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CREDIT RISK MANAGEMENT AND BANKS' FINANCIAL PERFORMANCE NEXUS IN NIGERIA: EVIDENCE FROM AN ERROR CORRECTION MODEL

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Abstract

This study investigated the cause-effect relationship between credit risk management and financial performance of Deposit Money Banks (DMBs) in Nigeria for the period 2000 to 2024. Related literature for the study was reviewed conceptually, theoretically and empirically. Thus, adopting a single equation model, capital adequacy ratio, non-performing loan ratio, loan-to-deposit ratio, and liquidity ratio were credit risk management indices considered while net interest margin (NIM) was used to proxy financial performance. Relying on secondary data sourced from Central Bank of Nigeria (CBN) statistical bulletin for 2024 and the World Bank (2024), the ARDL (Autoregressive Distributed Lag) technique was primarily used for data analysis and model estimation. The data was also exposed to descriptive analysis, unit root test, and diagnostic tests. Findings from the ARDL analysis revealed that in the short run, loan-to-deposit ratio has a negative insignificant effect on NIM while capital adequacy ratio, non-performing loan ratio and liquidity ratio have positive insignificant effects on NIM. The study further showed that there is a long run relationship between credit risk management and financial performance of banks though only the effect of non-performing loan was significant in the long run. The study adduced that credit risk management has an insignificant effect on the financial performance of Deposit Money Banks in Nigeria. Hence, Deposit Money

Banks should focus on optimizing their capital structure in order to minimize costs and maximize returns.

Keywords: Credit Risk, Credit Risk Management, DMBs, Financial Performance, ARDL.

Introduction

Deposit Money Banks (DMBs) are unique financial institutions that accept deposits from customers as savings and lend same to other customers who have need for these funds for investment purposes. As corporate entities, DMBs are expected to meet up with the expectations of shareholders who constantly expect returns on their investments. Similarly, depositors of funds, borrowers of funds, creditors, regulators and the immediate community where these banks operate monitor the performance of these banks for various reasons. This makes it imperative for DMBs to perform optimally at all times. The performance of Deposit Money Banks (DMBs) in every setting is gauged using financial and non-financial indicators.

On one hand, customer satisfaction, customer loyalty and repeat patronage are some of the matrices used to measure the non-financial performance of DMBs. On the other hand, financial performance indicators cuts across return on equity (ROE), return on asset (ROA), gross profit margin, net profit margin, and net interest margin (Philip, 2021).

Net interest margin is a unique measure of financial performance that considers the spread between bank lending and deposit rates. Deposit rate is the interest rate DMBs pay depositors for saving their monies with banks while lending rate is the cost of borrowing money from banks. The difference between both rates constitutes profit to these banks. Thus, the wider the difference between both rates, the higher the financial return of banks. According to Singh, Gupta and Chaudhary (2024), the gamut of the operational activities of DMBs are geared towards widening the gap between lending and lending rates.

Accordingly, Imawuni and Ugha (2021) submitted that over 70% of bank profits come from returns on lending. Thus, what plays out is that DMBs try as much as they can to borrow at the lowest possible rate from the surplus unit by way of deposit mobilization and lend at the highest possible rate to the deficit sector. In essence, the more the spread, the more the returns which a bank earns for its shareholders and other stakeholders (Catherine, 2020). Nevertheless, this act of lending constitutes credit risk for banks because in some instances, there may be default, where the customer may fail to pay the interest and principal as they mature or as they fall due within the specified period as agreed between the bank and the borrower. Once there is default and the debtor defaults as scheduled or retrieval is highly doubtful or it is probable to be protracted, the loan turns out to be a non-performing loan which at last leads to bad debts (Nwaguru, Obainoke & Anukam, 2025).

The above scenario makes credit risk management inevitable for Deposit Money Banks because effective credit risk management can boost financial performance while, poor management can lead to non-performing loans and decreased profitability (Adesina, Nasieku & Oluoch, 2020). In this light, Falade, Nyor, Yahaya & Agbi (2024) stated that poorly managed credit risk can trigger other banking related risks like liquidity risk, operational risk, market risk, reputational risk and systemic risk which does not augur for the banking system and the economy at large. To arrest this unwanted situation, the banking is the most regulated industry in the world. This regulation with respect to credit risk manifest or is monitored by the apex bank using a set of measures or ratios like capital adequacy ratio, non-performing loan ratio, liquidity ratio, loan-

deposit ratio, bank leverage ratio, loan loss provision ratio, total loan to total assets ratio and others (Falade, Nyor, Yahaya & Agbi, 2024). These ratios which vary from country to country are standard measures used by the central banks of countries to assist Deposit Money Banks (DMBs) in the management of their credit risks.

Statement of the Problem

The business of banking is saddled with risks. These risks range from credit risk to liquidity risk, fraud, interest rate risk, exchange rate risk and others. At the center of these risks is credit risk which propels other classes of risks. To address credit risk, Deposit Money Banks (DMBs) and the apex bank in Nigeria have proposed and adopted varying measures like the credit risk management system (CRMS), credit guarantee scheme, Basel III transition, and risk-based supervision (Natufe & Evbayiro, 2023). These measures aim to enhance credit risk management, improve financial stability, and promote sustainable growth in the Nigerian banking industry but the success of these measures has divided opinion because in the midst of these measures some banks have folded while some are waxing stronger and stronger.

