in savings mobilization and credit provision, yet their performance is shaped by macroeconomic volatility, regulatory pressures, and the growing digital finance landscape (Abiola & Bamidele, 2022).

Concept of Credit Management

Credit management refers to the strategies, policies, and procedures banks apply to achieve their credit objectives and align lending activities with their risk appetite (Ayodeji & Adewale, 2025). It includes credit appraisal, loan approval, monitoring, and recovery to ensure compliance with bank policies. Credit managers set limits, determine acceptable risk levels, and enforce repayment terms (Nwanna & Oguezue, 2025). Effective credit management is also seen as a stabilizing mechanism, reducing exposure to bad debts and strengthening investor confidence (Nwankwo, 2024).

Concept of Net Interest Margin (NIM)

Net Interest Margin (NIM) measures the difference between interest income earned on assets and interest paid on liabilities, expressed relative to total assets. A higher NIM indicates efficient asset-liability management and contributes positively to bank profitability (Corporate Finance Institute, 2024). Collins & Agada (2024) describe NIM as the net return from credit products after deducting interest expenses on deposits. Similarly, Alzoubi & Abed (2024) note that NIM captures both profitability and the efficiency of managing interest-earning assets and liabilities.

Concept of Non-Performing Loans to Total Loan Ratio (NPLL)

The Non-Performing Loan to Total Loan Ratio represents the proportion of loans classified as doubtful, substandard, or lost relative to a bank's total loan portfolio. It is a vital indicator of asset quality and credit risk (Ezu, Nwanna & Nwolisa, 2023). According to Ijuwo (2024), a higher ratio signifies rising credit risk and potential loan recovery challenges. Tomomewo et al. (2023) add that the ratio reflects the effectiveness of credit risk management, while Adeleke et al. (2024) emphasize its role in evaluating financial performance and exposure to default risk.

Concept of Average Liquidity Ratio (ALR)

The Average Liquidity Ratio assesses a bank's ability to meet short-term obligations using its liquid assets and is essential for evaluating financial stability. Adam & Ayagi (2024) define it as a bank's capacity to meet short-term liabilities without incurring losses, while Bankole & Dimgba (2022) describe it as the share of liquid assets relative to short-term obligations. Arin, Nyahas & Ekoja (2025) highlight its role in maintaining stability, and Kwatmak et al. (2024) affirm its importance in safeguarding the financial system. The Corporate Finance Institute (2024) further explains the liquidity coverage ratio as a regulatory requirement ensuring banks hold sufficient high-quality liquid assets to meet short-term demands.

2.2 Theoretical Framework

This study is anchored on the Net Interest Margin (NIM) Theory, also known as the Bank Profitability Theory, developed by Ho and Saunders (1981). The theory emphasizes NIM being the difference between interest earned on loans and interest paid on deposits as the primary determinant of bank profitability and risk exposure. It argues that banks set interest spreads based on intermediation costs, risk premiums, market power, and regulatory constraints.

A higher NIM signals efficient income generation but may indicate high lending rates that reduce competitiveness. Conversely, a lower NIM often reflects strong competition or a low interest-rate environment, both of which can compress bank profitability. The theory is therefore directly relevant to this study, which focuses on how credit management indicators influence NIM in Nigerian DMBs.

2.3 Empirical Review

Okey Nwala and Wachukwu (2025) assessed the effect of liquidity management on the profitability of Nigerian banks using OLS. Their results showed that liquidity significantly influenced ROA and ROE but had no effect on earnings per share. They recommended maintaining adequate liquidity to avoid crises.

Olu Akinola et al. (2025) examined liquidity risk management and profitability among quoted money deposit banks (2011–2020). Using regression analysis, they found that both loan-to-deposit ratio and capital adequacy ratio positively affected ROA. They advised banks to maintain an optimal lending level to avoid liquidity deficits.

Ganiyu, Usiomoifoh and Akinloye (2025) used correlation and regression techniques to evaluate liquidity management and bank performance. They concluded that cash reserve ratio and loan-to-deposit ratio significantly and positively affect performance, stressing the importance of sound liquidity management.

