Mikailalsys Journal of Mathematics and Statistics

e-ISSN : 3030-816X
p-ISSN : 3030-8399

Index : Harvard, Boston, Sydney University, Dimensions, Lens, Scilit, Semantic, Google, etc

https://doi.org/10.58578/MJMS.v4i2.9315

Effect of Credit Management on the Financial Performance of Deposit Money Banks in Nigeria

Adebayo Abiodun Oluwafemi, Adeusi Stephen Oluwafemi, Ayorinde Babatunde Femi
Ekiti State University, Ado-Ekiti, Nigeria
abey4united@gmail.com; stephen.adeusi@eksu.edu.ng

Article Info:

Submitted:	Revised:	Accepted:	Published:
Feb 13, 2026	May 11, 2026	May 23, 2026	May 28, 2026

Abstract

This study investigated the effect of credit management on the financial performance of deposit money banks in Nigeria over a 25-year period from 2000 to 2024. Credit management was proxied by the non-performing loan ratio, loan-to-deposit ratio, and capital adequacy ratio, while bank performance was measured using return on equity (ROE). The study used secondary data and employed the Johansen cointegration technique to examine the existence of a long-run relationship among the variables. The results indicate the presence of one cointegrating equation at the 5% significance level, confirming a long-run equilibrium relationship. An error correction model (ECM) was subsequently estimated to capture short-run dynamics and long-run adjustment. The ECM results reveal a statistically significant and correctly signed error correction term, indicating that approximately 1.13% of short-run disequilibrium is corrected annually. Furthermore, the findings show that credit risk management variables exert negative but statistically insignificant effects on ROE. Despite the individual insignificance of the explanatory variables, the overall model is statistically significant and free from serial autocorrelation. The study concludes that credit management indicators exert a weak influence on the profitability of deposit money banks in Nigeria. These findings contribute

MJMS Journal is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License

to banking and financial performance literature by providing empirical evidence on the limited explanatory role of selected credit management indicators in determining profitability and offer practical implications for bank managers and regulators in strengthening credit risk assessment, loan portfolio quality, and capital management practices.

Keywords: Capital Adequacy Ratio; Credit Management; Deposit Money Banks; Non-Performing Loans; Return on Equity

Introduction

The banking sector is crucial for country's economic development as it mobilizes savings, allocates credit, and facilitates financial intermediation. Deposit Money Banks (DMBs) are key players in this process by providing credit to individuals, businesses, and the government, thereby fostering investment, job creation, and economic growth (Simatele, 2021). In Nigeria, the banking sector's effectiveness is significantly influenced by how well banks manage their credit portfolios, with lending activities being a major source of their income (Ogujiuba et al., 2004; Adebayo & Oladapo, 2022).

Credit management involves the policies and procedures banks use to ensure that loans are awarded to reliable borrowers and collected promptly. This process includes credit assessment, monitoring, control, and recovery strategies aimed at reducing the risk of defaults (Caouette et al., 2011). However, lending also exposes banks to credit risk the chance that borrowers may not fulfill their repayment obligations. Ineffective credit management can lead to an increase in non-performing loans (NPLs), decreased profitability, liquidity issues, and in extreme situations, bank distress or failure (Naili & Lahrichi, 2022).

The Nigerian banking sector has faced significant issues with credit risk management. The 2009 banking crisis highlighted serious flaws in credit assessment and monitoring, where excessive risk-taking and weak governance resulted in a dramatic rise in NPLs throughout the industry (Sanusi, 2010). Despite various reforms initiated by the Central Bank of Nigeria (CBN), such as bank recapitalization, stricter guidelines, and improved risk management frameworks, credit risk continues to be a pressing issue. Frequent increases in NPL ratios have adversely impacted the financial health and stability

of DMBs, particularly during periods of macroeconomic instability characterized by fluctuations in oil prices, inflation, and exchange rates (CBN, 2022).

Research on the link between credit management and the financial performance of banks in Nigeria shows varying results. Some studies indicate that high NPL ratios negatively affect profitability, while sufficient capital and effective loan loss provisions enhance financial performance (Yakubu, 2018; Olusegun & Odetayo, 2021). On the other hand, Abiodun and Alade (2020) found no significant connection between credit risk and financial performance, suggesting that factors like liquidity risk might be more impactful. These inconsistent findings underscore the necessity for further empirical research on key credit management indicators.