Similarly, researchers are not on the same page as to the effects of credit risk management on the financial performance of Deposit Money Banks (Osaigboro, 2025; Abubakar, Hamza & Ibrahim, 2025; Law-Biaduo, Nnamdi & Fort-Edward, 2024; Amijaya & Alaika, 2023; Kwashie, Baidoo and Ayesu (2022). Adopting differently methodology, these studies at different times advocated that credit risk management has positive, negative, significant or insignificant effects on the financial performance of DMBs in Nigeria and beyond. These studies while exhausting all possible indices of credit risk management, have only adopted return on equity (ROE) and return on asset (ROA) as measures of financial performance, thereby isolating other important measures of DMBs' financial performance like net interest margin (NIM). On this backdrop, the concern is to know the effect of credit risk management on the financial performance of Deposit Money Banks in Nigeria using NIM as a measure of financial performance.

Review of Related Literature

Theoretical Framework

The study was anchored on the asymmetric information theory which centers on adverse selection and moral hazard problems because borrowers usually know more about their financial situation than the bank does. As a result of this, banks may find it difficult to identify borrowers that are likely to repay their loans and the ones that are not. This creates credit risk, which banks must carefully manage to avoid financial losses (Akerlof, 1970). According to Stiglitz and Weiss (1981), banks that fail to address this information gap may suffer financial instability due to high default rates. To reduce these risks, banks use credit risk management strategies such as maintaining a strong non-performing loans ratio, capital adequacy ratio, loan-to-deposit ratio and liquidity ratio in order to absorb potential losses. It is imperative to add that when financial institutions do not properly assess credit risks, they may experience significant financial losses, leading to reduced financial performance.

Empirical Review of Literature

Table 2.1: Summary of Empirical Review (Webometrics)

S/No.	Author(s)	Year	Topic	Location	Methodology	Findings
	Osaigbovo	2025	Credit risk management	Nigeria	Descriptive statistics and	Non-performing loans and bank size exert

			and financial performance of Deposit Money Banks in Nigeria		correlation analysis	significant negative impacts on the financial performance of Nigerian banks, whereas capital adequacy, loan loss provisions and liquidity ratio were not found to have significant effects on the financial performance of Deposit Money Banks in Nigeria.
	Abubakar, Hamza and Ibrahim	2025	Effect of credit risk management on financial performance of listed Deposit Money Banks in Nigeria	Nigeria	Ordinary Least Square (OLS) multiple regression technique	Loan loss provision ratio and capital adequacy ratio have positive and significant relationships with ROE of banks whereas loan loss provisions ratio has a negative but significant impact on ROE of the bank.
	Ugwu and Okwo	2025	Effect of credit risk management on the financial performance of Deposit Money Banks in Nigeria	Nigeria	Panel Ordinary Least Squares (OLS) multiple regression technique	Non-performing loans has a negative and significant effect on ROA, loan loss provision has a positive and significant effect on ROA, while capital adequacy ratio has a positive and significant effect on ROA. Also. non-performing loans, loan loss provision and capital adequacy ratio, as measures of liquidity, have a joint significant effect of about 44% on the performance of DMBs in Nigeria.
	Falade, Nyor, Yahaya and Agbi	2024	Risks management and financial performance of Deposit Money Banks	Nigeria	Pooled OLS multivariate regression analysis	Risks management variables have overall positive and significant effect on capital adequacy and value of the banks. It was also

			in Nigeria			revealed that the price earnings ratio model which proxied firms value is a better predictor of financial performance.
	Law-Biaduo, Nnamdi and Fort-Edward	2024	Credit risk management and performance of selected Deposit Money Banks in Nigeria	Nigeria	Panel regression of fixed effects and random effects techniques	Credit management has a positive and significant effect on DMBs' performance while liquidity ratio was found to have a positive but insignificant effect on ROE. The findings also revealed that non-performing loan has a positive but insignificant effect on ROE. The study further found that capital adequacy ratio negatively but significantly affect ROE. Loan-to-deposit ratio was found to have a negative and insignificant effect on ROE.
	Amijaya and Alaika	2023	Does financial risk matter for financial performance in Sharia banks	Indonesia	Panel data regression	Credit risk (measured by NPF) and operational risk (BOPO) has a significant negative impact on financial performance (ROA), while liquidity risk and inflation did not demonstrate a significant positive effect.
	Natufe and Evbayiro-Osagie	2023	Credit risk management and the financial performance of Deposit Money Banks: Some new	Nigeria	Panel data regression analysis approach	Capital adequacy ratio, risk asset ratio, non-performing loans ratio and size are significant determinants of ROE. It also found that Nigerian DMBs now significantly rely on

			evidence			offshore borrowings in Eurobonds to create risk assets to overcome CBN's directives on using local depositors' funds to create risk assets. Furthermore, the study found that shareholders of DMBs with international banking licenses in Nigeria within the study period were not significantly more compensated for their risk exposure than investors in risk-free assets (treasury bills).
	Kwashie, Baidoo and Ayesu	2022	Investigating the impact of credit risk on financial performance of commercial banks in Ghana	Ghana	Regression analysis	NPL has a negative impact on both ROA and EVA (economic value added) but was only statistically significant on EVA. LAR (loans and advances ratio) has an insignificant positive influence on ROA and EVA. CAR (capital adequacy ratio) also has an insignificant positive effect on ROA but a statistically significant negative effect on LAR. Size has a positive effect on both ROA and EVA but was statistically significant on EVA. Age, GDP, and INF have a positive statistically significant impact on ROE but an insignificant positive impact on EVA. MPR has a negative effect on ROA and EVA but was only statistically significant