Owusu and Garr (2025) analyzed the relationship between capitalization and profitability using firm-level data. Their findings showed that high capitalization reduces profitability, increases financial risks, and weakens shareholder returns. They recommended balanced capital structures and stronger regulatory oversight.

Ogunwale and Isibor (2024) evaluated credit risk management from 2010–2020. They found that capital adequacy and loan-loss provisions positively influence performance, while non-performing loans exert a negative effect. Strengthening credit assessment and monitoring was recommended.

Collins and Agada (2024) studied credit management practices among banks listed on the NGX (2014–2023). Using NIM as a performance metric, they found that credit risk and asset quality negatively but insignificantly affect NIM, while liquidity risk shows a significant negative effect. They emphasized improved liquidity and credit analysis.

John (2023) examined how NPLs influence bank performance using panel data from 2018–2022. Capital adequacy and net interest income significantly improved ROE, while high NPL levels undermined performance. He recommended improving loan quality and strengthening capital buffers.

Ozili (2023) employed panel system GMM to investigate determinants of NPLs across developing economies (2010–2020). The study showed that NPLs reduce during economic expansion and emphasized the need for strong regulatory frameworks and a resilient banking sector.

Bankole and Dimgba (2022) analyzed liquidity ratios and ROE using panel OLS (2006–2020). They found that liquidity significantly improves operational efficiency. They recommended maintaining optimal liquidity and minimizing operational costs.

2.4 Gap in Literature

Despite extensive studies on bank profitability, key gaps remain. First, many analyses rely on annual data, which may overlook short-run fluctuations and structural changes in bank performance. This study addresses this by using quarterly data over 14 years (56 observations), offering a more sensitive understanding of temporal dynamics.

Second, most studies commonly employ ROA and ROE as profitability measures, with limited focus on Net Interest Margin (NIM). Since NIM directly captures banks' core intermediation function—interest spread management—its underuse limits insights into interest-driven profitability. By adopting NIM as the dependent variable, this study provides a more targeted assessment of how credit management indicators shape interest-based performance in Nigerian DMBs.

3. Methodology

This section presents the approach used to examine how credit management affects the profitability of deposit money banks (DMBs) in Nigeria. The study evaluates the relationship between Net Interest Margin (NIM) and three credit-related indicators: Average Liquidity Ratio (ALR), Loan-to-Deposit Ratio (LDR), and Non-Performing Loan-to-Total Loan Ratio (NPLL). A quantitative, econometric approach was adopted, using a Vector Autoregressive (VAR) model to capture the dynamic and interdependent behaviour of the variables.

Study Design

An ex-post facto research design was employed, relying on historical data to explore the causal link between credit management and bank profitability. Since the variables cannot be manipulated, this design is appropriate for financial and economic research. Unit root tests confirmed that all series were stationary at first difference, supporting the use of the VAR framework for analysing short-run dynamics and feedback effects.

Model Specification

A VAR model was adopted to estimate the joint behaviour of NIM, ALR, LDR, and NPLL. The model accommodates bidirectional causality and allows each variable to respond to its own lags and the lags of others.

Model Form

The VAR model for this study is specified as follows:

$$NIM_t = \alpha_0 + \beta 1_i NIM_{t-1} + \beta 2_i ALR_{t-1} + \beta 3_i LDR_{t-1} + \beta 4_i NPLL_{t-1} + \epsilon_{1t}$$

$$ALR_t = \alpha_1 + \gamma 1_i NIM_{t-1} + \gamma 2_i ALR_{t-1} + \gamma 3_i LDRt-1 + \gamma 4_i NPLL_{t-1} + \epsilon_{2t}$$

$$LDR_t = \alpha_2 + \delta 1_i NIM_{t-1} + \delta 2_i ALR_{t-1} + \delta 3_i LDR_{t-1} + \delta 4_i NPLL_{t-1} + \epsilon 3_t$$

$$NPLL_t = \alpha_3 + \theta 1_i NIM_{t-1} + \theta 2_i ALR_{t-1} + \theta 3_i LDR_{t-1} + \theta 4_i NPLL_{t-1} + \epsilon 4_t$$

Where:

t - symbolizes the time period.

t-1 is the lag length determined by the optimal lag selection criteria.