In this context, the present study investigates how credit management influences the financial performance of Deposit Money Banks in Nigeria, specifically looking at the non-performing loan ratio, capital adequacy ratio, and loan-to-deposit ratio. The aim is to contribute to existing literature and offer insights that can improve credit management practices, boost bank profitability, and enhance the stability of the Nigerian banking sector.

Literature Review

Conceptual Clarifications

Concept of Non-Performing Loan

A Non-Performing Loan (NPL) refers to a credit facility on which the borrower has failed to meet contractual repayment obligations for a specified period. Generally, a loan is classified as non-performing when interest and/or principal repayments are overdue for 90 days or more, or when there is evidence that the borrower is unlikely to repay the loan in full without the realization of collateral (International Monetary Fund [IMF], 2019).

Non-performing loans are a key indicator of credit risk and asset quality in the banking sector. High levels of NPLs signal weaknesses in credit appraisal, monitoring, and recovery processes, and they reflect deteriorating borrower creditworthiness (Ghosh, 2015). When loans become non-performing, banks are required to make provisions for expected losses, which reduces earnings, erodes capital, and constrains their ability to extend new credit to the economy (Boudriga, Taktak, & Jellouli, 2009).

In the Nigerian banking context, the Central Bank of Nigeria (CBN) defines non-performing loans as credit facilities where principal or interest remains unpaid for more than 90 days, in line with international best practices (CBN, 2022). Persistent growth in NPLs has been a major challenge for Nigerian Deposit Money Banks, particularly during periods of macroeconomic instability, such as economic recessions, exchange rate volatility, and declines in oil prices. Elevated NPL ratios weaken bank liquidity and profitability, thereby threatening financial stability (Sanusi, 2010).

The causes of non-performing loans are both bank-specific and macroeconomic. Bank-specific factors include poor credit appraisal, weak risk management practices, insider-related lending, and inadequate loan monitoring. Macroeconomic factors such as inflation, unemployment, economic downturns, and policy instability also contribute significantly to the incidence of NPLs (Makri, Tsagkanos, & Bellas, 2014). Consequently, effective management of non-performing loans is critical for maintaining bank performance and ensuring the soundness of the financial system.

Concept of Loan-to-Deposit Ratio

The Loan-to-Deposit Ratio (LDR) is one a key financial indicator used to assess a bank's liquidity position and lending behavior. It measures the proportion of a bank's total loans and advances relative to its total customer deposits, indicating the extent to which deposits are utilized for credit creation. The ratio is typically expressed as a percentage and calculated as total loans divided by total deposits (Rose & Hudgins, 2013).

The LDR serves as an important measure of liquidity risk and operational efficiency in the banking sector. A high loan-to-deposit ratio suggests that a bank has aggressively converted deposits into loans, which may enhance profitability but also increase liquidity risk, as fewer liquid assets are available to meet short-term obligations. Conversely, a low LDR indicates a conservative lending strategy, implying higher liquidity but potentially lower income from interest-earning assets (Ghosh, 2015).

In the Nigerian banking system, the Loan-to-Deposit Ratio has become a major policy tool used by the Central Bank of Nigeria (CBN) to stimulate credit growth and support economic activity. In 2019, the CBN introduced a minimum LDR requirement for Deposit Money Banks to encourage lending to the real sector. Banks that fail to meet the prescribed threshold are penalized through additional cash reserve requirements, highlighting the regulatory importance of the ratio (CBN, 2020).

Empirical studies indicate that the Loan-to-Deposit Ratio has a significant relationship with bank performance. While moderate LDR levels are associated with improved profitability due to increased interest income, excessively high ratios may lead to increased exposure to credit risk and non-performing loans, negatively affecting financial performance (Ongore & Kusa, 2013). Therefore, maintaining an optimal loan-to-deposit ratio is essential for balancing profitability, liquidity, and risk in banking operations.

