

ISIR Journal of Business and Management Studies (ISIRJBMS)
ISSN: 3048-7684 (Online)
Frequency: Bimonthly
Published By ISIR Publisher
Journal Homepage Link- https://isirpublisher.com/index.php/isirjbms

Credit Risk Management and Capital Adequacy in Nigerian Commercial Banks

By

Moses Biewari Gboloko[1],Ipigansi Pretoria (PhD)[2]

Department of Insurance Niger Delta University Wilberforce Island Bayelsa State

Article History

Received: 15/08/2025
Accepted: 15/09/2025
Published: 02/10/2025

Vol – 2 Issue – 5

PP: -45-59

Abstract

This study examined the impact of credit risk management practices on capital adequacy in Nigerian commercial banks. The objective of the study was to investigate the effect of loan loss provisions, loan loss reserves, and collateralization on capital adequacy. An ex-post facto research design was adopted, and data was collected from the annual reports of Nigerian commercial banks from 2008 to 2023. The study employed descriptive statistics, unit root tests, and Autoregressive Distributed Lag (ARDL) regression analysis to analyze the data. The results revealed that loan loss provisions, loan loss reserves, and collateralization had no significant impact on capital adequacy in Nigerian commercial banks. However, the ARDL Bound test confirmed a long-run relationship between the variables. These findings imply that banks' capital adequacy is influenced by a range of factors beyond credit risk management practices, including macroeconomic conditions, regulatory requirements, and bank-specific characteristics. Therefore, while credit risk management remains important, it should be complemented by broader considerations for maintaining capital adequacy. The study concluded that credit risk management practices may not be effective in influencing capital adequacy in the short run, but their long-run relationship is important for banking stability. Based on the findings, the study recommends that banks optimize their provisioning strategies, maintain adequate reserve levels, prioritize creditworthiness and repayment capacity, and closely monitor macroeconomic conditions to adjust their risk management strategies. The study's findings contribute to the ongoing debate on the impact of credit risk management practices on capital adequacy in commercial banks.

Keywords; *Credit risk management, capital adequacy, Nigerian commercial banks, loan loss provisions, and ARDL regression analysis.*

1.1 Introduction

The banking sector is a critical component of any economy, playing a vital role in facilitating financial transactions, mobilizing savings, and providing credit to individuals and businesses. In Nigeria, the banking sector has undergone significant reforms and transformations over the years, with the aim of strengthening the financial system and promoting economic growth. However, despite these efforts, the sector still faces significant challenges, including credit risk, which has been identified as a major threat to the stability of the financial system (Reddy, 2021; Abiy, 2021).

Credit risk is the risk of loss resulting from a borrower's failure to repay a loan or meet their credit obligations. It is a critical component of banking operations, and effective credit risk management practices are essential for maintaining the stability of the financial system. In Nigeria, the high level of non-performing loans (NPLs) has been a major concern, with many banks struggling to manage their credit risk effectively (Aliyu, 2023; Akosile et al., 2023). This has resulted in a decrease in the confidence of depositors and investors, leading to a decline in the stability of the financial system.

The impact of credit risk on the banking sector has been significant, with many banks experiencing financial difficulties and failing to meet their regulatory requirements. The high level of NPLs has also led to a decrease in the loan loss provisions, loan loss reserves, and collateralization, which are critical components of credit risk management practices (Aliyu, 2023; Akosile et al., 2023). This has resulted in a decrease in the capital adequacy of banks, making them more vulnerable to financial shocks and instability.

Effective credit risk management practices are essential for maintaining the stability of the financial system. This includes the use of loan loss provisions, loan loss reserves, and

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

collateralization to manage credit risk (Addy et al., 2024). However, despite the importance of credit risk management, many banks in Nigeria still struggle with effective credit risk management practices. This has resulted in a significant increase in credit risk, which has negatively impacted the performance of banks and the overall stability of the financial system.

The relationship between credit risk management practices and capital adequacy in commercial banks in Nigeria is not well understood. Although, studies such as Addy et al. (2024), Aliyu (2023), and Akosile et al. (2023) have examined the impact of credit risk management practices on bank performance and financial stability, they have not specifically focused on capital adequacy. This study aims to fill this gap by investigating the relationship between loan loss provisions, loan loss reserves, collateralization, and capital adequacy in Nigerian commercial banks, using a comprehensive research design. By examining the specific credit risk management practices that are critical to capital adequacy in Nigerian commercial banks, this study will provide new insights into the relationship between credit risk management and capital adequacy in commercial banks.

1.2 Statement of the Problem

The Nigerian banking sector plays a pivotal role in the country's economic development but faces persistent challenges related to credit risk, especially the rising levels of non-performing loans (NPLs), which have negatively affected bank performance and financial system stability (Reddy, 2021; Abiy, 2021; Adegbie&Adebanjo, 2020). Recent commercial bank failures, including the notable case of Heritage Bank in 2024, demonstrate the severe consequences of weak credit risk management and insufficient capital adequacy. These failures highlight an urgent need to understand how credit risk management practices, such as loan loss provisions, loan loss reserves, and collateralization, affect the sustainability and resilience of Nigerian banks.

Existing research reveals that while credit risk management generally improves bank performance, gaps remain in exploring its direct impact on capital adequacy. Addy et al. (2024) documented the rise of predictive analytics in credit risk management but noted limited focus on traditional practices critical to capital adequacy. Aliyu (2023) and Akosile et al. (2023) found significant positive effects of credit risk management on financial performance but did not specifically assess capital adequacy. Studies from Ethiopia (Temesgen, 2023; Singh, 2021) and India (Antony & G, 2023; Reddy, 2021) also highlight challenges such as overreliance on collateral, inadequate loan loss reserves, and weak credit policies, which undermine long-term banking stability. Adegbie and Adebanjo (2020) and Edore (2020) similarly observed that poor credit risk indicators correlate with financial instability in Nigerian banks, but their work did not focus on how these factors influence capital adequacy.

Given these gaps, this study quantitatively investigated the relationship between loan loss provisions, loan loss reserves, collateralization, and capital adequacy in Nigerian commercial banks. By addressing these specific credit risk management practices, the study generated empirical insights that can inform regulatory frameworks and banking strategies. Ultimately, the goal is to enhance the resilience and sustainability of Nigerian banks and help prevent failures like that of Heritage Bank, strengthening overall financial system stability.

1.3 Research Questions

This study has investigated the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks, prompting the following research questions:

1. To what extent does loan loss provisions affect capital adequacy in Nigerian commercial banks?
2. To what extent does loan loss reserves impact capital adequacy in Nigerian commercial banks?
3. To what extent does collateralization have on capital adequacy in Nigerian commercial banks?

This structure varies the question wording, maintaining clarity and conciseness.

1.4 Research Hypotheses

This study investigated the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks, leading to the following null hypotheses:

$H0_1$: Loan loss provisions has no significant effect on capital adequacy in Nigerian commercial banks.

$H0_2$: Loan loss reserves has no significant impact on capital adequacy in Nigerian commercial banks.

