Deposit Money Bank Credit Delinquency and Performance Controversy in Nigeria

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Abstract
This study provided empirical insights by examining both the determinants of loan defaults and the resultant effects on banks' financial performance in Nigeria. It focused on assessing the various credit policies used by the monetary authorities to insulate incessant loan delinquencies and its resultant effect on the performance of deposit money banks in Nigeria. To achieve this study, data for empirical analysis were sourced from the Nigerian deposit insurance cooperation spanning from 1990 to 2023. Error Correction Mechanism was used to estimate the model specified. It was found among others that non-performing loans (credit risks) exert significant impact on bank performance within the period of the study, while average liquidity ratio insignificantly related to bank performance within same period. The researcher recommends among others that the monetary authorities should intensify their regulatory as well as their supervisory role as it concerns the reduction of the volume of bad loans granted by banking system in Nigeria. Therefore, there is need for the Nigerian government to prioritize credit management, particularly in the deposit money banks to foster sustainable performance.

Keywords: *Credit Risk, Liquidity Risk, Return on Assets, ECM, Nigeria*

1. Introduction

The vital role of deposit money banks in any economy cannot be overstated. They serve as intermediaries between savers and borrowers and play a significant role in the liquidity of financial systems. However, the efficiency and operational stability of these banks can be threatened by credit delinquency; a situation where borrowers default on their obligations to repay loans. This issue is particularly pronounced in Nigeria, where the banking sector has faced numerous challenges related to non-performing loans (NPLs) and the overall performance of financial institutions. Credit delinquency remains a major concern for Nigerian deposit money banks, affecting their profitability, liquidity, and overall stability. According to the Central Bank of Nigeria (CBN, 2021), the level of NPLs in the Nigerian banking sector markedly increased during the economic recession triggered by the COVID-19 pandemic, reaching levels that prompted regulatory responses and policy reevaluations. This scenario has brought forth a critical examination of the underlying causes of credit delinquency, necessitating an understanding of the associated factors that lead to such defaults.

Several studies have indicated that various factors contribute to credit delinquency within Nigeria's banking sector. Socioeconomic factors such as unemployment rates and inflation, as well as macroeconomic policies, can significantly influence borrowers' ability to meet their credit obligations (Adebayo & Ajayi, 2020). Furthermore, the quality of loan management practices and the efficacy of risk assessment measures employed by banks also play pivotal roles (Ongore & Kusa, 2013). The lack of comprehensive credit information systems in Nigeria further exacerbates the challenges faced by banks, as it limits their ability to assess borrowers' creditworthiness effectively (Akanji, 2021). The banking sector is pivotal in driving economic development by channeling funds from surplus units to deficit units, primarily through effective credit allocation. For deposit money banks (DMBs), the creation of new credit stands as one of the most lucrative assets, underscoring the significance of proficient credit risk management. The financial performance of these banks is closely tied to their ability to navigate credit risks effectively. Major sources of credit risk include ineffective credit policies, fluctuating interest rates, poor management, inadequate laws, low capital and liquidity levels, insufficient credit assessment, and lax loan underwriting and assessment procedures (CBN, 2013). Economic instability further exacerbates these challenges, making loan repayment more difficult for borrowers due to decreased real wages and excessive concentration in certain portfolios (Chen & Chen, 2012). Consequently, loan defaults have a profound impact on banks' credit management. The importance of credit management in the banking industry cannot be overstated, as it directly affects liquidity, profitability, and risk exposure. Banks that implement robust credit management strategies are more likely to maintain financial stability, ensure customer trust, and promote economic growth (Kargi, 2011). Conversely, inefficient credit management can lead to significant financial distress, resulting in bank failures, diminished investor confidence, and systemic instability in the financial sector. Furthermore, a bank's efficiency in credit management influences its overall financial performance and ability to withstand economic shocks (Kolapo, Ayeni, & Oke, 2012).