$\alpha 0, \alpha 1, \alpha 2, \alpha 3$ are constants.

$\beta ij, \gamma ij, \delta ij, \theta ij$ are the coefficients of the lagged variables.

$\epsilon 1t, \epsilon 2t, \epsilon 3t, \epsilon 4t$ are the error terms.

The VAR model is justified based on its strength in modeling interdependencies and tracing short-run adjustments among the variables.

Data Collection and Sources

The study relied exclusively on secondary data covering Net Interest Margin (NIM), Average Liquidity Ratio (ALR), Loan-to-Deposit Ratio (LDR), and Non-Performing Loan Ratio (NPLL). These data were obtained primarily from the Nigerian Deposit Insurance Corporation (NDIC), which provides detailed information on bank performance, liquidity, and credit-risk indicators,

and from the Federal Reserve Economic Data (FRED), which offers complementary macro-financial statistics used to provide broader context for the analysis.

Data Analysis Procedures

The data analysis followed a systematic process beginning with descriptive statistics—mean, standard deviation, skewness, and kurtosis—to summarize the distribution and variability of the variables. The Augmented Dickey-Fuller (ADF) test was used to confirm the stationarity of each series. Pre-estimation diagnostics, guided by AIC and SBC criteria, helped determine the optimal lag length for the VAR model. The VAR estimation then assessed how ALR, LDR, and NPLL jointly affect NIM and interact with one another. Post-estimation checks ensured model robustness through stability testing, residual diagnostics for autocorrelation and heteroskedasticity, impulse response functions (IRF) to observe NIM's reaction to shocks, and variance decomposition to show each variable's contribution to NIM's forecast variance. Findings were presented in tables and graphs with concise interpretations, offering a clear view of how credit management indicators influence bank profitability.

4. Data and Analysis

4.1 Data Analysis

Table 1: Descriptive Analysis

	NIM	NPLL	LDR	ALR
Mean	12.9384	16.67077	1.706983	1.784496
Median	12.35205	16.4715	1.741284	1.343214
Maximum	17.53455	22.09027	2.795596	3.76
Minimum	10.27705	13.59822	0.560829	0.700714
Std. Dev.	2.441954	2.464589	0.612656	1.073868
Skewness	0.95147	0.707152	-0.12192	0.881788
Kurtosis	2.441509	2.756589	2.43977	2.138063
Jarque-Bera	9.177221	4.805509	0.871063	8.990647
Probability	0.070166	0.090468	0.646921	0.071161
Sum	724.5504	933.5633	95.59106	99.93179
Sum Sq. Dev.	327.9727	334.0809	20.6441	63.42564
Observations	56	56	56	56

Source: E-views computation 2024

This table .1 provides a summary of descriptive statistics for the variables in the study. It includes the mean, median, standard deviation, and measures of skewness and kurtosis for Net Interest Margin (NIM), Non-Performing Loan Ratio (NPLL), Loan-to-Deposit Ratio (LDR), and Average Liquidity Ratio (ALR). Additionally, the Jarque-Bera test decision rule is comparing the p-value of the test to a chosen significance level (usually 0.05). Therefore, the jarque-bara test and probabilities indicate that all variables are approximately normally distributed, as their p-values exceed the 0.05 significance level. The table highlights the variability and distribution characteristics of the data, forming a foundation for further econometric analysis.