$H0_3$: Collateralization has no significant effect on capital adequacy in Nigerian commercial banks.

1.5 Aim and objectives of the study

The Primary objective of this study was to investigate the overall effect of credit risk management practices on capital adequacy in Nigerian commercial banks. Specifically, this study:

1. Examined the effect of loan loss provisions on capital adequacy in Nigerian commercial banks.
2. Investigated the effect of loan loss reserves on capital adequacy in Nigerian commercial banks.
3. Analyzed the effect of collateralization on capital adequacy in Nigerian commercial banks.

1.6 Scope of the Study

The geographical scope of this study focuses on Nigerian commercial banks, examining credit risk management practices and capital adequacy within the Nigerian banking sector. This scope is justified because Nigeria represents a significant emerging market with a rapidly growing banking sector, providing valuable insights into credit risk management practices in developing economies.

The content scope encompasses credit risk management practices, specifically loan loss provisions, loan loss reserves, and collateralization, and their impact on capital adequacy.

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

This scope is justified as it aligns with Basel Accords and Nigerian banking regulations, addresses key credit risk management strategies, and focuses on critical components influencing capital adequacy.

This study covers a 15-year period (2008-2023), providing a comprehensive analysis of credit risk management practices and capital adequacy during periods marked by economic fluctuations, regulatory changes, and industry adaptations.

The unit of analysis is commercial banks in Nigeria, specifically listed banks on the Nigerian Stock Exchange Group (NXG), banks with assets exceeding ₦100 billion, and banks with significant lending activities. This unit of analysis is justified because listed banks represent a significant portion of Nigeria's banking sector, large banks provide comprehensive financial data, and focusing on lending-intensive banks highlights credit risk management practices.

1.7 Significance of the Study

Academic Sector: This study significantly contributes to the academic sector by enhancing the existing body of knowledge on credit risk management practices and capital adequacy. It fills gaps in existing literature, offering a comprehensive understanding of the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks. The findings will provide valuable insights for researchers, academics, and students, facilitating further research and scholarly discussions.

Banking Sector: The banking sector stands to benefit immensely from this study. The findings will inform Nigerian commercial banks' strategic decisions on credit risk management, enhancing their ability to manage risk and maintain capital adequacy. Improved credit risk assessment and management will reduce non-performing loans, enhance capital adequacy and stability, and promote better lending practices. This, in turn, will strengthen the banking sector, ensuring financial stability and confidence.

Regulatory Sector: The regulatory sector, comprising institutions like the Central Bank of Nigeria (CBN) and the Nigerian Deposit Insurance Corporation (NDIC), will also benefit. The study's outcomes will assist regulatory bodies in developing effective regulations and guidelines, enhancing supervisory oversight, and improving risk management practices. This will maintain financial stability, ensure compliance, and promote a sound banking system.

Investors: Investors will gain valuable insights from this study, enabling them to assess credit risk and capital adequacy, make informed investment decisions, evaluate bank performance, and manage portfolio risk. By providing a comprehensive understanding of credit risk management practices and capital adequacy, this study will enhance investor confidence, promoting investments and economic growth.

Economic Sector: The economic sector will benefit from improved lending practices, boosting economic activity, and enhanced confidence in the banking sector. Financial stability and economic growth will be promoted, with better allocation of resources.

Policy Makers: Policy decisions will be informed, enabling policymakers to develop policies promoting financial stability, enhance regulatory frameworks, support economic growth, and improve banking sector performance.

Overall, Economy: Ultimately, this study contributes to the overall stability and growth of the Nigerian economy. By examining credit risk management practices and capital adequacy, it provides a comprehensive framework for understanding and addressing critical issues in the banking sector.

2.0 Literature Review

2.1 Credit Risk Management

Credit risk management is a fundamental aspect of banking operations, as it directly influences a bank's financial health, operational sustainability, and long-term success. According to the Basel Committee on Banking Supervision (2010) and Saunders & Cornett (2014), the ability of a financial institution to effectively manage credit risk determines its resilience during periods of economic uncertainty and financial stress. Kolb and Rodriguez (2017) emphasize that by minimizing potential credit losses and ensuring prudent lending practices, banks can maintain adequate capital levels and reduce the probability of insolvency.

An essential first step in credit risk management is the identification of potential credit risks. This process involves a thorough evaluation of loan applicants, the quality and value of collateral offered, and a macro-level analysis of market and industry trends that may affect the borrower's ability to repay. Identifying these risks early enables banks to make informed lending decisions, set appropriate credit terms, and apply necessary safeguards.

2.1.1 Credit Risk Mitigation Strategies

To effectively manage and mitigate credit risk, banks implement a range of strategies that provide both preventative and corrective mechanisms. These include loan loss provisions, loan loss reserves, and collateralization—all of which play a critical role in maintaining credit quality and financial stability.

Loan Loss Provisions

Loan loss provisions (LLPs) are accounting entries that reflect the estimated amount of loan losses a bank expects to incur over time. According to the Financial Accounting Standards Board (2012), these provisions are necessary to accurately represent a bank's financial position. LLPs serve multiple purposes: they absorb potential credit losses, contribute to the maintenance of capital adequacy, provide transparency in financial reporting (Kolb & Rodriguez, 2017), and ensure compliance with regulatory standards such as those outlined by the Basel Committee on Banking Supervision (2010).

LLPs are categorized into specific and general provisions. Specific provisions are created for loans that are individually identified as impaired, meaning the bank has evidence that a

*Corresponding Author: **Moses BiewariGboloko.**
This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

borrower may not fully meet its repayment obligations. General provisions, on the other hand, cover the broader loan portfolio and account for losses that are inherent but not yet individually identified. These provisioning practices ensure that the bank maintains a proactive stance toward potential credit deterioration, thereby strengthening the overall asset quality of the institution.

Loan Loss Reserves

Loan loss reserves (LLRs) are funds that banks retain to cover unforeseen or unexpected losses that may arise from their lending activities. While similar in function to LLPs, LLRs offer an additional financial cushion that enhances a bank's capacity to withstand credit shocks. The Federal Deposit Insurance Corporation (2018) outlines that these reserves are critical for safeguarding the bank's capital and liquidity positions, especially during economic downturns or when asset quality declines suddenly.

LLRs supplement LLPs and ensure that the bank remains adequately capitalized even when loan defaults exceed expectations. According to Bushman and Williams (2015), maintaining robust loan loss reserves reinforces investor and depositor confidence, promotes lending stability, and aligns with prudent risk management practices.

Collateralization

Collateralization involves securing loans by requiring borrowers to pledge assets—such as real estate, equipment, securities, or guarantees—as a form of protection for the lender. This strategy significantly reduces a bank's exposure to credit risk by creating a fallback mechanism in the event of borrower default. Morgan (2012) asserts that collateral plays a central role in reducing moral hazard and adverse selection in lending, as it incentivizes borrowers to fulfill their repayment obligations.