In recent years, Nigerian DMBs have encountered substantial challenges in credit risk management, notably due to rising non-performing loans (NPLs), poor loan recovery rates, inadequate credit risk assessment mechanisms, and volatile economic conditions. High NPLs indicate an increasing volume of loans that borrowers fail to repay as scheduled, negatively affecting banks' liquidity and earnings (CBN, 2021). The loan-to-deposit ratio (LDR), measuring the proportion of deposits used for lending, is crucial in credit management. While an optimal LDR ensures banks maximize lending profits, an excessively high LDR escalates liquidity risk, whereas a low ratio limits credit expansion and revenue generation (Ifeacho & Ngalawa, 2014). Another critical aspect of credit management is the loan recovery rate, which assesses how effectively banks reclaim defaulted loans. A low loan recovery rate often signifies weak enforcement mechanisms, poor collateral management, and an ineffective legal framework for debt recovery (Olawale & Ifere, 2020). Similarly, banks set aside provisions for loan losses (PLL) to cover potential defaults; however, excessive provisioning reduces the funds available for investment and lowers profitability (Adeola & Ikpesu, 2017). Additionally, interest rates on loans influence borrowers' repayment capacity, with high rates increasing default risk and lower rates potentially reducing banks' profit margins (Ogege & Shiro, 2021).

The financial performance of banks is often measured using return on assets (ROA) and return on equity (ROE). ROA assesses how efficiently a bank utilizes its assets to generate profit, while ROE evaluates the return generated for shareholders. Empirical studies suggest that inefficient credit management manifested in high NPLs, low loan recovery rates, excessive provisioning, and

poor lending decisions significantly undermines banks' financial performance, leading to reduced profitability and increased financial instability (Ogboi & Unuafe, 2013).

Despite regulatory interventions by the Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC), Nigerian banks continue to grapple with high NPL ratios, poor credit risk management frameworks, and inadequate loan monitoring systems. Several policy reforms, such as the implementation of Basel II and III standards, have been introduced to strengthen risk management practices; yet, their effectiveness remains uncertain due to persistent loan default rates and financial instability in the sector (CBN, 2021). The performance of deposit money banks is directly linked to their credit risk management strategies. Banks with higher levels of NPLs tend to experience reduced profitability, which may result from higher provisioning for bad debts and a decline in net interest income. This cyclical relationship creates a controversy regarding the effectiveness of credit risk management practices implemented in Nigerian banks. Research has shown that inadequate risk management frameworks can lead to higher rates of credit delinquency, which ultimately deteriorates the banks' overall performance (Olokoyo, 2018).

Moreover, the regulatory environment in Nigeria plays a crucial role in shaping the operational landscape for deposit money banks. The CBN has implemented various policies aimed at curtailing credit delinquency and enhancing financial stability. However, the effectiveness of these measures often faces scrutiny due to gaps in enforcement and compliance, as well as the dynamic nature of the economic environment (Adeyemi & Fadugu, 2019). Thus, understanding the interaction between regulatory frameworks and bank performance is essential for addressing the problem of credit delinquency. In light of these considerations, the need for an in-depth exploration of the complexities surrounding credit delinquency and its impacts on the performance of deposit money banks in Nigeria has become increasingly apparent. This study aims to provide empirical insights by examining both the determinants of loan defaults and the resultant effects on banks' financial performance. By synthesizing existing literature and analyzing quantitative data, the research seeks to identify effective strategies to mitigate credit delinquency and enhance the stability of the banking sector. In conclusion, the controversy surrounding deposit money bank credit delinquency and performance in Nigeria necessitates a thorough investigation into the factors influencing loan defaults and the implications for banks' operational efficacy. Understanding these dynamics is vital for policymakers, financial analysts, and banking practitioners seeking to bolster the resilience of the Nigerian financial system.

1.2 Statement of the Problem

The Nigerian banking sector has grappled with persistent issues related to credit delinquency, which poses significant challenges to the performance and stability of deposit money banks (DMBs) (Adebisi & Matthew, 2021). Despite efforts by regulatory bodies, such as the Central Bank of Nigeria (CBN), to manage these challenges, the increasing rate of non-performing loans (NPLs) continues to undermine the profitability and operational effectiveness of financial institutions. The situation has been exacerbated by a volatile economic environment, characterized by fluctuations in oil prices, rising unemployment rates, and inflation, which collectively strain borrowers' ability to service their debts (Jimoh, 2018; Adebayo & Ajayi, 2020).