Table 2: Variance Inflation Factor (VIF) Test

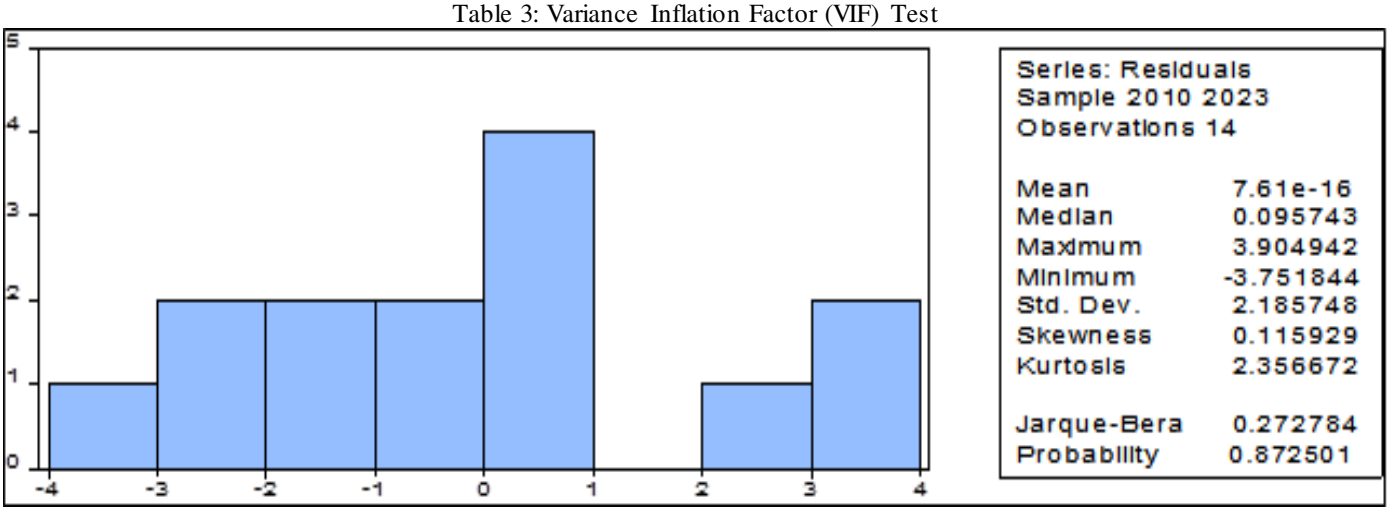
Variable	Variance	VIF	VIF
C(23)	0.002372	251.604	4.655626
C(24)	0.00193	205.7282	4.949948
C(25)	0.003519	609.2624	3.221000
C(26)	0.00344	596.4521	2.906406
C(27)	0.023754	48.6507	1.117324
C(28)	0.022067	44.85068	2.047922
C(29)	0.022407	57.19639	4.869325
C(30)	0.021541	58.16709	5.094409
C(31)	4.95E-09	1632789	1.257453
C(32)	6.13E-09	2020051	3.027016
C(33)	646.446	393258.7	NA

Source: E-views computation 2024

Table 2. Summarizes the rule for Variance Inflation Factor (VIF) is that the VIF of 1 indicate no multicolliearity while values above 5 or 10 suggest multicolliearity that need to be addressed. Therefore variance inflation factor (VIF) study analysis detect multicollinearity among the independent variables: ALR, LDR, and NPLL. The centered VIF values are all below the threshold of

10, indicating an absence of severe multicollinearity. The uncentered VIF values are significantly higher due to the inclusion of the constant term. The results suggest that the model variables are statistically reliable for regression analysis without multicollinearity concerns.

Table 3: Variance Inflation Factor (VIF) Test



Source: E-views computation 2024

Table 3: presents the results of the normality test using the Jarque-Bera statistic. The Jarque-Bera value of 0.272784 and the associated probability of 0.872501 indicate that the residuals are normally distributed. Since the p-value is greater than the standard significance levels (e.g., 0.05), the null hypothesis of normality is not rejected. This confirms that the data satisfy the normality assumption required for reliable statistical analysis.

Table .4: Serial Correlation and Heteroskedasticity Tests

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.814934	Prob. F(2,8)	0.4763
Obs*R-squared	2.36952	Prob. Chi-Square(2)	0.3058
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.01859	Prob. F(3,10)	0.0807
Obs*R-squared	6.653143	Prob. Chi-Square(3)	0.0838
Scaled explained SS	2.302585	Prob. Chi-Square(3)	0.512

Source: E-views computation 2024

The results of the diagnostic tests in table 4 indicate that the regression model satisfies key assumptions. The Breusch-Godfrey Serial Correlation LM Test shows no evidence of serial correlation, as both the Prob. F(2,8) value (0.4763) and the Prob. Chi-Square(2) value (0.3058) exceed the 0.05 significance level. Similarly, the Breusch-Pagan-Godfrey test indicates no heteroskedasticity, with the Prob. F(3,10) value (0.0807), Prob. Chi-Square(3) value (0.0838), and Scaled Explained SS Prob. Chi-Square(3) value (0.512) all greater than 0.05. These results confirm that the model is free from serial correlation and heteroskedasticity, supporting the reliability of its estimates.