From a practical standpoint, collateralization enhances loan recovery prospects, especially when borrowers face financial distress. It also informs credit decision-making, as the type, quality, and market value of collateral influence the terms and approval of the loan (Berger &Udell, 2006). Furthermore, Gorton and Pennacchi (1990) highlight that collateral provides an additional layer of financial security, reducing potential losses and contributing to overall portfolio soundness.

2.1.2 Capital Adequacy

Capital adequacy is a critical metric that reflects a bank's ability to absorb losses and continue operating under financial stress. It represents the relationship between a bank's capital base and the risk-weighted assets on its balance sheet. The Basel Committee on Banking Supervision (2010) introduced international standards—commonly referred to as the Basel Accords—to ensure that banks hold sufficient capital to cover credit and other types of risk.

The capital adequacy ratio (CAR) is used to assess the strength of a bank's capital position. It includes two main components: Tier 1 capital, which comprises core elements like equity and retained earnings; and Tier 2 capital, which includes subordinated debt and other supplementary instruments. These capital tiers are then measured against the bank's total risk-weighted assets to determine the adequacy of capital held.

Maintaining a strong capital adequacy ratio is essential for several reasons. First, it ensures financial stability by enabling banks to withstand periods of loan defaults, economic downturns, or operational losses. Second, it promotes solvency by protecting depositors and other stakeholders from the risk of bank failure. Third, it ensures compliance with global and national regulatory frameworks designed to preserve the integrity of the financial system. As Admati and Hellwig (2013) note, robust capital adequacy is not just a regulatory requirement—it is a safeguard for the broader economy and a foundation for sustainable banking.

2.2 Theoretical Review

This study draws on Risk Management Theory, Capital Adequacy Theory, and Agency Theory to comprehensively examine the relationship between credit risk management strategies and capital adequacy in Nigerian commercial banks, providing a nuanced understanding of how loan loss provisions, loan loss reserves, and collateralization impact capital adequacy and financial stability.

2.2.1 Risk Management Theory

Risk Management Theory, developed by Frank Knight (1921), emphasizes the critical process of identifying, assessing, and mitigating risks to minimize potential losses and maximize returns, which is particularly relevant to credit risk management in the banking sector. Effective risk management is crucial for banks, enabling them to proactively manage credit risk, minimize potential losses, maintain capital adequacy, and ensure long-term viability. By identifying and assessing credit risks, banks develop and implement strategies to mitigate these risks, such as diversification, collateralization, and hedging, while also engaging in regular monitoring and review of credit exposures. This theory provides a framework for understanding credit risk management strategies employed by banks, and its application in this study will analyze how Nigerian commercial banks manage credit risk and maintain capital adequacy through loan loss provisions, loan loss reserves, and collateralization, ultimately providing valuable insights into effective risk management strategies.

2.2.2 Capital Adequacy Theory

Capital Adequacy Theory, developed by Admati and Hellwig (2013), suggests banks maintain sufficient capital to absorb potential losses and ensure financial stability. Capital adequacy is central to banking regulation, determining a bank's ability to meet financial obligations. Capital adequacy measures Tier 1 capital, Tier 2 capital, and risk-weighted assets. Maintaining adequate capital ensures solvency, complies with regulatory requirements, and maintains stakeholder confidence. Capital adequacy ratios compare capital to risk-weighted assets, ensuring banks absorb unexpected losses. Capital Adequacy Theory is directly applicable to this study, as it examines the relationship

*Corresponding Author: **Moses BiewariGboloko.**
This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

between credit risk management strategies and capital adequacy. This study investigates how loan loss provisions, loan loss reserves, and collateralization impact capital adequacy, providing insights into banks' ability to maintain sufficient capital. By applying Capital Adequacy Theory, this study evaluates the effectiveness of Nigerian commercial banks' capital adequacy ratios.

2.2.3 Agency Theory

Agency Theory, introduced by Jensen and Meckling (1976), posits banks act in stakeholders' best interests. Relevant to credit risk management and capital adequacy, banks balance risk-taking with prudence. Agency theory highlights principal-agent relationships. Banks prioritize risk-taking over prudence, leading to moral hazard and adverse selection. Effective risk management and capital adequacy mitigate risks. Maintaining capital and managing credit risk prudently ensures financial stability, stakeholder confidence, and fulfills agency obligations. Agency Theory is relevant to this study, as it highlights the importance of balancing risk-taking with prudence in credit risk management. This study examines how Nigerian commercial banks manage credit risk and maintain capital adequacy, providing insights into their agency obligations. By applying Agency Theory, this study evaluates banks' ability to act in stakeholders' best interests, ensuring financial stability and confidence.

2.3 Empirical Review

Addy et al. (2024) conducted a comprehensive review of predictive analytics in credit risk management for banks, synthesizing existing literature and real-world case studies through a qualitative research design. They identified key trends such as the integration of predictive analytics across various banking operations and the increasing adoption of advanced machine learning algorithms to mitigate credit risk effectively. Their study offered valuable insights into the evolving landscape of credit risk management tools. However, their study failed to examine specific credit risk management practices, such as loan loss provisions, loan loss reserves, and collateralization, which are critical factors influencing capital adequacy in commercial banks.

Temesgen (2023) assessed the credit risk management practices of Awash Bank S.C. in Ethiopia using a descriptive research design and a mixed-method approach involving qualitative and quantitative data from a sample of 125 employees selected from a population of 182. The study provided detailed insights into the operational credit risk practices and challenges faced by the bank's management. However, their study failed to analyze the impact of these credit risk management practices on capital adequacy, which is essential for understanding banking sector stability and regulatory compliance in a broader context.

Aliyu (2023) investigated the effect of credit risk management on the financial performance of 15 deposit money banks in Nigeria, using data from 2013 to 2020 and employing a quantitative research approach with descriptive statistics. The study revealed a statistically significant positive effect of credit risk management on banks' financial performance, with key coefficients and p-values confirming this relationship. However, their study failed to examine specific credit risk management practices such as loan loss provisions, loan loss reserves, and collateralization, which have a direct bearing on the capital adequacy of commercial banks.

Akosile et al. (2023) examined the impact of credit risk on the performance of Nigerian deposit money banks over a 15-year period (2005–2019), applying OLS regression, pairwise Granger causality, and co-integration tests. Their findings indicated a significant short-term negative impact of credit risk on bank profitability, specifically noting a negative relationship between loan to asset ratio and profit after tax. However, their study failed to explore the long-term effects of credit risk management practices on capital adequacy, limiting its ability to provide insights into sustained banking stability.

Antony (2023) employed panel data modeling to identify determinants of credit risk in 31 Indian commercial banks from 2012 to 2021. The study found a statistically significant negative relationship between return on equity and credit risk, suggesting that increased profitability reduces credit risk. However, their study failed to examine specific credit risk management practices that critically affect capital adequacy and focused solely on Indian banks, limiting its applicability to other banking environments such as Nigeria.

Reddy (2021) studied credit risk management practices in select Indian banks, using descriptive research design and data collected via questionnaires and interviews from credit and loan department employees. The results showed an increase in non-performing loans attributed to inadequate credit policies and poor risk countermeasures. However, their study failed to investigate specific credit risk management practices, including loan loss provisions and collateralization, that are essential to capital adequacy in commercial banks.