						on ROA.
	Omorokunwa and Ogbeide	2022	Credit risk management and Deposit Money Bank performance in Nigeria	Nigeria	Panel regression system	There is a significant relationship between credit management and bank performance. Also, bank non-performing loan ratio has an indirect relationship with the performance of the banks. On the other hand, bank loan to deposit ratio has a direct effect on the performance of banks in Nigeria. However, bank leverage has no significant effect on the performance of Deposit Money Banks in Nigeria.
	Siddique, Khan and Khan	2022	The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks	South Asia (Pakistan and India)	Generalized method of moments (GMM)	Non-performing loans, cost-efficiency ratio and liquidity ratio negatively impact on financial performance, while capital adequacy ratio and average lending rate showed positive effects on financial performance.
	Ogundele, Ushie, Awodiran and Ibukun	2021	Credit risk management and financial performance of Deposit Money Banks: Evidence from Nigeria	Nigeria	Autoregressive Distributed Lag (ARDL) analytical technique	Non-performing loan as a percentage of total loan has a negative and significant effect on return on asset. It was also revealed that capital adequacy possesses a positive but insignificant effect on return on assets while liquidity ratio has a negative influence on return on asset.
	Catherine	2020	Credit risk management	Uganda	Correlation and regression	There is a positive and significant relationship

			and financial performance: A case of bank of Africa (U) Limited		analyses	between credit risk management components (risk diversification, credit risk control and credit appraisal) and financial performance in the Bank of Africa in Uganda.
	Munangi and Sibindi	2020	An empirical analysis of the impact of credit risk on the financial performance of South African banks	South Africa	Panel data methodologies, including pooled Ordinary Least Squares (OLS), fixed effects and random effects estimators,	Credit risk adversely affects financial performance, as higher levels of non-performing loans reduce profitability.
	Afolabi, Obamuyi and Egbetunde	2020	Credit risk and financial performance: Evidence from microfinance banks in Nigeria	Nigeria	Ordinary Least Square (OLS) multiple regression analytical approach.	Non-performing loans significantly reduce returns on assets of banks. Also, the study reported a significant positive correlation between total loans and advances (as a control variable) and returns on assets of microfinance banks in Nigeria.
	Noor, Das and Banik	2018	Impact of credit risk management on financial performance of banks: A study on major state - owned commercial banks in Bangladesh	Banglades h	OLS multiple regression, and granger causality approaches	Percentage of classified loans has a significant negative impact on return on investment, while its effect on return on asset and return on equity were minimal. Furthermore, the study identified short-run causality between percentage of classified loans and return on investment; and found evidence of co-integration among the variables. However, there was a long-term

						causality identified between percentage of classified loans and both return on equity and return on asset.

Source: Researcher's Desk (2026)

Gap in Literature

The novelty of this study lies in the choice of variable used to measure the financial performance of Deposit Money Banks (DMBs). While financial performance can be gauged using variables like return on asset (ROA), return on equity (ROE), return on investment (ROI) return on capital employed (ROCE) and the likes, this study settled for net interest margin (NIM) which is an essential matrix in measuring how a bank has fared over time in terms of interest income from borrowers of funds and interest paid to depositors of funds. Given that the operation of banks revolves around deposit acceptance and lending of funds, there is no better measure of financial performance than net interest margin.

Methodology

The quasi-experimental research design was adopted in this study. This is because the quasi experimental design amongst other things is used for measuring or ascertaining the impact of one variable on another or the relationship between one variable and another (Anyiwe, Idahosa & Ibeh, 2013). The research design of this study prompted the use of secondary data. These data were sourced from Central Bank of Nigeria (CBN) statistical bulletin (2024) and the World Bank

However, following the outcome of preliminary analysis, this study adopted the ARDL (Autoregressive Distributed Lag) analytical technique for data analysis. This is because of its numerous benefits over other techniques, which are: efficiency in small samples analysis, a combination of linear variables with diverse orders of integration of I(0) and I(1), and the fact that it is less prone to autocorrelation (Pesaran, Shin & Smith, 2001).

Model Specification

The relationship between credit risk management and financial performance of Deposit Money Banks (DMBs) can be expressed as:

$FPB = f(CRM)$ ..... (1)

$NIM = f(CAR, NPL, LDR, LQR)$ ..... (2)

$NIM = ¢_0 + ¢_1CAR + ¢_2NPL + ¢_3 LDR + ¢_4LQR + e$ ..... (3)

Where:

FPB	=	Financial Performance of Deposit Money Banks
CRM	=	Credit Risk Management
NIM	=	Net interest margin
CAR	=	Capital adequacy ratio
NPL	=	Non-performing loan ratio
LDR	=	Loan-to-deposit ratio
LQR	=	Liquidity ratio
$¢_0$	=	Constant term of the model
$¢_{1-4}$	=	Slopes of CAR, NPL, LDR and LQR

e = Error term of the model
f = Functional notation

A priori Expectations: $¢_1, ¢_3, ¢_4 > 0$; $¢_2 < 0$.