A major problem facing the banks is the lack of comprehensive and reliable credit information systems that can assist in accurately assessing borrowers' creditworthiness. The absence of such systems has often resulted in banks making poorly informed lending decisions, leading to an increased risk of defaults (Akanji, 2021). Consequently, many DMBs in Nigeria find themselves in a cycle where mounting NPLs necessitate higher provisioning for bad debts, which in turn

negatively affects their financial performance and undermines their overall competitiveness in the banking sector (Olawale & Adegbite, 2020).

Additionally, existing literature highlights the disconnect between the banks' risk management strategies and the actual outcomes of credit performance. Many institutions have adopted risk assessment tools; however, their efficiency and effectiveness in predicting and managing credit risk remain questionable. This gap highlights the need for a thorough investigation into the underlying causes of credit delinquency, as well as the mechanisms that contribute to poor bank performance in Nigeria (Olokoyo, 2018).

Moreover, the regulatory landscape in Nigeria often lacks the necessary enforcement mechanisms to ensure compliance with established lending protocols, leading to a rise in delinquent accounts. The relationship between regulatory policies and the performance of DMBs requires critical examination, as inadequate oversight may further exacerbate the issues of credit delinquency and operational inefficiencies within the banking system (Adeyemi & Fadugu, 2019).

In summary, the convergence of economic factors, inadequate risk management frameworks, and weak regulatory enforcement has culminated in an alarming increase in credit delinquency rates among Nigerian banks. This scenario not only threatens the stability of individual financial institutions but also poses a broader risk to the integrity of the entire banking sector. Therefore, a comprehensive analysis of these challenges is necessary to develop effective strategies for mitigating credit delinquency and enhancing the performance of deposit money banks in Nigeria.

2. Review of Related Literature

2.1 Concept of Credit Management

Credit management is an important issue in any organization and cannot be overlooked by any economic enterprise engaged in credit irrespective of its business nature. It is simply the means by which an entity manages its credit sales, the process which ensures that customers will pay for the products delivered or the services rendered (Nelson, 2002).

Also, Myers and Brealey (2003), describe credit management as methods and strategies adopted by a firm to ensure that they maintain an optimal level of credit and its effective management.

According to Chua and Zhang (2021). Credit management refers to the strategies and policies adopted by financial institutions to ensure efficient credit allocation, monitoring, and recovery while mitigating risks associated with lending (The objective of credit management is to maintain a balance between profitability and risk exposure, ensuring that non-performing loans (NPLs) do not significantly impair a bank's financial stability (Akande, Omotayo & Okon, 2022). Also, Credit Management is extremely important as granting credit is considered to be the equivalent of investing in a customer. However, payment of the debt should not be postponed for too long as delayed payments and bad debts are a cost to the company. (Hettihewa, 1997).

Credit management plays a vital role as it ensures the financial sustainability of banks by minimizing loan default risks and maximizing profitability (Adegbite & Olayemi, 2020). Hence, effective credit management practices ensure that banks maintain a healthy loan portfolio while reducing the risk of financial distress (Akande et al., 2022). Berger and Christa, (2009) added that when credit isn't properly redirected, managed, and regulated, it has a significant negative impact on banks, reducing their production and causing greater hurt and disappointment (Berger and Christa, 2009). Poor credit management and insufficient credit administration, according to Alalade, Binuyo, and Oguntodu (2014), are the main reasons why Nigeria's banking industry is having trouble. For financial institutions to survive and expand, it is essential that credit risk be managed effectively.

The Key Components of Credit Management includes:

i. Non-Performing Loans

Non-performing loans are those loans that are not earning income and full payment of principal and interest is no longer anticipated, principal or interest is ninety days or more delinquent or the maturity date has passed and payment in full has not been made. Non-Performing Loans (NPLs) Ratio measures the percentage of a bank's loans that are overdue beyond 90 days. High levels of NPLs have been linked to deteriorating bank performance, as they reduce profitability and capital adequacy (Beck, Jakubik, & Piloiu, 2015). Also, a high NPL ratio reflects poor credit quality and inefficient loan management (Adegbite & Olayemi, 2020, Hou & Dickinson, 2007).