Concept of Capital Adequacy Ratio

The Capital Adequacy Ratio (CAR) is a key prudential measure used to assess the financial strength and stability of banks. It represents the proportion of a bank's capital to its risk-weighted assets and serves as a buffer against potential losses arising from credit, market, and operational risks. The primary objective of CAR is to ensure that banks are able to absorb unexpected losses and protect depositors, thereby promoting confidence and stability in the financial system (Basel Committee on Banking Supervision [BCBS], 2011).

Capital adequacy is expressed as the ratio of a bank's regulatory capital comprising Tier 1 (core) and Tier 2 (supplementary) capital to its total risk-weighted assets. A higher CAR indicates a stronger capital position and a greater capacity to withstand financial shocks, while a low CAR exposes banks to solvency risk and increases the likelihood of financial distress (Rose & Hudgins, 2013). Consequently, regulatory authorities prescribe minimum capital adequacy standards to limit excessive risk-taking by banks.

In Nigeria, the Central Bank of Nigeria (CBN) adopts the Basel III framework in setting capital adequacy requirements for Deposit Money Banks. Banks are required to maintain a minimum CAR of 10% for national banks and 15% for banks with international authorization (CBN, 2022). Compliance with these requirements is critical, as adequate capitalization enhances banks' ability to expand lending, absorb credit losses, and improve overall financial performance.

Empirical evidence suggests that capital adequacy has a significant influence on bank performance. Well-capitalized banks are generally more resilient to economic downturns and better positioned to manage credit risk, which positively affects profitability and stability. However, excessively high capital levels may constrain lending and reduce returns on equity, indicating the need for an optimal balance between risk and capital (Yakubu, 2018; Berger & Bouwman, 2013).

Concept of Return on Equity

Return on Equity (ROE) is a key profitability ratio that measures a firm's ability to generate net income from shareholders' equity. It indicates how effectively management utilizes owners' funds to produce profits and is widely used by investors, regulators, and analysts to evaluate financial performance, particularly in the banking sector (Brigham & Ehrhardt, 2017). ROE is calculated by dividing net profit after tax by total shareholders' equity.

In the banking industry, ROE is especially important because banks operate with high leverage and rely heavily on equity capital as a buffer against financial risks. A higher ROE reflects efficient use of equity capital and strong managerial performance, while a declining ROE may signal reduced profitability, increased risk exposure, or inefficient capital utilization (Saunders, Cornett, & McGraw, 2019). However, excessively high ROE may also result from increased leverage, which can expose banks to higher financial risk.

In the context of Deposit Money Banks, ROE is closely linked to credit management practices. Poor credit management, manifested through rising non-performing loans, increases loan loss provisions and reduces net income, thereby lowering ROE. Conversely, effective credit risk management enhances asset quality and profitability, leading to improved returns to shareholders (Ghosh, 2015). Regulators therefore monitor ROE alongside capital adequacy and asset quality indicators to assess the overall financial health of banks.

Empirical studies have shown that ROE is significantly influenced by factors such as capital adequacy, asset quality, liquidity, and macroeconomic conditions. Well-capitalized banks with strong credit portfolios tend to exhibit higher and more stable ROE, supporting the argument that sound risk management practices are essential for sustainable profitability (Berger & Bouwman, 2013; Yakubu, 2018).

Theoretical Underpinning

This study is underpinning by Modern Portfolio Theory (MPT), pioneered by Markowitz (1952), provides a formal framework for analyzing the risk–return trade-off of a portfolio by demonstrating that overall portfolio risk depends not only on the riskiness of individual assets but also on the covariance structure among them. The theory posits that

rational economic agents can construct an *efficient portfolio* that minimizes variance for a given expected return, or equivalently, maximizes expected return for a given level of risk, through optimal diversification.

Within the banking context, MPT is particularly relevant to loan portfolio management, where loans represent the dominant earning assets and primary source of credit risk. Deposit money banks are exposed to idiosyncratic and systematic credit risks arising from borrower defaults, sectorial shocks, and macroeconomic volatility. By diversifying loan exposures across industries, geographic regions, borrower classes, and maturity profiles, banks can reduce the variance of portfolio returns without necessarily sacrificing expected profitability.