Data Presentation, Analysis and Interpretation of Results

Graphical Presentation of Data

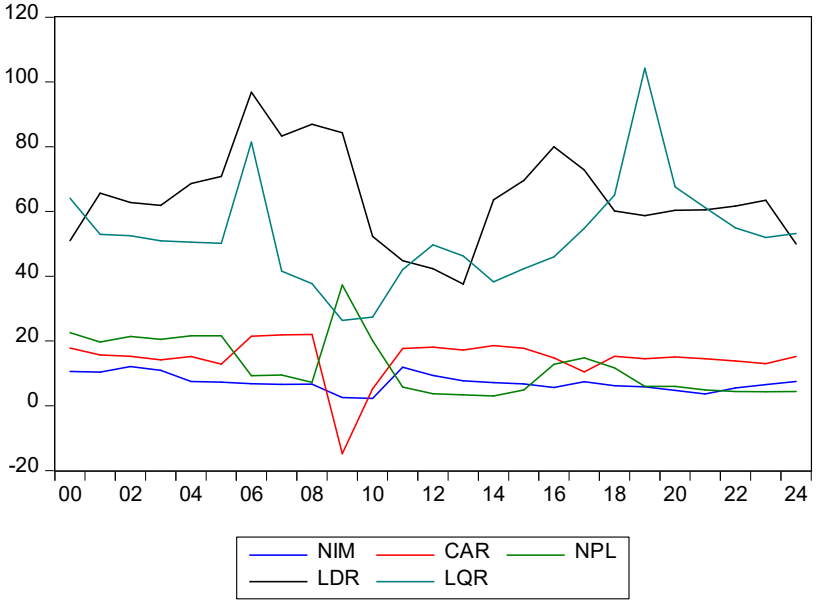


Fig. 4.1: Graphical Representation of Data on NIM, CAR, NPL, LDR and LQR

The graph above depicts movements of data on the aforementioned variables between 2000 and 2024. Basically**,** the graph shows that liquidity ratio (LQR) is the most volatile variable with a peak value of 104.2% in 2019, followed by loan-to-deposit ratio (LDR) that has a peak value of 79.95% in 2016. The variables net interest margin (NIM), capital adequacy ratio (CAR) and non-performing loans (NPL) are less volatile with their values ranging between -14.80% and 37.20%.

Descriptive Analysis

	NIM	CAR	NPL	LDR	LQR
Mean	7.180400	14.51440	12.03600	64.38960	52.52240
Median	6.830000	15.20000	9.300000	62.78000	50.90000
Maximum	12.12000	22.00000	37.30000	96.82000	104.2000
Minimum	2.240000	-14.80000	3.000000	37.56000	26.39000
Std. Dev.	2.598385	7.068091	8.844296	14.34248	16.18174
Skewness	0.171902	-2.971453	1.020633	0.285243	1.262510
Kurtosis	2.694198	13.13968	3.508267	2.785970	5.649509
Jarque-Bera	0.220538	143.8867	4.609484	0.386733	13.95377
Probability	0.895593	0.000000	0.099785	0.824180	0.000933
Sum	179.5100	362.8600	300.9000	1609.740	1313.060
Sum Sq. Dev.	162.0385	1198.990	1877.318	4936.962	6284.365
Observations	25	25	25	25	25

Source: E-Views 10 Output (2026)

The above table contains the descriptive characteristics of the data used for the study. Amongst others, it shows the mean, median, standard deviation, skewness and kurtosis of the variables: NIM, CAR, NPL, LDR and LQR. Accordingly, the means of these variables are roughly: 7.18%, 14.51%, 12.04%, 64.39% and 52.52% with the following corresponding standard deviations: 2.60%, 7.07%, 8.84%, 14.34% and 16.18%. The table puts the skewness of these variables at 0.171902, -2.971453, 1.020633, 0.285243 and 1.262510; which implies that the variable NIM, NPL, LDR and LQR are positively skewed (skewed to the right) while the variable CAR is negatively skewed (skewed to the left).

Also, it can be observed from the above descriptive table that the kurtoses of the variables are: 2.694198, 13.13968, 3.508267, 2.785970 and 5.649509; which imply that the variables CAR, NPL and LQR are leptokurtic as their values are greater than 3 while the variables NIM and LDR are platykurtic with kurtoses values of less than 3.

Accordingly, the variables NIM, NPL and LDR are normally distributed since their probability values of Jarque-Bera statistic (0.895593, 0.099785 and 0.824180) are greater than 0.05 (5% level of significance) while the variables CAR and LQR are not normally distributed because their probability values of Jarque-Bera statistic (0.000000 and 0.000933) are less than 0.05.

Unit Root (Stationarity) Test

Variables	P-P Statistic	5% Critical Value	Prob. Value	Level of Integration
NIM	-8.104442	-2.998064	0.0000	I(1)
CAR	-4.222673	-2.991878	0.0033	I(0)
NPL	-8.448217	-2.998064	0.0000	I(1)
LDR	-4.496986	-2.998064	0.0018	I(1)
LQR	-6.034290	-2.998064	0.0001	I(1)

Source: Extract of E-Views 10 Output (2026)

Adopting the Phillips-Perron (P-P) approach to unit root test, results indicated that the variables NIM, NPL, LDR and LQR were stationary at first difference I(1), while the variable CAR was stationary at level I(0) because at these points, the P-P test statistic values of these variables (-8.104442, -4.222673, -8.448217, -4.496986 and -6.034290) are greater than their 5% critical values of -2.998064, -2.991878, -2.998064, -2.998064 and -2.998064. Similarly, their probability (p) values of P-P statistic at these points (0.0000, 0.0033, 0.0000, 0.0018 and 0.0001) are lesser than 0.05 (5% level of significance). Given this mixed unit root result, the ARDL analytical approach was adopted for data analysis.