Singh (2021) conducted an assessment of credit risk management practices at Dashen Bank's Mettu Branch in Ethiopia, utilizing a descriptive research design with data collected through questionnaires and interviews. The study found that the bank employed good credit granting practices and appropriate risk assessment tools. However, their study failed to analyze how these practices influence capital adequacy, restricting its contribution to broader banking sector risk management frameworks.

Abiy (2021) examined credit risk management practices in Ethiopian commercial banks through questionnaires and interviews with bank employees. The study highlighted a heavy reliance on collateral rather than borrower repayment capacity as a key credit risk mitigation tool. However, their study failed to investigate the impact of such credit risk management practices on capital adequacy, which is critical for assessing banking system resilience.

Tedros (2021) evaluated credit risk management practices at Awash Bank in Ethiopia, collecting data via questionnaires and interviews. The study identified weaknesses in employee training, concentration risk awareness, and credit risk policy implementation. However, their study failed to explore the

*Corresponding Author: **Moses BiewariGboloko.**
This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

relationship between these credit risk management deficiencies and capital adequacy in commercial banks.

Adegbie and Adebanjo (2020) examined the effect of credit risk management on the financial stability of quoted Nigerian deposit money banks using an ex-post facto design and inferential statistics. Their results showed significant relationships between credit risk measures—such as non-performing loan ratio, loan loss provision ratio—and indicators of financial stability. However, their study failed to focus specifically on the influence of credit risk management practices on capital adequacy in commercial banks.

Edore (2020) investigated the impact of credit risk management on Nigerian banks' performance by analyzing the relationships among credit to private sector, liquidity ratio, non-performing loans, loan advances, and return on assets using unit root and OLS regression techniques. The findings demonstrated that risk management positively affected bank performance, with credit to private sector and liquidity ratio showing significant positive effects. However, their study failed to examine specific credit risk management practices that affect capital adequacy in commercial banks.

Aldayel (2018) conducted a descriptive survey on the impact of credit risk management practices on financial performance in Saudi commercial banks, revealing that banks actively engage in various risk management practices to mitigate credit risk. However, their study failed to analyze the effects of these practices on capital adequacy, especially in different regulatory and economic contexts like Nigeria.

2.4 Summary of Empirical Literature Review

The empirical literature review on credit risk management practices in commercial banks reveals that effective credit risk management practices have a positive impact on bank performance, financial stability, and capital adequacy. Studies have shown that credit risk management practices, such as predictive analytics (Addy et al., 2024), loan loss provisions, loan loss reserves, and collateralization, are critical to maintaining capital adequacy in commercial banks. Researchers have also identified weaknesses in credit risk management practices, including a lack of well-organized credit policies (Reddy, 2021), reliance on collateral rather than repayment capacity (Abiy, 2021), and inadequate employee training (Tedros, 2021). Other studies have found that credit risk management practices have a significant effect on financial performance (Aliyu, 2023), bank performance (Akosile et al., 2023), and financial stability (Adegbie&Adebanjo, 2020; Edore, 2020). These findings highlight the importance of effective credit risk management practices in commercial banks, and our study fills the gap by investigating the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks, using a comprehensive research design.

2.5 Gap in Literature Review

The existing literature on credit risk management practices in commercial banks has several gaps that need to be addressed. One of the major gaps is the lack of comprehensive studies on the relationship between credit risk management practices and capital adequacy in commercial banks, particularly in Nigeria. While studies such as Addy et al. (2024), Aliyu (2023), and Akosile et al. (2023) have examined the impact of credit risk management practices on bank performance and financial stability, they have not specifically focused on capital adequacy. Similarly, studies such as Reddy (2021), Abiy (2021), and Tedros (2021) have examined credit risk management practices in specific countries or regions, but their findings may not be generalizable to other countries or regions.

Another gap in the literature is the limited scope of credit risk management practices examined in existing studies. Many studies have focused on specific aspects of credit risk management, such as predictive analytics (Addy et al., 2024), loan loss provisions (Adegbie&Adebanjo, 2020), or collateralization (Abiy, 2021). However, few studies have examined the comprehensive relationship between credit risk management practices and capital adequacy in commercial banks. Furthermore, most studies have employed descriptive research designs, which may not provide a comprehensive understanding of the relationship between credit risk management practices and capital adequacy.

The existing literature also lacks studies that specifically focus on the Nigerian banking sector. While studies such as Aliyu (2023) and Akosile et al. (2023) have examined credit risk management practices in Nigerian banks, they have not specifically focused on capital adequacy. Our study fills this gap by investigating the relationship between credit risk management practices, including loan loss provisions, loan loss reserves, and collateralization, and capital adequacy in Nigerian commercial banks, using a comprehensive research design. By examining the specific credit risk management practices that are critical to capital adequacy in Nigerian commercial banks, our study provides new insights into the relationship between credit risk management and capital adequacy in commercial banks.

3.0 Methodology

3.1 Research Design

This study employed an ex-post facto research design, utilizing a quantitative approach to examine the effect of credit risk management practices on capital adequacy in Nigerian commercial banks. The ex-post facto design is suitable for this study because it allows for the examination of the relationship between credit risk management practices and capital adequacy using historical data.

3.2 Population of the Study

The population of this study comprised all commercial banks operating in Nigeria. As of 2023, there were 22 commercial banks operating in Nigeria, according to the Central Bank of Nigeria (CBN).

3.3 Sample and Sampling Procedure

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

This study employed a census sampling technique, utilizing the entire population of annual secondary time-series data from 2008 to 2023. The sample consisted of 16 annual observations for credit risk management variables and capital adequacy. The choice of 2008 as the starting point is due to the fact that it marks the beginning of the global financial crisis, which had a significant impact on the Nigerian banking sector.

3.4 Method of Data Collection

This study utilized secondary time-series data from reputable sources, including the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and Nigerian Deposit Insurance Corporation (NDIC), spanning from 2008 to 2023. The data collected includes Capital Adequacy Ratio (CAR), Collateralization (COL), Loan Loss Reserves (LLR), and Loan Loss Provisions (LLP).

3.5 Measurement of Variables

Capital Adequacy Ratio (CAR) is measured as the ratio of capital to risk-weighted assets, calculated as CAR = Total Capital / Risk-Weighted Assets.

Collateralization (COL) is measured as Total Collateral Values.

Loan Loss Reserves (LLR) is measured as Total Loan Loss Reserves.

Loan Loss Provisions (LLP) is measured as Total Loan Loss Provisions.

3.6 Method of Data Analysis

The data analysis was conducted using econometric techniques, including descriptive statistics, Augmented Dickey Fuller unit root test, correlation analysis, Granger causality test, Autoregressive Distributed Lag (ARDL) model, ARDL Bound test, Ramsey RESET test, and Breusch-Pagan-Godfrey heteroscedasticity test, to examine the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks.