Table 5: Unit Root Test

Method			Statistic	Prob.**
ADF - Fisher Chi-square			173.518	0.0000
ADF - Choi Z-stat			12.1134	0.0000
Intermediate ADF test results D(Joint)				
Series	Prob.	Lag	Max Lag	Obs
D(NIM)	0.0000	0	10	54
D(NPLL)	0.0000	0	10	54
D(LDR)	0.0000	0	10	54
D(ALR)	0.0000	0	10	54

Source: E-views computation 2024

The unit root test results, as presented in Table 5, confirm the stationarity of all variables at their first difference. The ADF-Fisher Chi-square statistic (173.518, p = 0.0000) and the ADF-Choi Z-statistic (12.1134, p = 0.0000) strongly reject the null hypothesis of non-stationarity. Additionally, the intermediate ADF test results show that the probabilities for the differenced series D(NIM), D(NPLL), D(LDR), and D(ALR) are all below the 0.05 significance level, further confirming their stationarity. This validates the appropriateness of using these variables in the VAR model analysis.

Table .6: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-796.553	NA	9415798	30.24726	30.43314	30.31874
1	-577.195	389.0487*	6176.546*	22.91303*	24.02829*	23.34190*
2	-558.589	29.48885	8066.84	23.15431	25.19895	23.94058
3	-543.444	21.14666	12504.72	23.52617	26.5002	24.66984

Source: E-views computation 2024

Table .6 identifies lag 1 as the optimal lag length for the VAR model based on the lowest values of the Final Prediction Error (FPE = 6176.546), Akaike Information Criterion (AIC = 22.91303), and support from the LR test statistic (389.0487). This selection ensures model accuracy and efficiency.

Table .7: VAR Model Estimation

*VAR Model Equation: NIM = C(1)*NIM(-1) + C(2)*ALR(-1) + C(3)*LDR(-1) + C(4)*NPLL(-1) + C(5)*

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.826265	0.073246	11.28071	0.0000
C(2)	0.032071	0.016908	1.996860	0.0419
C(3)	0.007247	0.022826	3.174949	0.0152
C(4)	-0.020319	0.053645	-0.378773	0.7065
C(5)	-0.197265	0.423147	-0.466187	0.6431
R-squared	0.788144			
Adjusted R-squared	0.771195			
F-statistic	46.50224	Durbin-Watson stat		2.048034
Prob(F-statistic)	0.000000			

Source: E-views computation 2024

Table .7 presents the results of the Vector Autoregression (VAR) model estimation for the Net Interest Margin (NIM). The model includes one lag each of NIM, Asset-Liability Ratio (ALR), Loan-to-Deposit Ratio (LDR), and Non-Performing Loan Losses (NPLL). The coefficient of NIM (-1) is positive and statistically significant at the 1% level, indicating strong persistence in NIM. ALR (-1) and LDR(-1) also have statistically significant positive effects, though at lower significance levels (5% and 5% respectively), while NPLL(-1) and the constant term are not significant. The model has a high explanatory power (R^2 = 0.788), with an Adjusted R^2 of 0.771, and the overall model is statistically significant (F-statistic = 46.50, $p < 0.01$). The Durbin-Watson statistic of 2.048 suggests no serious autocorrelation in the residuals.