ARDL Short Run Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
NIM(-1)	0.077916	0.338556	0.230141	0.8222
CAR	0.273757	0.181222	1.510616	0.1591
CAR(-1)	0.149037	0.224450	0.664011	0.5204
CAR(-2)	-0.126303	0.208462	-0.605881	0.5569
NPL	0.185928	0.209121	0.889093	0.3930

NPL(-1)	0.028522	0.262753	0.108549	0.9155
NPL(-2)	-0.000312	0.192834	-0.001616	0.9987
LDR	-0.072560	0.051574	-1.406911	0.1871
LQR	0.003635	0.034406	0.105639	0.9178
LQR(-1)	-0.036329	0.038982	-0.931936	0.3714
LQR(-2)	-0.001715	0.029071	-0.058996	0.9540
C	6.199561	2.454887	2.525396	0.0282

R-squared	0.787471	Mean dependent var	6.892174
Adjusted R-squared	0.574942	S.D. dependent var	2.505744
S.E. of regression	1.633657	Akaike info criterion	4.125399
Sum squared resid	29.35719	Schwarz criterion	4.717830
Log likelihood	-35.44209	Hannan-Quinn criter.	4.274394
F-statistic	3.705238	Durbin-Watson stat	1.637711
Prob(F-statistic)	0.019914		

*Note: p-values and any subsequent tests do not account for model selection.

Source: E-Views 10 Output (2026)

Going by the above table, it follows that in the short run, the lagged value of net interest margin, NIM (-1), with a coefficient of 0.077916, has a positive effect on current year NIM. This implies that a unit increase in previous years NIM leads to about 0.08% increase in current year net interest margin of Nigerian banks and vice versa. The table further revealed that capital adequacy ratio (CAR), non-performing loan ratio (NPL) and liquidity ratio (LQR), with coefficients of 0.273757, 0.185928 and 0.003635 respectively, have positive effects on current year NIM of Deposit Money Banks in Nigeria while loan-to-deposit ratio (LDR), with regression coefficient of -0.072560, has a negative effect on current year net interest margin.

In essence, a percent increase in these liquidity management measures (capital adequacy ratio, non-performing loan ratio and liquidity ratio), guarantees about 0.27%, 0.19% and 0.004% increase in current period net interest margin (NIM) respectively while a percent increase loan-to-deposit ratio has a negative influence on current year NIM. From the table also, the coefficient of determination (R^2) is 0.787471 while the probability value of F-statistic is 0.019914. Since the probability value of F-statistic is less than the adopted 5% (0.05) adopted level of significance, it means that capital adequacy ratio, non-performing loan ratio, loan-to-deposit ratio and liquidity ratio have a joint significant effect of about 78.75% on current year NIM. This gives a good fit and shows that the model is significant, adequate and reliable.

Finally, since the value of Durbin Watson statistic (1.637711) falls between 1.5 and 2.5, there is no evidence of autocorrelation in the model. This suggests that the errors of the model for different observations are correlated.

Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic:	

			n=1000	
F-statistic	6.792492	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample			Finite Sample:	
Size	23		n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
			Finite Sample:	
			n=30	
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

Source: E-Views 10 Output (2026)

From the output the bounds test, the value of F-statistic is 6.792492 which is greater than the upper bound value at 5% level of significance, which is 3.49. Hence, it follows that there is cointegration between the variables of the model. In other words, there is a long run relationship between credit risk management (capital adequacy ratio, non-performing loan ratio, loan-to-deposit ratio and liquidity ratio) and financial performance (net interest margin) of Deposit Money Banks in Nigeria.

ARDL Long Run Analysis

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.199561	2.454887	2.525396	0.0282
NIM(-1)*	-0.922084	0.338556	-2.723576	0.0198
CAR(-1)	0.296491	0.278485	1.064657	0.3098
NPL(-1)	0.214138	0.118795	1.802580	0.0989
LDR**	-0.072560	0.051574	-1.406911	0.1871
LQR(-1)	-0.034410	0.035609	-0.966308	0.3547
D(CAR)	0.273757	0.181222	1.510616	0.1591
D(CAR(-1))	0.126303	0.208462	0.605881	0.5569
D(NPL)	0.185928	0.209121	0.889093	0.3930
D(NPL(-1))	0.000312	0.192834	0.001616	0.9987
D(LQR)	0.003635	0.034406	0.105639	0.9178
D(LQR(-1))	0.001715	0.029071	0.058996	0.9540

* p-value incompatible with t-Bounds distribution.

** Variable interpreted as Z = Z(-1) + D(Z).

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR	0.321544	0.204283	1.574010	0.1438
NPL	0.232233	0.076504	3.035563	0.0113
LDR	-0.078692	0.037843	-2.079414	0.0618
LQR	-0.037317	0.036544	-1.021164	0.3291
C	6.723421	2.935141	2.290664	0.0427

EC = NIM - (0.3215*CAR + 0.2322*NPL -0.0787*LDR -0.0373*LQR + 6.7234)

Source: E-Views 10 Output (2026)

The tail end of the above table contains long run estimates of the variables of the model. Firstly, it places the intercept or constant term of the model at 6.723421, which implies that the value of NIM when credit risk management measures (capital adequacy ratio, non-performing loan ratio, loan-to-deposit ratio and liquidity ratio) are not in place in the banks is about 6.72%. Secondly, the table shows that capital adequacy ratio (0.321544) and non-performing loan ratio (0.232233) have positive effects on net interest margin while loan-to-deposit ratio (-0.078692) and liquidity ratio (-0.037317) have negative effects on NIM.