3.7 Model Specification

The functional form of the model is which is adopted from the study of Aliyu, 2023:

$CAR = f(COL, LLR, LLP, \varepsilon)$,

where CAR represents Capital Adequacy Ratio,
COL represents Collateralization,
LLR represents Loan Loss Reserves,
LLP represents Loan Loss Provisions, and ε represents the error term.

The econometric model is specified as:
$CAR_t = \beta 0 + \beta 1 COL_t + \beta 2 LLR_t + \beta 3 LLP_t + \varepsilon_t$,

where:
CAR_t represents Capital Adequacy Ratio at time t, COL_t represents Collateralization at time t, LLR_t represents Loan Loss Reserves at time t, LLP_t represents Loan Loss Provisions at time t, β0 represents the constant term, β1, β2, and β3 represent the coefficients of the independent variables, and εt represents the error term at time t. This model is adopted from the study by Yeh et al. (2022), who used a similar regression model to examine the relationship between corporate governance and firm performance.

4.0 Results and Discussion

4.1 Data Presentation

The data used in this study is presented in the appendix 1. It includes the annual data on loan loss provisions, loan loss reserves, collateralization, and capital adequacy ratio for Nigerian commercial banks from 2008 to 2023.

4.2 Data Analysis

The data was analyzed using econometric techniques to examine the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks.

4.2.1 Summary of Descriptive Statistics

Table 4.1 Summary of Descriptive Statistics

	CAR	COL	LLP	LLR
Mean	17.92563	8404177.	383983.8	910794.8
Median	17.11500	6701252.	1010.030	3056.485
Maximum	28.15000	19465221	1613120.	3867.063.
Minimum	12.80000	1693702.	234.7800	1982.330
Std. Dev.	3.327906	6147268.	686003.1	1626888.
Skewness	1.760508	0.591232	1.160163	1.165433
Kurtosis	6.849379	1.973493	2.354497	2.374750
Jarque-Bera	18.14352	1.634625	3.867056	3.882585
Probability	0.000115	0.441617	0.144637	0.143518
Sum	286.8100	1.34E+08	6143741.	14572716
Sum Sq. Dev.	166.1244	5.67E+14	7.06E+12	3.97E+13
Observations	16	16	16	16

Source: Author' Computation 2025

The statistical analysis reveals key insights into the trends and characteristics of the financial metrics. The Capital Adequacy Ratio exhibits a mean of 17.92563, indicating a relatively stable capital cushion against potential losses, with a standard deviation of 3.327906 suggesting moderate variability. The Collateral Values have a mean of 8,404,177 and a standard deviation of 6,147,268, indicating significant growth and variability in the banking sector's asset base and lending activities. The Loan Loss Provision and Total Loan Loss Reserve also exhibit variability, with means of 383,983.8 and 910,794.8, respectively. The skewness and kurtosis values suggest that the distributions of these metrics are not perfectly normal, with the Capital Adequacy Ratio and Loan Loss Provision exhibiting leptokurtic distributions. The Jarque-Bera test confirms that only the Capital Adequacy Ratio

*Corresponding Author: **Moses BiewariGboloko.**
This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

rejects the null hypothesis of normality at a significant level, while the other metrics do not. Overall, the analysis highlights the dynamic nature of these financial metrics and the need for banks to adapt to changing economic conditions and credit risk environments.

4.2.2 Augmented Dickey Fuller Unit Root Test

Table 4.2 Augmented Dickey Fuller Unit Root Test

Variable	P-Value	Order of integration	Decision @ 5%
CAR	0.1077 0.0000	Level 1ST Order	Stationary at 1ST Order
COL	0.9999 0.0166	Level 1st Order	Stationary at 1st Order
LLP	0.8535 0.0257	Level 1st Order	Stationary at 1st Order
LLR	0.8740 0.0173	Level 1st Order	Stationary at 1st Order

Source: Author' Computation 2025

The unit root test results confirm that all variables, including Capital Adequacy Ratio, Collateral Values, Loan Loss Provision, and Total Loan Loss Reserve, are stationary at the first order of integration, as evidenced by their p-values being less than 0.05, specifically 0.0000, 0.0166, 0.0257, and 0.0173, respectively. This indicates that each variable exhibits a stable and predictable pattern after differencing once, suggesting they are integrated of order one, denoted as I(1). As a result, these variables are suitable for further analysis, such as regression modeling, to explore their relationships and dynamics.

4.2.3 Correlation Analysis

Table 4.3 Correlation Analysis

	CAR1	COL1	LLP1	LLR1
CAR1	1	0.002006382293282687	0.02336359226291118	0.03929860912540872
COL1	0.002006382293282687	1	0.6450151227769749	0.6819698013860825
LLP1	0.02336359226291118	0.6450151227769749	1	0.9893429669564791
LLR1	0.03929860912540872	0.6819698013860825	0.9893429669564791	1

Source: Author' Computation 2025

The correlation matrix reveals that Collateral Values (COL1), which is a proxy for collateralization, exhibits strong positive correlations with Loan Loss Provision (LLP1) and Total Loan Loss Reserve (LLR1), with coefficients of 0.6450 and 0.6820, respectively. This suggests that increased collateralization is associated with higher loan loss provisions and reserves, indicating that banks are taking a cautious approach to managing risk by requiring more collateral and provisioning for potential losses. Specifically, for every unit increase in collateralization, loan loss provisions and reserves increase by approximately 0.6450 and 0.6820 units, respectively. The strong correlation between collateralization and loan loss provisions/reserves implies that banks are using collateralization as a risk mitigation strategy.

4.2.4 Granger Causality Test

Table 4.4 Pairwise Granger Causality Tests

Pairwise Granger Causality Tests

Date: 07/16/25 Time: 11:43

Sample: 2008 2023

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
COL1 does not Granger Cause CAR1	13	1.43642	0.2931
CAR1 does not Granger Cause COL1		0.01199	0.9881
LLP1 does not Granger Cause CAR1	13	1.24970	0.3371
CAR1 does not Granger Cause LLP1		0.00670	0.9933
LLR1 does not Granger Cause CAR1	13	1.31248	0.3214
CAR1 does not Granger Cause LLR1		0.00407	0.9959

Source: Author' Computation 2025

The Pairwise Granger Causality Tests reveal that there is no significant causal relationship between the variables, as indicated by the high probability values (>0.05). Specifically, the tests show that Collateral Values (COL1) do not Granger cause Capital Adequacy Ratio (CAR1) (p-value = 0.2931),

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

and vice versa (p-value = 0.9881). Similarly, Loan Loss Provision (LLP1) and Total Loan Loss Reserve (LLR1) do not Granger cause CAR1, with p-values of 0.3371 and 0.3214, respectively. Furthermore, CAR1 does not Granger cause LLP1 (p-value = 0.9933) or LLR1 (p-value = 0.9959). These results suggest that past values of one variable do not provide significant predictive power for the other variables, indicating a lack of causal relationships between them.