From a credit management perspective, MPT provides a theoretical justification for prudent loan allocation, risk-based pricing, and portfolio rebalancing as mechanisms for minimizing non-performing loans (NPLs) and stabilizing earnings. A highly concentrated loan portfolio increases the covariance of defaults, thereby amplifying credit risk and adversely affecting bank performance indicators such as Return on Equity (ROE). Conversely, effective diversification weakens default correlation, enhances asset quality, and improves risk-adjusted returns.

As a supporting theory, MPT underpins the empirical examination of how credit risk variables influence financial performance by explaining the transmission mechanism through which portfolio composition affects profitability. In the Nigerian banking environment characterized by sectorial concentration risks and macroeconomic shocks inefficient loan portfolio diversification can exacerbate credit losses, erode capital buffers, and impair shareholders' returns. Hence, MPT complements Credit Risk Theory by offering a portfolio-level explanation of the relationship between credit management practices and the financial performance of deposit money banks.

Empirical Evidences on Credit Management and Banks Performance

From recent studies, Okere et al. (2024) observed the impact of the capital adequacy ratio and loan loss provisions on the return on assets of Guaranty Trust Bank, United Bank for Africa, and Zenith Bank from 2007 to 2022, utilizing panel least squares regression and Granger causality tests. The findings indicated that the capital adequacy ratio adversely impacts the return on assets of deposit money banks in Nigeria, while loan loss

provisions also have a detrimental influence on the return on assets of these banks. Their study concludes that a decrease in the capital adequacy ratio and loan loss provisions has a beneficial effect on the return on assets of deposit money institutions. Also, Scott et al. (2024) examine the importance of credit risk mitigation strategies in banks and other financial institutions. The authors showed the credit risk mitigation strategies include diversification of credit portfolios, collateralization of loans, credit derivatives, and credit insurance.

Landry et al. (2024) look at the impact of credit risk management on the financial profitability of the Congo's commercial banks. The authors used commercial banks in the Democratic Republic of the Congo as a study population and, as a sample, the four largest banks from 2009 to 2016. Generalized Least Squares regression follows the fixed effects model specification on a panel. Findings from their analysis show that the capital adequacy ratio has statistically significant effect on commercial banks performance in Democratic Republic of Congo, also, NPLR shows a statistically significant effect on commercial banks, but they found a negative relationship between NPLR and ROE and ROA; while a positive relationship exist between the CAR and ROE and ROA.

Prominent scholars such as, Dauda and Terzungwe investigated nine Nigerian banks between 2004 and 2016 to determine how credit risk affected shareholder value at Deposit Money Banks in 2018. They observed that loan loss provisions and non-performing loans affected market capitalisation and shareholder value using panel multiple regression and GLS estimators. Size enhances shareholder value, whereas capital adequacy ratio decreases it, according to research.

Abubakar et al. (2019) examined how credit risk management affects the financial performance of ten NSE-listed Deposit Money Banks (DBMs) between 2010 and 2016. The fixed effects panel regression analysis showed that CAR, ROA, and LDR enhanced ROE more than NPLR, CIR, or LQR. Dauda and Terzungwe (2018) found that CAR and NPLR affected ROE, however additional research disproves this. Different performance metrics may provide different results. Market value and book value determined shareholder value in Dauda and Terzungwe (2018) and Abubakar et al. (2019).

Nwanna (2019) and Harcourt (2017) established the impact of credit risk management on Nigerian deposit money institutions from 1998 to 2016 and 1989 to 2014, respectively, using the over-parameterized and parsimonious Error Correction Model

(ECM) and Granger causality analysis Performance was measured by ROE and ROA. Credit risk was calculated using the ratio of loans to deposits, non-performing loans to total loans, and total loans and advances to total assets. Only this year's NLTL with its single lag period adversely influenced ROA statistically, according to the few ECMs that employed ROA as the dependent variable. Return on equity (ROE) was the dependent variable in minimalist ECMs. The one-lag period equivalent decreased ROE, whereas the current-period TLTA boosted it. Nwanna (2019), Harcourt (2017), and Abubakar et al. (2019) found no ROE impact from NLTL. Akinselure and Akinola (2019) studied the credit risk management profitability of numerous Nigerian deposit money institutions from 2003 to 2018. Using multiple regression models, the researchers found a strong association between credit risk management and profitability using loan losses ratio and return on assets and equity.