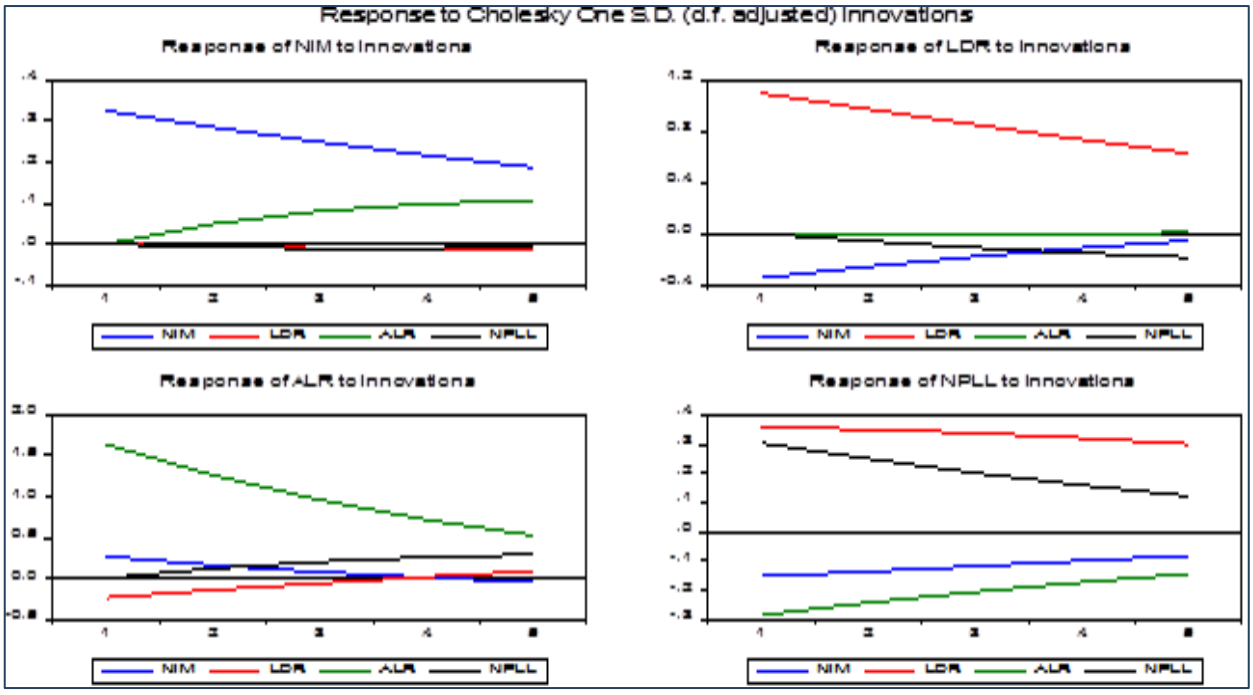


Figure 1: Impulse Response Function (IRF)
Source: E-views computation 2024

Fig.1 presents the impulse response functions (IRFs) for NIM, LDR, ALR, and NPLL, highlighting the dynamic interactions over five periods following one-unit shocks. Each variable exhibits a strong and persistent positive self-response, with the effects gradually decaying over time, indicating autoregressive behavior. NIM's response to its own shocks diminishes steadily, while the effects of LDR, ALR, and NPLL on NIM are minimal. Similarly, LDR and ALR maintain dominant self-responses, with limited and mostly negative influences from other variables. NPLL also demonstrates a robust self-response, with weak cross-variable interactions, except for a slight positive effect on ALR. Overall, the results suggest that the variables are largely influenced by their own past values, with minimal spillover effects from others, reflecting the autoregressive nature of the system.