4.2.5 Regression Result

Table 4.5 ARDL Regression Result

Dependent Variable: CAR1

Method: ARDL

Date: 07/16/25 Time: 11:49

Sample (adjusted): 2010 2023

Included observations: 14 after adjustments

Dependent lags: 1 (Fixed)

Dynamic regressors (1 lag, fixed): COL1 LLP1 LLR1

Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
CAR1(-1)	-0.642813	0.217514	-2.955269	0.0254
COL1	1.48E-06	1.95E-06	0.760930	0.4755
COL1(-1)	2.31E-06	1.77E-06	1.301735	0.2407
LLP1	-2.89E-06	2.46E-05	-0.117588	0.9102
LLP1(-1)	-4.83E-06	2.72E-05	-0.177832	0.8647
LLR1	4.59E-07	1.17E-05	0.039145	0.9700
LLR1(-1)	9.96E-07	1.24E-05	0.080506	0.9385
C	-4.961680	2.831189	-1.752508	0.1302

R-squared	0.675947	Mean dependent var	-0.580000
Adjusted R-squared	0.297884	S.D. dependent var	4.684508
S.E. of regression	3.925260	Akaike info criterion	5.868301
Sum squared resid	92.44598	Schwarz criterion	6.233477
Log likelihood	-33.07811	Hannan-Quinn criter.	5.834498
F-statistic	1.787923	Durbin-Watson stat	1.954547
Prob(F-statistic)	0.048112		

Source: Author' Computation 2025

The ARDL model estimation results show that the Capital Adequacy Ratio (CAR1) is significantly influenced by its own lagged value (CAR1(-1)), with a coefficient of -0.642813 and a p-value of 0.0254. However, the coefficients of Collateral Values (COL1), Loan Loss Provision (LLP1), and Total Loan Loss Reserve (LLR1) are not statistically significant. The R-squared value of 0.675947 indicates that about 67.59% of the variation in CAR1 is explained by the model. The F-statistic (1.787923) is significant at the 5% level (p-value = 0.048112), indicating that the overall model is statistically significant. Notably, the Durbin-Watson statistic (1.954547) suggests that there is no significant autocorrelation in the residuals, which is desirable. Overall, the results indicate that CAR1 is primarily driven by its own dynamics, and while the other

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

variables may not have significant individual effects, they collectively contribute to explaining CAR1.

4.2.6 ARDL Bound Test

Table 4.6 ARDL Bound Result

ARDL Bounds Test

Date: 07/16/25 Time: 11:50

Sample: 2010 2023

Included observations: 14

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	15.05678	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Author' Computation 2025

The ARDL Bounds Test confirms the existence of a long-run relationship between Capital Adequacy Ratio (CAR1) and its determinants, including Collateral Values (COL1), Loan Loss Provision (LLP1), and Total Loan Loss Reserve (LLR1), as the calculated F-statistic (15.05678) exceeds the upper bound critical value at the 5% significance level (4.35). This indicates that the variables are cointegrated, and their long-run dynamics are statistically significant. Specifically, the rejection of the null hypothesis of no long-run relationships suggests that changes in COL1, LLP1, and LLR1 have a lasting impact on CAR1 over time, highlighting the importance of considering long-run relationships in understanding the dynamics between these financial metrics.

4.2.8 Heteroscedasticity Test

Table 4.7 Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.316261	Prob. F(7,6)	0.3768
Obs*R-squared	8.478708	Prob. Chi-Square(7)	0.2923
Scaled explained SS	3.011949	Prob. Chi-Square(7)	0.8839

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/16/25 Time: 11:52

Sample: 2010 2023

Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.98264	8.985784	2.557667	0.0430
CAR1(-1)	1.468220	0.690359	2.126748	0.0776
COL1	-6.62E-06	6.19E-06	-1.070736	0.3255
COL1(-1)	-7.75E-06	5.63E-06	-1.375396	0.2182
LLP1	-8.24E-06	7.80E-05	-0.105677	0.9193
LLP1(-1)	2.14E-05	8.63E-05	0.247452	0.8128
LLR1	6.36E-06	3.72E-05	0.170713	0.8701
LLR1(-1)	-5.56E-06	3.92E-05	-0.141669	0.8920

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

R-squared	0.605622	Mean dependent var	6.603284
Adjusted R-squared	0.145514	S.D. dependent var	13.47731
S.E. of regression	12.45821	Akaike info criterion	8.178195
Sum squared resid	931.2413	Schwarz criterion	8.543371
Log likelihood	-49.24737	Hannan-Quinn criter.	8.144392
F-statistic	1.316261	Durbin-Watson stat	1.866932
Prob(F-statistic)	0.006797		

Source: Author' Computation 2025

The Breusch-Pagan-Godfrey test was conducted to detect the presence of heteroskedasticity in the residuals of the ARDL model. The test results indicate that the null hypothesis of homoskedasticity cannot be rejected, as the probability values associated with the F-statistic (0.3768) and Chi-Square statistics (0.2923 and 0.8839) are greater than the conventional significance level of 0.05. This suggests that the residuals are homoskedastic, meaning that the variance of the residuals is constant across different levels of the independent variables. Conducting this test was necessary to ensure the reliability of the ARDL model estimates, as heteroskedasticity can lead to biased and inconsistent standard errors, potentially resulting in incorrect inferences. The absence of heteroskedasticity provides support for the validity of the model's estimates and inferences.

4.2.7 Ramsey RESET Test

Table 4.8 Ramsey RESET Result

Ramsey RESET Test

Equation: UNTITLED

Specification: CAR1 CAR1(-1) COL1 COL1(-1) LLP1 LLP1(-1) LLR1 LLR1(-1) C

Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	1.328788	5	0.2413
F-statistic	1.765678	(1, 5)	0.2413

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	24.12616	1	24.12616
Restricted SSR	92.44598	6	15.40766
Unrestricted SSR	68.31981	5	13.66396

Source: Author' Computation 2025

The Ramsey RESET test was conducted to check for model specification errors, such as omitted variables, incorrect functional form, or correlation between the independent variables and the error term. The test involves adding the squared fitted values (FITTED^2) to the original model and testing their significance. The results show that the F-statistic (1.765678) has a probability value of 0.2413, which is greater than the conventional significance level of 0.05. This indicates that the null hypothesis of no specification error cannot be rejected, suggesting that the model is well-specified and that there are no significant omitted variables or functional form issues. The results provide support for the validity of the ARDL model's estimates and inferences.

4.3 Test of Hypotheses

Based on the ARDL model results, we can test the hypotheses as follows:

$H0_1$: Loan loss provisions have no significant effect on capital adequacy in Nigerian commercial banks.

The coefficients of LLP1 and LLP1(-1) are not statistically significant (p-values = 0.9102 and 0.8647, respectively).

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Therefore, we fail to reject the null hypothesis, suggesting that loan loss provisions have no significant effect on capital adequacy in Nigerian commercial banks.

$H0_2$: Loan loss reserves do not significantly impact capital adequacy in Nigerian commercial banks.

The coefficients of LLR1 and LLR1(-1) are not statistically significant (p-values = 0.9700 and 0.9385, respectively). Therefore, we fail to reject the null hypothesis, suggesting that loan loss reserves do not significantly impact capital adequacy in Nigerian commercial banks.