Accordingly, a unit increase in capital adequacy ratio and non-performing loan ratio guarantees about 0.32% and 0.23% increase in NIM respectively and vice versa while a unit increase in loan-to-deposit ratio and liquidity ratio leads to about 0.08% and 0.04% decrease in net interest margin respectively and vice versa.

Finally, the table shows that the corresponding probability values of CAR, NPL, LDR and LQR are 0.1438, 0.0113, 0.0618 and 0.3291. Given that these values for CAR, LDR and LQR are greater than 0.05 (5% level of significance), it implies that capital adequacy ratio, loan-to-deposit ratio and liquidity ratio have insignificant effects on net interest margin in the long run while non-performing loan has a significant effect on NIM.

ECM Estimation

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CAR)	0.273757	0.123811	2.211088	0.0491
D(CAR(-1))	0.126303	0.119488	1.057040	0.3132
D(NPL)	0.185928	0.144977	1.282466	0.2260
D(NPL(-1))	0.000312	0.135584	0.002299	0.9982
D(LQR)	0.003635	0.023593	0.154050	0.8804

D(LQR(-1))	0.001715	0.019571	0.087634	0.9317
CointEq(-1)*	-0.922084	0.173685	-5.308937	0.0002

R-squared	0.804304	Mean dependent var	-0.125652
Adjusted R-squared	0.730917	S.D. dependent var	2.611286
S.E. of regression	1.354557	Akaike info criterion	3.690616
Sum squared resid	29.35719	Schwarz criterion	4.036201
Log likelihood	-35.44209	Hannan-Quinn criter.	3.777530
Durbin-Watson stat	1.637711		

* p-value incompatible with t-Bounds distribution.

Source: E-Views 10 Output (2026)

From the Error Correction Model (ECM), capital adequacy ratio, non-performing loan and liquidity ratio also have positive (0.273757, 0.185928 and 0.003635) effects on NIM. However, the cointegrating equation has the desired negative (-0.922084) sign and significant (0.0002) sign of less than 5% (0.05). This implies that in an event of any distortion to the established long-run equilibrium relationship between credit risk management and financial performance, the speed of re-convergence is about 92.21% per annum.

Test of Hypotheses

Variables	Parameter	t-Statistic Value	Probability Value
CAR	¢$_1$	1.510616	0.1591
NPL	¢$_2$	0.889093	0.3930
LDR	¢$_3$	-1.406911	0.1871
LQR	¢$_4$	-0.105639	0.9178

Source: Extract of E-Views 10 Output (2026)

Given that the probability values of CAR (0.1591), NPL (0.3930), LDR (0.1871) and LQR (0.9178) are greater than 5% (0.05), the following conclusion can be drawn:

1. Capital adequacy ratio has no significant effect on the net interest margin of Deposit Money Banks in Nigeria;
2. Non-performing loan ratio has insignificantly affected the net interest margin of Deposit Money Banks in Nigeria;
3. Loan-to-deposit ratio has an insignificant effect on the net interest margin of Deposit Money Banks in Nigeria; and
4. Liquidity ratio has not significantly affected the net interest margin of Deposit Money Banks in Nigeria.

Diagnostic Tests

Test	Criterion	Test Statistic Value	Probability Value
Multicollinearity	VIF	< 10	-
Normality	Jarque-Bera	1.332299	0.513683
Serial Correlation	Breusch-Godfrey	1.257279	0.3300
Heteroscedasticity	Breusch-Pagan-Godfrey	1.178686	0.3950

Source: Extract of E-Views 10 Output (2026)

From the above results, it can be adduced that the explanatory variables of the model are not correlated. That is, the explanatory variables did not affect one another.

Secondly, the errors of the model are normally distributed. Put differently, the errors of the model mirror a normal distribution as expected in order to authenticate the short and long estimates of the model.

Thirdly, there is no presence of serial correlation in the model. This corroborates the earlier autocorrelation result that the errors of the model are not correlated. Thus, the error of one observation does not affect that of another observation as expected.

Finally, there is absence of the malady called heteroscedasticity. This connotes that the variances of the errors of the model are homoscedastic; they are constant over time.

Discussion of Findings

Based on the number of objectives, questions and hypotheses that guided the study, four major findings emanated. The First is that capital adequacy ratio has a positive insignificant effect on the net interest margin of Deposit Money Banks in Nigeria. In other words, an increase in the capital adequacy ratio of banks induces the net interest margin of these banks. This outcome which aligns with the position expressed by the likes of (Abubakar, Hamza & Ibrahim, 2025; Catherine, 2020) agrees with the expectation of this study because increase in capital adequacy ratio will make banks to have enough capital to cover for credit default risk, which will boost confidence in the system and this will automatically translate to increase in the volume of loans and advances and subsequently increase the margin between lending and deposit rates (Harcourt, 2017). However, the insignificant outcome observed between capital adequacy ratio and NIM can be attributed to poor state of banks in Nigeria over the years which has led to a significant reduction in the number of DMBs in the Nigerian banking industry today.