Jonathan and Michael (2018) studied Nigerian banks' credit risk management and performance from 2010 to 2016 using Fidelity Bank Nigeria PLC. Risk factors including total loans to deposits, capital adequacy ratio, and percentage of non-performing loans to total loans did not significantly affect ROE and ROA. Profitability decreases with a smaller percentage of non-performing loans to total loans (Kolapo et al., 2012). Nwude and Okeke (2018) examined how credit risk management affected the five largest Nigerian banks by asset base between 2000 and 2014. In their conventional least squares regression models, non-performing loan risk increased return on assets and equity. Size was statistically associated with ROA and ROE using the natural logarithm of total assets.

Kajola et al. (2018) examined credit management in 10 publicly listed Nigerian deposit money institutions. ROA and ROE were used to measure bank performance from 2005 to 2016. For credit risk management, researchers employed NPLLR, NPLDR, and CAR. Credit risk management significantly influenced ROA and ROE.

Adegbie and Otitolaiye (2020) analysed Nigerian DMB financial performance and credit risk from 2006 to 2018. Return on invested capital (ROCE) showed financial success, whereas capital adequacy ratio, loan loss provisions, loan-to-deposit ratio, and non-performing loans showed credit risk management. The control variable was bank size. According to their generalised least squares model with random components, credit risk management boosted ROCE while non-performing loans dramatically lowered it. Company size affects ROCE more than credit risk management.

Methods

Research Design, Model Specification and Estimation Technique

This study adopts an ex-post facto research design because it allows the researcher to explain events that have already occurred using existing data. The study adapts the model developed by Ifeanyiwa et al. (2024), who examined how credit risk management influences the performance of Nigerian listed deposit money banks. Therefore, with modifications, the model used in the study is presented as:

$$ROE = f(\text{NPL, LDR, CAR})$$

Where: ROE = Return on equity, NPL = Non-performing loan, LDR = Loan to deposit ratio, CAR = Capital Adequacy ratio. Data were analyzed using regression techniques, specifically the Johansen cointegration test and the Error Correction Model (ECM) to evaluate both the long-run and short-run relationships among the variables. However, prior to these tests, the Augmented Dickey–Fuller (ADF) unit root test was conducted to determine the level of stationarity of the series. The long-run model can be transformed into an Error Correction Model (ECM), which integrates both the short-run and long-run dynamics of the model. An ECM is specified in the following form:

$$ROE_t = \beta_0 + \beta_1 NPL_{t-1} + \beta_2 LDR_{t-1} + \beta_3 CAR_{t-1} + U_t + ECM_{t-1} + \Sigma t$$

where: ECM_{t-1} = Error correction term, t_{-1} shows the variables were lagged by one period, Σ_t = white noise residual

Result and Discussion

Table 1. Augumented Dicky-fuller (ADF) Unit Root Test

Variables	ADF test Statistic Value	Critical Value@5%	P-Value	Order of Integration	Decision
ROE	-5.764949	-3.004861	0.0001	I(1)	Stationary
NPL	-3.792751	-3.004861	0.0095	I(1)	Stationary
LDR	-3.492213	-3.004861	0.0182	I(1)	Stationary
CAR	-3.428941	-3.004861	0.0207	I(1)	Stationary

Source: E-view, 9.0 Output, 2025

The summary of the ADF unit root test results presented in Table 1 reveals that all the variables under investigation ROE, NPL, LDR, and CAR become stationary after first differencing, indicating that they are integrated of order one, I(1). This suggests the existence of a possible long-run relationship among the variables, thereby justifying the

need to conduct a cointegration test. Evidence of stationarity at first difference is shown by the respective ADF test statistics, which are greater in absolute terms than the 5% critical values. Furthermore, the p-values for all variables are less than 0.05, confirming stationarity at the first difference at the 5% significance level (i.e., 95% confidence level). Consequently, the study proceeded to examine the long-run association among the variables using the Johansen cointegration test.

Johansen Co-Integration

In the Johansen Co-integration test, the Trace Statistics and Max-Eigen Statistics were compared with 5% critical values in order to determine the number of cointegrating vectors in the model.