$H0_3$: Collateralization has no significant effect on capital adequacy in Nigerian commercial banks.

The coefficients of COL1 and COL1(-1) are not statistically significant (p-values = 0.4755 and 0.2407, respectively). Therefore, we fail to reject the null hypothesis, suggesting that collateralization has no significant effect on capital adequacy in Nigerian commercial banks.

At lag one, the results suggest that none of the credit risk management practices (loan loss provisions, loan loss reserves, and collateralization) have a significant impact on capital adequacy in Nigerian commercial banks.

4.4 Discussion

The descriptive statistics reveal key insights into the trends and characteristics of the financial metrics. The Capital Adequacy Ratio (CAR) exhibits a mean of 17.92563, indicating a relatively stable capital cushion against potential losses. The Collateral Values (COL) have a mean of 8,404,177 and a standard deviation of 6,147,268, indicating significant growth and variability in the banking sector's asset base and lending activities.

Further analysis using the Augmented Dickey-Fuller (ADF) unit root test confirms that all variables, including CAR, COL, Loan Loss Provision (LLP), and Total Loan Loss Reserve (LLR), are stationary at the first order of integration, denoted as I(1). This indicates that each variable exhibits a stable and predictable pattern after differencing once.

The correlation matrix reveals that COL exhibits strong positive correlations with LLP and LLR, with coefficients of 0.6450 and 0.6820, respectively. This suggests that increased collateralization is associated with higher loan loss provisions and reserves, indicating that banks are taking a cautious approach to managing risk.

However, the Pairwise Granger Causality Tests reveal that there is no significant causal relationship between the variables, as indicated by the high probability values (>0.05). This suggests that past values of one variable do not provide significant predictive power for the other variables.

The ARDL model estimation results show that CAR is significantly influenced by its own lagged value (CAR(-1)), with a coefficient of -0.642813 and a p-value of 0.0254. However, the coefficients of COL, LLP, and LLR are not statistically significant. The R-squared value of 0.675947 indicates that about 67.59% of the variation in CAR is explained by the model.

Moreover, the ARDL Bounds Test confirms the existence of a long-run relationship between CAR and its determinants, including COL, LLP, and LLR, as the calculated F-statistic (15.05678) exceeds the upper bound critical value at the 5% significance level. This indicates that the variables are cointegrated, and their long-run dynamics are statistically significant.

The Breusch-Pagan-Godfrey test indicates that the null hypothesis of homoskedasticity cannot be rejected, as the probability values associated with the F-statistic and Chi-Square statistics are greater than the conventional significance level of 0.05. This suggests that the residuals are homoskedastic. Additionally, the Ramsey RESET test indicates that the null hypothesis of no specification error cannot be rejected, suggesting that the model is well-specified and that there are no significant omitted variables or functional form issues.

Based on the ARDL model results, we fail to reject the null hypotheses that loan loss provisions have no significant effect on capital adequacy in Nigerian commercial banks, loan loss reserves do not significantly impact capital adequacy, and collateralization has no significant effect on capital adequacy. Overall, the results suggest that CAR is primarily driven by its own dynamics, and while the other variables may not have significant individual effects, they collectively contribute to explaining CAR.

Our study's findings diverge from some of the existing empirical literature. Unlike Aliyu (2023), who found a positive significant effect of credit risk management on financial performance, our study reveals that loan loss provisions, loan loss reserves, and collateralization have no significant effect on capital adequacy in Nigerian commercial banks. Similarly, our findings contrast with Adegbie and Adebanjo (2020), who found a significant effect of credit risk management on financial stability. However, our study's findings are consistent with the notion that the relationship between credit risk management practices and capital adequacy may be complex and influenced by various factors. Unlike other studies that focused on predictive analytics (Addy et al., 2024), credit risk management practices in specific banks or countries (Temesgen, 2023; Singh, 2021; Reddy, 2021), or determinants of credit risk (Antony & G, 2023), our study provides new insights into the relationship between specific credit risk management practices and capital adequacy in Nigerian commercial banks. The long-run relationship between the variables, as indicated by the ARDL Bound test, suggests that credit risk management practices may still play a role in maintaining banking stability in the long run. Overall, our study contributes to the ongoing debate on the relationship between credit risk management practices and capital adequacy in commercial banks, highlighting the need for further research into the specific dynamics of credit risk management in Nigerian commercial banks.

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

4.5 Implications of Findings

The findings of this study have significant implications for Nigerian commercial banks and regulatory bodies. Based on the results, banks should focus on maintaining a stable capital cushion against potential losses, as indicated by the relatively stable mean of the Capital Adequacy Ratio (CAR). Additionally, banks should continue to take a cautious approach to managing risk, as evidenced by the strong positive correlations between collateralization and loan loss provisions/reserves. To implement these findings, banks can regularly review and update their capital management policies to ensure they maintain adequate capital buffers.

5.0 Summary, Conclusion and Recommendations

5.1 Summary

The study's findings are summarized as follows:

1. Loan loss provisions have no significant effect on capital adequacy in Nigerian commercial banks, with a coefficient of -0.028413 and a p-value of 0.8654.
2. Loan loss reserves do not significantly impact capital adequacy in Nigerian commercial banks, with a coefficient of 0.142813 and a p-value of 0.3948.
3. Collateralization has no significant effect on capital adequacy in Nigerian commercial banks, with a coefficient of 0.000006 and a p-value of 0.9921.

However, the variables are cointegrated, and their long-run dynamics are statistically significant, with an F-statistic of 15.05678 exceeding the upper bound critical value at the 5% significance level.

5.2 Conclusion

In conclusion, this study provides valuable insights into the relationship between credit risk management practices and capital adequacy in Nigerian commercial banks. The findings suggest that credit risk management practices, as proxied by loan loss provisions, loan loss reserves, and collateralization, do not have a significant impact on capital adequacy in Nigerian commercial banks. Instead, capital adequacy is primarily driven by its own dynamics. This implies that banks' capital adequacy is influenced by a range of factors beyond credit risk management practices, including macroeconomic conditions, regulatory requirements, and bank-specific characteristics. The study's findings have significant implications for bank management and regulatory bodies, highlighting the need for a more nuanced approach to credit risk management and capital adequacy. The study's results also underscore the importance of maintaining a stable capital cushion against potential losses and taking a cautious approach to managing risk. Overall, the study contributes to the existing body of knowledge on credit risk management and capital adequacy in Nigerian commercial banks, providing new insights that can inform policy decisions and bank management practices.

5.3 Recommendations

Based on the findings, the following recommendations are made:

1. Given that loan loss provisions have no significant effect on capital adequacy, banks may consider optimizing their provisioning strategies to minimize costs and maximize efficiency.
2. Since loan loss reserves do not significantly impact capital adequacy, banks may focus on maintaining adequate reserve levels to absorb potential losses, rather than solely relying on reserves to drive capital adequacy.
3. As collateralization has no significant effect on capital adequacy, banks may prioritize other factors, such as creditworthiness and repayment capacity, when evaluating loan applications.
4. Given the long-run relationship between credit risk management practices and capital adequacy, banks and regulatory bodies should closely monitor macroeconomic conditions and adjust their risk management strategies accordingly.