In addition, Hou (2007) stated that non-performing loans cause insolvency of financial institutions and ultimately hurt the whole economy by causing reluctance by banks to provide credit. In a high NPL condition, banks increasingly tend to carry out internal consolidation to improve asset quality which minimizes granting of loans. High level of NPLs require banks to raise provision for which decreases the banks' revenue and reduces the funds for new lending impairing the corporate sector as they have difficulties in expansion. To manage NPLs effectively, banks must implement strict credit risk assessment policies, conduct borrower due diligence, and strengthen debt recovery mechanisms. Effective monitoring of credit portfolios enables banks to detect potential defaults early, thereby minimizing financial losses (Boudriga, Taktak, & Jellouli, 2009).

ii. Loan Loss Provision

Loan loss Provision represents funds set aside to cover potential defaults. As a result of the difficulties and crises facing banks recently Loan loss Provision (LLP) has a key role to strengthen the financial position of the banks. Beatty and Loan (2009) define LLP as a policy that is followed by commercial banks by putting some money aside (reserves) to face any potential loans default, which in turn would help to protect banks' positions in terms of profitability and capital. The main objectives of LLP is to provide special information about the bank's future, reduce taxes by managing earnings, and management of regulatory capital, managing the level of income volatility and the volatility of earnings and avoiding fluctuations which occur in risk-weighted assets that in turn affect the bank's risk and profitability (Kanagaretnam & Lobo,2010; Bouchekoua et al., 2012; Norden & Stoian, 2013). An increase in loan loss provisions negatively affects profitability by reducing the funds available for investment and lending (Klein, 2013)

An effective provisioning strategy ensures a balance between risk mitigation and financial performance. Banks that allocate sufficient reserves while maintaining profitable lending activities tend to achieve sustainable growth and stability (Chua et al., 2021).

iii. Interest Rates on Loans

Interest rates on loans represents the cost of borrowing which affects repayment behavior. It implied that higher interest rates may increase default risk, while lower rates can lead to increased lending but lower returns. Interest rate is main tool of monetary policy and an important macroeconomic variable. Banks as financial intermediary plays a vital role in operations of economic development and its efficiency can also influence the economic advancement. The financial services provided by banks are quite different from other financial institutions and in return bank charges interest. Depositors provide maximum amount of the funds and they receive interest in return. Interest margin is the difference between the interest paid and the interest received. (Ogege & Shiro,2022).

To optimize performance, banks must develop strategic interest rate policies that align with market conditions, inflation trends, and borrowers' ability to repay loans. A well-balanced interest rate policy ensures that banks maximize earnings while minimizing default risks (Musa & Ibrahim, 2021).

2.1.2 Credit Risk Management Strategies

The credit risk management strategies are measures employed by banks to avoid or minimize the adverse effect of credit risk. A sound credit risk management framework is crucial for banks so as to enhance profitability guarantee survival. According to Lindgren (1987), the key principles in credit risk management process are sequenced as follows; establishment of a clear structure, allocation of responsibility, processes have to be prioritized and disciplined, responsibilities should be clearly communicated and accountability assigned. The strategies for hedging credit risk include but not limited to these;

i. Credit Derivatives: This provides banks with an approach which does not require them to adjust their loan portfolio. Credit derivatives provide banks with a new source of fee income and offer banks the opportunity to reduce their regulatory capital. The commonest type of credit derivative is credit default swap whereby a seller agrees to shift the credit risk of a loan to the protection buyer. Frank Partnoy and David Skeel in Financial Times of 17 July, 2006 said that "credit derivatives encourage banks to lend more than they would, at lower rates, to riskier borrowers". Recent innovations in credit derivatives markets have improved lenders" abilities to transfer credit risk to other institutions while maintaining relationship with borrowers.