Second, non-performing loan ratio has positively and insignificantly affected the net interest margin of Nigerian banks. This outcome disagrees with the a priori expectation ($¢_2 < 0$) because an increase in non-performing loan ratio reduces the volume of credit banks will extend to new customers for fear of further default and this inversely affects the interest income of banks and ultimately the financial returns of these banks. Law-Biaduo, Nnamdi and Fort-Edward (2024 corroborated this points when they reported that non-performing loan has a positive but insignificant effect on return on equity (ROE).

However, the poor reporting style of most banks which makes it difficult to have access to the actual financial position of banks in terms of the value and volume of non-performing loans, can be attributed to the insignificant effects of non-performing loans on the net interest margin of Deposit Money Banks in Nigeria (Imawuni & Ugha, 2021).

Third, loan-to-deposit ratio has a negative insignificant effect on the net interest margin of Deposit Money Banks in Nigeria. This implies that the more the loans extended by banks to customers, the lesser will be the net interest margin of these banks. This outcome runs contrary to the study's expectation of a positive and significant relationship between loan-to-deposit ratio and NIM of banks. This anomaly was also reported by Ogundele, Ushie, Awodiran and Ibukun (2021) and this suggests that the ratio of total bank loans to bank deposits is not reasonable enough to generate significant returns to banks. Again, it is possible that most of the loans extended by these banks are not performing at an expected rate. According to Singh, Gupta and Chaudhary (2024), another possible reason that can be adduced for this unwanted result is that

the deposit rates of banks are not attractive enough to attract the desired volume of deposits banks for onward lending.

Finally, liquidity ratio has positively and insignificantly affected the net interest margin of Deposit Money Banks in Nigeria. This outcome suggests that an increase in the liquidity ratio of banks leads to an increase in the net interest margin (NIM) of these banks (Law-Biaduo, Nnamdi & Fort-Edward, 2024). This outcome nonetheless was expected because the more liquid a bank gets, the higher the tendency for the bank to give out more loans for customers for more returns (Collakua & Aliu, 2021); but the insignificant part of the result may not be unconnected with the high rate of loan default in the Nigerian system which has forced so many banks to go under and some at best, merged with other banks or were acquired by bigger banks. In sum, high loan default risk adversely affects the liquidity status of banks and this has a proportional effect on their returns (Osaigboro, 2025).

Conclusion and Recommendations

Conclusion

In examining the cause-effect relationship between credit risk management and the financial performance of Deposit Money Banks in Nigeria, the quasi-experimental research design was adopted. This prompted the use of secondary data whereby capital adequacy ratio, non-performing loan ratio, loan-to-deposit ratio and liquidity ratio were indices used to measure credit risk management while net interest margin (NIM) was used as a proxy for financial performance. Adopting the ARDL (Autoregressive Distributed Lag) technique to data analysis and model estimation, it was revealed that in the short run, except for loan-to-deposit ratio, the other indicators of credit risk management have positive insignificant effects on NIM while in the long run, only non-performing loan ratio showed a significant effect.

On this backdrop, it follows that credit risk management has an insignificant effect on the financial performance of Deposit Money Banks in Nigeria.

Recommendations

1. Deposit Money Banks should focus on optimizing their capital structure in order to minimize costs and maximize returns. This can be achieved by exploring alternative funding sources, such as issuing bonds or hybrid securities, to reduce reliance on expensive deposits.
2. There is need for banks to enhance their credit risk assessment and monitoring processes to reduce non-performing loans. These banks can also consider outsourcing non-performing loan recovery to specialized agencies or using technology-driven solutions to improve recovery rate.
3. Banks should aim for an optimal loan-to-deposit ratio that balances profitability and liquidity. On this front, they can focus on growing their deposit base, diversifying their loan portfolio, and exploring alternative revenue streams to reduce dependence on interest income.
4. It is imperative that Deposit Money Banks should maintain a prudent liquidity ratio to mitigate potential shocks. Thus, they can invest in high-quality liquid assets, diversify their funding sources, and develop contingency funding plans to ensure they can meet their short-term obligations.

Contribution to Knowledge

This study was initiated following the none use of net interest margin as a measure of financial performance of Deposit Money Banks in terms of credit risk management; and the

existing debate between scholars on the relationship between these variables. The researcher observed that a preponderance of studies exist on credit risk management and financial performance but little or nothing has been done in the area of credit risk management and net interest margin. This study therefore contributes to knowledge by providing support to previous studies' findings which say that credit risk management has a negative, insignificant and long run relationships with financial performance of banks.

Furthermore, the study has provided bank management a short-run model for enhancing net interest margin with respect to capital adequacy ratio, non-performing loan ratio, loan-deposit ratio and liquidity ratio. Finally, this study has provided and enriched the literature on the relationship between credit risk management and financial performance.

Limitations of the Study

The first pronounced limitation of this study was data related as the Central Bank of Nigeria is yet to release it statistical bulletin for 2024. This made it difficult to get data on some of the variables for 2024. On this front, the researcher resorted to World Bank (online) data. The next remarkable limitation was associated with finance the study actually gulped more financial resources than was anticipated. This forced the researcher to resort to external sources of finance. In all, the study was eventually executed as the above identified limitations did not affect the quality of work that was done.

References

Abubakar, N., Hamza, H. D., Ibrahim, U. Y. (2025). Effect of credit risk management on financial performance of listed Deposit Money Banks in Nigeria. *Kashere Journal of Management Sciences, 8*(2), 82-95.