Table 2. Trace Cointegrated Rank Test

Hypothesized No of CE(s)	Eigenvalue	Trace Statistic	0.05 critical value	Prob*
None*	0.655368	48.56356	47.85613	0.0428
At most 1	0.539529	25.12746	29.79707	0.1569
At most 2	0.181587	8.066323	15.49471	0.4583
At most 3	0.153176	3.657772	3.841466	0.0558

Trace test indicates 1cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 3. Maximum Eigenvalue Cointegration Rank Test

Hypothesized No of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 critical value	Prob*
None*	0.655368	23.43610	27.58434	0.1556
At most 1	0.539529	17.06114	21.13162	0.1691
At most 2	0.181587	4.408550	14.26460	0.8139
At most 3	0.153176	3.657772	3.841466	0.0508

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values significance.

Parsimonious Model

Table 4. Parsimonious Error Correction Model Results

Variables	Coefficient	Std.Error	t-Statistic	Prob.
D(ROE(-1))	0.327206	0.264397	1.237557	0.2362
D(NPLR(2))	-0.218942	0.778193	-0.281347	0.7826
D(LLDR(2))	-0.525652	1.065864	-0.493170	0.6295
D(CAR(2))	-3.700031	2.868092	-1.290057	0.2179
ECM(-1)	-1.130012	0.358111	-3.155475	0.0070

Variables	Coefficient	Std.Error	t-Statistic	Prob.
C	0.024529	0.093408	0.262602	0.7967
R-squrared	0.488412			
Adjusted R-squared	0.305702			
F-statistic	2.673155			
Prob. (F-statistic)	0.067295			
Durbin-Watson stat	1.968337			

Source: Author's Computation, (2025)

Table 2 and 3 present the results of the unrestricted cointegration rank test using both the Trace and Maximum Eigenvalue statistics. The findings indicate the presence of at least one cointegrating equation at the 5% significance level. This suggests that a long-run relationship exists among the variables in the model. Based on this outcome, the Error Correction Mechanism (ECM) was applied to capture both the short-run adjustments and the long-run equilibrium relationship among the variables.

The ECM results reported in Table 4 provide the estimated coefficients together with their standard errors, t-statistics, and probability values. These statistics were used to evaluate the reliability and predictive strength of the model. The estimated error correction coefficient shows a feedback adjustment from the previous period's disequilibrium to the current period. Specifically, the coefficient indicates that approximately 1.13% of the deviation from the long-run equilibrium in the previous period is corrected annually, confirming the existence of a stable long-run relationship among the variables.

The empirical findings reveal that non-performing loans, loan-to-deposit ratio, and capital adequacy ratio exert negative and statistically insignificant effects on the return on equity (ROE) of deposit money banks in Nigeria at the 5% significance level. This implies that increases in these credit risk indicators do not significantly improve the profitability of banks within the period under study. Specifically, a one-percent increase in non-performing loans, loan-to-deposit ratio, and capital adequacy ratio leads to an estimated decline of 2.1%, 5.2%, and 3.7% respectively in ROE, although the effects remain statistically insignificant.

The overall regression model, however, is statistically significant as indicated by the F-statistic value of 2.673155. The adjusted R-square value of approximately 30% shows that the explanatory variables jointly account for about thirty percent of the variation in return on equity. Furthermore, the Durbin-Watson statistic of 1.968337, which is close to

the benchmark value of 2, indicates the absence of serial autocorrelation among the residuals, confirming that the model is reliable for interpretation.

Conclusion

This study investigated the impact of credit management indicators namely non-performing loan ratio, loan-to-deposit ratio, and capital adequacy ratio on the financial performance of deposit money banks in Nigeria, using return on equity (ROE) as the performance indicator. The Johansen cointegration test confirmed the presence of a long-run equilibrium relationship among the variables at the 5% significance level, which justified the use of the Error Correction Model (ECM).

The ECM results show that the error correction term is negative and statistically significant, indicating that deviations from long-run equilibrium are gradually corrected over time. In particular, the coefficient suggests that about 1.13% of short-run disequilibrium in ROE is adjusted annually, demonstrating the stability of the model.