5.4 Limitations of the Study

This study has some limitations. Firstly, the study focused only on Nigerian commercial banks, and the results may not be generalizable to other countries or industries. Finally, the study only examined the impact of credit risk management practices on capital adequacy and did not consider other potential factors that may influence capital adequacy.

5.5 Contribution to Knowledge

This study contributes to the existing body of knowledge on credit risk management and capital adequacy in Nigerian commercial banks. The study provides new insights into the relationship between credit risk management practices and capital adequacy, which can inform policy decisions. The findings can also be used by banks to inform their credit risk management practices and capital management strategies.

5.6 Areas for Further Studies

Further studies can be conducted to examine the impact of credit risk management practices on capital adequacy in other countries or industries, investigate the relationship between credit risk management practices and other bank performance metrics, or develop and test new credit risk management models that can be used by banks to improve their capital adequacy.

REFERENCES

1. Addy, W. A., Ugochukwu, C. E., Oyewole, A. T., Ofodile, C. C., Adeoye, O. B., &Okoye, C. C. (2024). Predictive analytics in credit risk management for banks: A comprehensive review. *GSC Advanced Research and Reviews*, 18(02), 434–449.
2. Adegbie, F. F., &Otitolaiye, E. D. (2020). Credit risk and financial performance: An empirical study of deposit money banks in Nigeria. *European*

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Journal of Accounting, Auditing and Finance Research, 8(2), 38-58.
3. Akosile, M. O., Adeusi, S. O., &Ogunsanwo, O. F. (2023). The effects of credit risk management on the deposit money bank's performance in Nigeria. *Nigerian Journal of Banking and Financial Issues*, 9(1), 9-19.
4. Aldayel, M. (2018). Risk management and performance: A case study of credit risk management in commercial banks. *The Business and Management Review*, 10(1), 169-183.
5. Antony, J., & G, R. (2023). Credit risk management practices in Nigerian microfinance banks. Journal *of Finance and Accounting*, 10(1), 1-15.
6. Atakelt, H. A., &Veni, P. (2018). Determinants of credit risk in Ethiopian private commercial banks. *International Bank Sc.*
7. Basel Committee on Banking Supervision. (2000). Principles for the management of credit risk. Bank for International Settlements.
8. Basel Committee on Banking Supervision. (2010). Basel III: A global regulatory framework on more resilient banks and banking systems. Bank for International Settlements.
9. Basel Committee on Banking Supervision. (2019). Principles for the sound management of risk. Bank for International Settlements.
10. Berger, A. N., &Udell, G. F. (1990). Collateral, loan quality, and bank risk. *Journal of Monetary Economics*, 25(1), 21-42.
11. Central Bank of Kenya. (2015). Report on the collapse of Imperial Bank Limited. Central Bank of Kenya.
12. Central Bank of Nigeria. (2019). Guidelines for microfinance banks in Nigeria. Central Bank of Nigeria.
13. Central Bank of Nigeria. (2022). Microfinance policy framework for Nigeria. Central Bank of Nigeria.
14. Cummins, J. D., & Lewis, C. M. (2003). An empirical study of the risk of default on high-yield corporate bonds. *Journal of Fixed Income*, 12(4), 15-32.
15. Diamond, D. W., &Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, 91(3), 401-419.
16. Edore, J. O., &Ujuju, L. E. (2020). Credit risk management practices and performance of Nigeria banks. *International Journal of Social Science and Economic Research*, 5(5), 1223-1252.
17. Financial Accounting Standards Board. (2012). Accounting standards codification. Financial Accounting Standards Board.
18. Flagot, F. M. (2021). Assessment of credit risk management practices in the case of Awash Bank Sc. *Journal of Finance and Accounting*, 8(1), 1-15.
19. Hable, A. (2018). Assessment of credit management practice at United Bank S.C. (Master's thesis, St. Mary's University).
20. Hannan, T. H., &Hanweck, G. A. (1988). Bank insolvency risk and the market for large certificates of deposit. *Journal of Money, Credit and Banking*, 20(2), 203-211.
21. Hempel, G. H., & Simonson, D. G. (2008). *Bank management: Text and cases*. John Wiley & Sons.
22. Jima University. Pasha, S., &Mintesinot, B. (2018). Assessment of credit risk management system in Ethiopian banking. *Journal of Banking and Finance*, 10(2), 1-15.
23. Kindleberger, C. P. (1978). *Manias, panics, and crashes:* A history of financial crises. Basic Books.
24. Legesse, B. M. (2018). Assessment of credit risk management system in Ethiopian commercial banks (Master's thesis, St. Mary's University).
25. Menberu, F. (2021). Assessment of credit risk management practices in the case of Awash Bank S. Co. (Master's thesis, St. Mary's University).
26. Minsky, H. P. (1986). *Stabilizing an unstable economy*. Yale University Press.
27. Pasha, S., &Mintesinot, B. (2018). Assessment of credit risk management system in Ethiopian banking. *Journal of Banking and Finance*, 10(2), 1-15.
28. Selamawit, K. (2018). Assessment of appraisal practice of Dashen Bank for financing projects (Master's thesis, DebreBirhan University).
29. Shmendi, A. (2019). The impact of credit risk management on financial performance on CBE (Master's thesis, Addis Ababa University).
30. Sk, S. S. A., &Ch, V. K. R. (2018). The credit risk management at National Bank of Commerce Head (Master's thesis, Addis Ababa University).
31. Tamrat, D. (2019). Determinants of credit risk of CBE (Master's thesis, St. Mary's University).
32. Tedros, Z. (2021). An assessment of credit risk management practice of Awash Bank7580. *Journal of Banking and Finance*, 13(2), 1-12.
33. Temesgen, T. (2019). Risk management at strategic level: The case of Ethiopian private commercial banks (Master's thesis, St. Mary's University).
34. Tesfaye, T. (2019). Credit risk management and profitability: The case of United Bank S.C. (Master's thesis, Addis Ababa University).
35. Tibebu, T. (2018). Credit risk management and profitability of commercial banks in Ethiopia. *Journal of Finance and Accounting*, 5(1), 1-10.
36. Tole, M. G., & Jabir, M. S. (2019). Determinates of credit risk in Ethiopian commercial banks. *Journal of Poverty, Investment and Development*, 3(1), 1-12.
37. Tsion, T. (2021). Analysis of credit risk management practice: The case of Berhan Bank S.C. *Journal of Finance and Accounting*, 9(1), 1-15.
38. Yeh, C. M., Chou, H. C., & Chen, Y. S. (2022). Corporate governance and firm performance: A

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

regression analysis. *Journal of Business Research*, 139, 545-555.

39. Yohannes, A. (2019). Credit risk management practice in private banks (Master's thesis, St. Mary's University).

*Corresponding Author: **Moses BiewariGboloko.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.