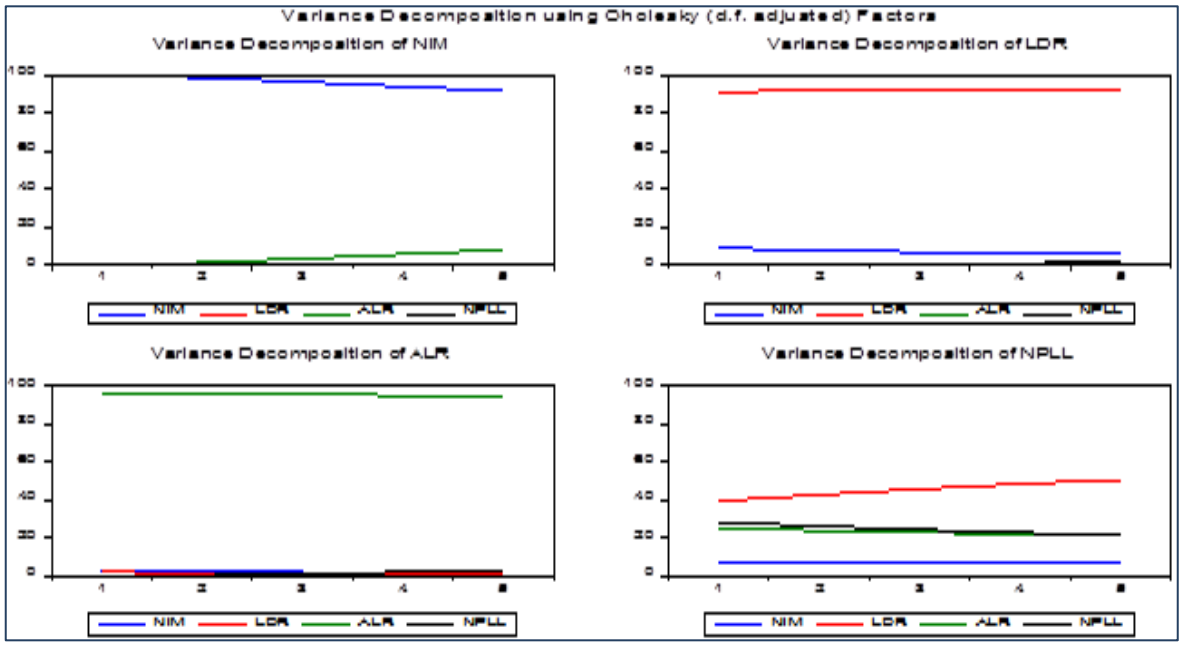


Figure 2: Variance Decomposition
Source: E-views computation 2024

Figure 2 illustrates the variance decomposition of NIM, LDR, ALR, and NPLL over five periods, highlighting the relative contributions of shocks to each variable. NIM's variance is overwhelmingly driven by its own innovations, explaining 91.5% by period 5, with ALR contributing modestly (8.2%). LDR's variance is also dominated by itsself-shocks, accounting for 92.6% by period 5, while NIM explains 5.6%, and the influence of NPLL and ALR is minimal. ALR shows a strong self-contribution of over 93.7% by period 5, with NPLL contributing 3.2%. NPLL's variance is influenced most significantly by LDR (50.7%) and its own shocks (21.3%) by period 5, with moderate contributions from ALR (21.3%) and NIM (6.6%). These results underscore the dominance of own-variable shocks in explaining variances, with some cross-variable interactions, particularly between LDR and NPLL.