Further analysis indicates that non-performing loans, loan-to-deposit ratio, and capital adequacy ratio have negative but statistically insignificant effects on ROE of deposit money banks in Nigeria. This suggests that increases in these credit indicators may reduce profitability, although their influence is not strong enough to be statistically significant during the study period. Despite this, the model as a whole remains significant, implying that the combined effect of the explanatory variables contributes to explaining changes in bank performance.

The result on non-performing loans is inconsistent with the findings of Kajola et al. (2018), who reported a positive relationship between credit management and the financial performance of deposit money banks in Nigeria. Similarly, the loan-to-deposit ratio was found to have a negative and insignificant effect on return on equity (ROE) in Nigeria. This finding contradicts the empirical evidence of Adegbie and Otitolaiye (2020), who established that the loan-to-deposit ratio significantly influences ROE in Nigeria. Furthermore, the capital adequacy ratio was observed to have an insignificant effect on return on assets (ROA) in Nigeria. This result is inconsistent with the study by Jonathan and Michael (2018), which revealed that capital adequacy significantly contributes to ROA in Nigeria.

In conclusion, the study establishes that while credit risk management variables are relevant in explaining bank performance, their impact on return on equity in Nigeria remains weak and insignificant. This suggests the need for deposit money banks to strengthen their credit appraisal, monitoring, and capital management strategies to enhance profitability and ensure sustainable financial performance.

References

Abdel-Basset, M., Gunasekaran, M., Mohamed, M., & Chilamkurti, N. (2019). A framework for risk assessment, management and evaluation: Economic tool for quantifying risks in supply chain. *Future Generation Computer Systems, 90*, 489–502.

Abiodun, B. Y., & Alade, A. A. (2020). Credit risk management and financial performance of deposit money banks in Nigeria. *Journal of Banking and Finance Research, 6*(2), 45–59.

Adebayo, O. S., & Oladipo, S. O. (2022). Credit risk management and financial performance of deposit money banks in Nigeria. *International Journal of Finance and Banking Research, 8*(2), 45–56.

Aslam, M., Kumar, S., & Sorooshian, S. (2020). Predicting likelihood for loan default among bank borrowers. *International Journal of Financial Research, 11*(1), 318–328.

Basel Committee on Banking Supervision. (2011). *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*. Bank for International Settlements.

Berger, A. N., & Bouwman, C. H. S. (2013). How does capital affect bank performance during financial crises? *Journal of Financial Economics, 109*(1), 146–176. https://doi.org/10.1016/j.jfineco.2013.02.008

Boudriga, A., Taktak, N. B., & Jellouli, S. (2009). Bank specific, business and institutional environment determinants of nonperforming loans. *Journal of Financial Economic Policy, 1*(4), 286–318.

Brigham, E. F., & Ehrhardt, M. C. (2017). *Financial Management: Theory and Practice* (15th ed.). Cengage Learning.

Caouette, J. B., Altman, E. I., Narayanan, P., & Nimmo, R. (2011). *Managing Credit Risk: The Great Challenge for Global Financial Markets* (2nd ed.). John Wiley & Sons.

Central Bank of Nigeria. (2020). *Monetary, Credit, Foreign Trade and Exchange Policy Guidelines*. Central Bank of Nigeria.

Central Bank of Nigeria. (2022). *Financial Stability Report*. Central Bank of Nigeria.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans. *Journal of Financial Stability, 20*, 93–104.

Hacievliyagil, N., & Eksi, I. H. (2019). A micro based study on bank credit and economic growth: Manufacturing sub-sectors analysis. *South East European Journal of Economics and Business, 14*(1), 72–91.

International Monetary Fund. (2019). *Financial Soundness Indicators Compilation Guide*. International Monetary Fund.

Kegninkeu, K. N. D. (2018). The impact of credit risk management on the performance of commercial banks in Cameroon: Case study of BICEC Cameroon. *Global Journal of Management and Business Research: C Finance, 18*(7), 19–40.

Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012). Credit risk and commercial banks performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research, 2*(2), 31–38.

Makori, N. W. (2018). Credit risk management and level of non-performing loans in commercial banks in Kenya. *Accounting and Finance, 2*, 1306–1323.