Adesina, T., Nasieku, T., & Oluoch, O. (2020). Market risk hedging strategy and financial performance of Nigeria listed banks. *European Journal of Business and Management, 12*(15), 100-106.

Afolabi, T. S., Obamuyi, T. M., & Egbetunde, T. (2020). Credit risk and financial performance: Evidence from microfinance banks in Nigeria. *IOSR Journal of Economics and Finance, 11*(1), 8-15.

Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *Quarterly Journal of Economics, 84*(3), 488–500.

Amijaya, R. N. F., & Alaika, R. (2023). Does financial risk matter for financial performance in Sharia banks. *Jurnal Ilmu Ekonomi Terapan, 8*(1), 24-40.

Anyiwe, M. A., Idahosa, D. O., & Ibeh, S. E. (2013). *Basic research methods in social sciences*. Mindex Press.

Catherine, N. (2020). Credit risk management and financial performance: A case of bank of Africa (U) Limited. *Open Journal of Business and Management, 8,* 30-38.

CBN (2024). Central Bank of Nigeria statistical bulletin. https://www.cbn.gov.ng/documents/Statbulletin.asp

Çollakua, B., & Aliu, M. (2021). Impact of non-performing loans on bank's profitability: Empirical evidence from commercial banks in Kosovo. *Journal of Accounting, Finance and Auditing Studies, 7*(3), 226-242.

Falade, S. S., Nyor, T., Yahaya, A. O., & Agbi, S. E. (2024). Risks management and financial performance of Deposit Money Banks in Nigeria. *International Journal of Advanced Multidisciplinary Research and Studies, 4*(6), 1018-1027.

Harcourt, E. E. (2017). Credit risk management and performance of deposit money banks in Nigeria. *International Journal of Managerial Studies and Research, 5*, 47–56.

Imawuni, C. K., & Ugha, L. O. (2021). *Essentials of bank management: Practical Approach.* Wildfire Publishers Limited.

Kwashie, A. A., Baidoo, S. T., & Ayesu, E. K. (2022). Investigating the impact of credit risk on financial performance of commercial banks in Ghana. *Cogent Economics & Finance, 10*(1), 2109281.

Law-Biaduo, I. E., Nnamdi, K. C., & Fort-Edward, U. U. (2024). Credit risk management and performance of selected Deposit Money Banks in Nigeria. *Asian Journal of Economics, Business and Accounting, 24*(12), 277-87. https://doi.org/10.9734/ajeba/2024/v24i121608.

Munangi, E., & Sibindi, A. B. (2020). An empirical analysis of the impact of credit risk on the financial performance of South African banks. *Academy of Accounting and Financial Studies Journal, 24*(3), 1-15.

Natufe, O. K., & Evbayiro-Osagie, E. I. (2023). Credit risk management and the financial performance of Deposit Money Banks: Some new evidence. *Journal of Risk and Financial Management, 16*(302). Retrieved from https://doi.org/10.3390/jrfm16070302

Noor, A. H., Das, K. A., & Banik, S. R. (2018). Impact of credit risk management on financial performance of banks: A study on major state - owned commercial banks in Bangladesh. *ICMAB Journal, 12*(1), 23-36.

Nwaguru, W. E., Obainoke, F. E., & Anukam, S. C. (2025). Interest rate deregulation and non-performing loans in Nigeria. *Journal of Philosophy, Policy and Strategic Studies, 1*(5), 65-79.

Ogundele, A. T., Ushie, P. O., Awodiran, M. A., & Ibukun, F. O. (2021). Credit risk management and financial performance of Deposit Money Banks: Evidence from Nigeria. *International Journal of Economics and Management Studies, 8*(10), 141-147. https://doi.org/10.14445/23939125/IJEMS-V8I10P118

Omorokunwa, O. G., & Ogbeide, E. A. (2022). *Credit risk management and deposit money bank performance in Nigeria. In Proceedings of the 7th Annual International Academic Conference on Accounting and Finance: Disruptive Technology- Accounting Practices, Financial and Sustainability Reporting* (pp. 1-8). ICAN

Osaigbovo, I. (2025). Credit risk management and financial performance of Deposit Money Banks in Nigeria. *African Development Finance Journal, 8*(10), 48-78. Retrieved from http://journals.uonbi.ac.ke/index.php/adfj

Pesaran, M., Shin, Y., & Smith, R. (2001). Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics,* 16(3), 289-326.

Philip, M. (2021). Factors affecting business success of small & medium enterprises (SMEs). *Amity Global Business Review, 6*(1), 118–136. https://doi.org/10.5539/ass.v7n5p180.

Siddique, A., Khan, M. A., & Khan, Z. (2022). The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks. *Asian Journal of Accounting Research,* 7(2), 182-194.

Singh, R., Gupta, C. P., & Chaudhary, P. (2024). Defining return on assets (ROA) in empirical corporate finance research: A critical review. *Empirical Economics Letters, 23*(Special Issue 1), 1–20. Retrieved from https://doi.org/10.5281/zenodo.10901886

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review, 71*(3), 393–410.

Ugwu, P., & Okwo, I. M. (2025). Effect of credit risk management on the financial performance of Deposit Money Banks in Nigeria. *European Journal of Accounting, Auditing and Finance Research, 13*(9), 83-95. https://doi.org/10.37745/ejaafr.2013/vol13n98395