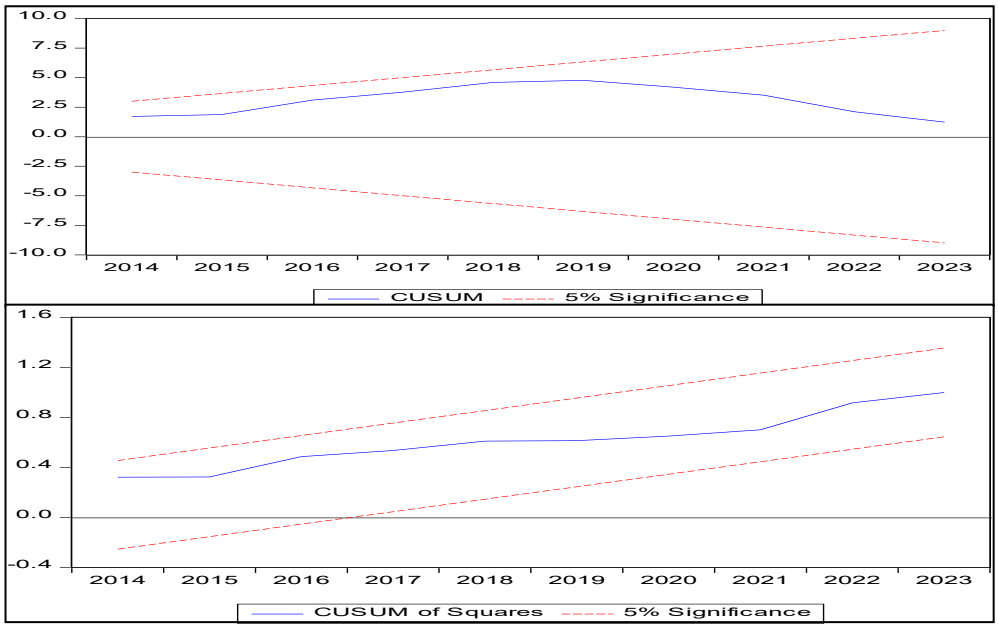


Figure 3 & 4: CUSUM and CUSUM of Square
Source: E-views computation 2024

The CUSUM graph demonstrates that the line remains within the upper and lower boundaries, indicating stability in the model. Starting from a level slightly above zero (0.2), it steadily rises to a peak of 2.4 before declining to a near-zero value of 0.1. Similarly, the CUSUM of Squares graph also lies within the acceptable limits, confirming the absence of structural instability. It begins above zero (0.3) and continues to rise in a fluctuating pattern, reaching a maximum value of 0.6. These trends collectively suggest that the model's parameters are stable over time, providing reliable results for inference and interpretation.

4.2 Hypotheses Testing

The VAR model was used to test the study's hypotheses by examining how Net Interest Margin (NIM) responds to changes in Loan-to-Deposit Ratio (LDR), Asset-Liability Ratio (ALR), and Non-Performing Loan Losses (NPLL). For Hypothesis 1, the LDR coefficient (C(3) = 0.007247) was positive and statistically significant (p = 0.0152), leading to the rejection of the null hypothesis. This shows that LDR has a meaningful effect on NIM, indicating that banks' lending intensity relative to deposits shapes their interest margin. For Hypothesis 2, ALR (C(2) = 0.032071) was also significant at the 5% level (p = 0.0419), prompting rejection of the null hypothesis and confirming that balance sheet structure influences NIM. For Hypothesis 3, NPLL (C(4) = –0.020319) was not statistically significant (p = 0.7065), so the null hypothesis could not be rejected, implying that short-term changes in loan losses do not directly affect NIM. Overall, the VAR results show that LDR and ALR significantly and positively impact NIM, while NPLL does not. The strong significance of NIM(-1) further highlights the autoregressive nature of interest margin behavior, suggesting that past profitability and banks' structural positions play major roles in determining NIM, whereas credit risk effects appear weaker in the short run.

5. Summary, Conclusion, and Recommendations

5.1 Summary

This study examined the relationship between Net Interest Margin (NIM) and key financial indicators—Loan-to-Deposit Ratio (LDR), Asset-Liability Ratio (ALR), and Non-Performing Loan Losses (NPLL)—in Nigerian deposit money banks. Using descriptive statistics, unit root tests, impulse response functions, variance decomposition, and Vector Autoregression (VAR) modeling, the research identified the main drivers of NIM over the study period. Results showed that NIM exhibits moderate fluctuations, reflecting variations in profitability, liquidity positions, and credit risk management across banks. Unit root tests confirmed data stationarity, validating VAR estimation. Impulse response and variance decomposition analyses revealed that NIM is strongly autoregressive, largely influenced by its past values, while LDR and ALR also have significant positive effects. In contrast, NPLL was found to be statistically insignificant, indicating that short-term credit risk has limited impact on NIM. Model stability was confirmed via CUSUM and CUSUM of Squares tests.

5.2 Conclusion

The findings demonstrate that internal financial factors, particularly past NIM performance, liquidity management, and balance sheet structure, are key determinants of interest margins, while the short-term effect of non-performing loans is minimal. This underscores the importance of strategic management of lending practices and asset-liability alignment in enhancing bank profitability.

5.3 Recommendations

Based on the findings, banks should optimize Loan-to-Deposit Ratios to enhance NIM by balancing lending growth with prudent risk management. Effective Asset-Liability Management should be prioritized to align maturities and interest profiles, improving net interest returns. Finally, despite the short-term insignificance of NPLL, robust credit risk management should be maintained to safeguard long-term profitability and financial stability.

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