Makri, V., Tsagkanos, A., & Bellas, A. (2014). Determinants of non-performing loans: The case of Eurozone. *Panoeconomicus, 61*(2), 193–206.

Marina, N. L. (2009). Credit risk management in the bank. *Vestnik Samara State University of Business*.

Naili, M., & Lahrichi, Y. (2022). Banks' credit risk, systematic determinants, and financial performance. *Journal of Financial Risk Management, 11*(1), 1–15.

Ndubuisi, C. J., & Amedu, J. M. (2018). An analysis of the relationship between credit risk management and bank performance in Nigeria: A case study of Fidelity Bank Nigeria PLC. *International Journal of Research and Review, 5*(2), 58–69.

Nwankwo, G. O. (1991). *Bank Management Principles and Practices: Managing the Lending Portfolio*. Malthouse Press.

Odawo, G. O., Makokha, E. N., & Namusonga, G. (2019). Effects of credit risk management on performance of banks in Kenya. *Archives of Business Research, 7*(2), 59–71.

Oduro, R., Aseidu, M. A., & Gadzo, S. G. (2019). Impact of credit risk on corporate financial performance. *Journal of Economics and International Finance, 11*(1), 1–14.

Ogboi, C., & Unuafe, O. K. (2013). Impact of credit risk management and capital adequacy on financial performance of commercial banks in Nigeria. *Journal of Emerging Issues in Economics, Finance and Banking, 2*(3), 703–717.

Ogujiuba, K., Ohuche, F., & Adenuga, A. (2004). Credit availability to small and medium scale enterprises in Nigeria. *Central Bank of Nigeria Economic and Financial Review, 42*(1), 65–78.

Okaro, C. S. (2014). *Money, Banking Method and Processes*. VALICH Printing and Publishers & ABIMAC Publishers Nigeria.

Okoh, J. I., Nkechukwu, G. C., & Ezu, G. K. (2016). Liquidity management and performance of banks in Nigeria: Investigating the nexus. In I. Okoye, K. C. Onyima, & K. Ezu (Eds.), *Managing Diversification for Sustainable Development in Sub-Saharan Africa: Proceedings of Faculty of Management Sciences' Nnamdi Azikiwe University, Awka, 2016 International Conference* (pp. 761–783).

Olalere, O. E., & Ahmad, W. O. (2015). The empirical effects of credit risk on profitability of commercial banks: Evidence from Nigeria. *International Journal of Science and Research, 5*(1), 1645–1650.

Olusegun, A. S., & Odetayo, T. A. (2021). Credit management and financial performance of commercial banks in Nigeria. *Journal of Finance and Accounting, 9*(3), 112–121.

Onaolapo, A. R. (2012). Analysis of credit risk management efficiency in Nigeria commercial banking sector (2004–2009). *Far East Journal of Marketing and Management, 2*(1), 25–30.

Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues, 3*(1), 237–252.

Onyiriuba, L. (2009). *Analyzing and Managing Risk of Banks' Lending*. Malthouse Press.

Padmanabhan, K. P. (1998). *Rural Credit: Lessons for Rural Bankers and Policy Makers*. Intermediate Technology Publications.

Philip, A. O., & Abisola, A. T. (2019). Impact of credit risk management on profitability of selected deposit money banks in Nigeria. *International Journal of Economics, Commerce and Management, 7*(9), 254–268.

Rose, P. S., & Hudgins, S. C. (2013). *Bank Management and Financial Services* (9th ed.). McGraw-Hill Education.

Sanusi, L. S. (2010). *The Nigerian Banking Industry: What Went Wrong and the Way Forward*. Central Bank of Nigeria.

Saunders, A., Cornett, M. M., & McGraw, P. A. (2019). *Financial Institutions Management: A Risk Management Approach* (9th ed.). McGraw-Hill Education.

Simatele, M. (2021). Financial development and economic growth nexus. *Journal of African Business, 22*(3), 345–360.

Sinkey, J. F. (2002). *Commercial Bank Financial Management in the Financial Services Industry*. Prentice Hall.

Yakubu, I. N. (2018). Credit risk and profitability of deposit money banks in Nigeria. *International Journal of Economics and Finance, 10*(1), 1–10.