ii. Credit Securitization: It is the transfer of credit risk to a factor or insurance firm and this relieves the bank from monitoring the borrower and fear of the hazardous effect of classified assets. This approach insures the lending activity of banks. The growing popularity of credit risk securitization can be put down to the fact that banks typically use the instrument of securitization to diversify concentrated credit risk exposures and to explore an alternative source of funding by realizing regulatory arbitrage and liquidity improvements when selling securitization transactions. A cash collateralized loan obligation is a form of securitization in which assets (bank loans) are removed from a bank's balance sheet and packaged (tranched) into marketable securities that are sold on to investors via a special purpose vehicle (SPV).

iii. Compliance to Basel Accord: The Basel Accord is an international principles and regulations guiding the operations of banks to ensure soundness and stability. The Accord was introduced in 1988 in Switzerland. Compliance with the Accord means being able to identify, generate, track and report on risk-related data in an integrated manner, with full audit ability and transparency and creates the opportunity to improve the risk management processes of banks. The New Basel Capital Accord places explicitly the onus on banks to adopt sound internal credit risk management practices to assess their capital adequacy requirements (Chen and Pan, 2012).

iv. Adoption of a sound internal lending policy: The lending policy guides banks in disbursing loans to customers. Strict adherence to the lending policy is by far the cheapest and easiest method of credit risk management. The lending policy should be in line with the overall bank strategy and the factors considered in designing a lending policy should include; the existing credit policy,

industry norms, general economic conditions of the country and the prevailing economic climate (Kithinji, 2010).

v. Credit Bureau: This is an institution which compiles information and sells this information to banks as regards the lending profile of a borrower. The bureau awards credit score called statistical odd to the borrower which makes it easy for banks to make instantaneous lending decision. Example of a credit bureau is the Credit Risk Management System (CRMS) of the Central Bank of Nigeria (CBN).

vi. Policy Strategy: Banks and other financial institutions should endeavour to have a credit policy manual which should be updated regularly to meet the changing business environment. Such credit manuals should provide rules and regulations guiding the important aspect of work being performed within their credit department. The reason for the manual is to understand and recognize important issues and to ensure consistent thinking and action on these issues by people inside the department. One of the fundamental things to remember is that the work being done by the credit department affects many people and departments within the organization. Graham suggested that the credit policy manual should be detailed and provides guidelines in terms of the following: documentations required; department of credit analysis and format to be used; statutory requirements; approval process; credit procedure; Communication channels between headquarter, the branches and customers; Penalties for defaulters, etc. (Harcourt, 2017).

2.2 Theoretical Review

The theoretical underpinning for this study has been discussed as follows:

2.2.1 The Asymmetric Information Theory

The asymmetric information theory was introduced by Akerlof (1970) and Stiglitz & Weiss (1981). The theory argues that borrowers have better information of their financial conditions and ability to repay loans than lenders (banks). This creates two major problems in credit management: adverse selection (lending to uncreditworthy borrowers) and moral hazard (borrowers engaging in high-risk activities after receiving loans).

This theory underscores the importance of credit scoring models, financial statement analysis, and borrower monitoring in maintaining a sound loan portfolio. The implications is that when banks cannot accurately assess borrower risk, they may issue loans that increase the likelihood of default, resulting in higher NPLs. Also, it suggests that banks should adopt credit screening techniques in order to mitigate moral hazards and the use of credit scoring models and collateral requirements can help reduce information asymmetry.

2.2.2 Agency Theory

Jensen and Meckling (1976) introduced agency theory. The theory explains conflicts of interest between bank management and shareholders. Poor credit management can arise when bank managers prioritize short-term profits over long-term financial stability, leading to excessive risk-taking and increased loan defaults.

2.2.3. Loan Pricing Theory

Loan pricing theory examines how banks set interest rates on loans based on risk levels, funding costs, market competition, and regulatory requirements. The goal is to ensure that loans are priced efficiently to cover default risks, operational costs, and capital requirements, while remaining

attractive to borrowers. The Loan Pricing Theory does not have a single originator, as it has evolved over time through contributions from multiple economists and financial theorists. However, its foundation is built upon key theories related to credit markets, risk assessment, and interest rate determination. (Stiglitz & Weiss, 1981; Black & Scholes, 1973; Merton, 1974)
Loan pricing directly impacts bank profitability, liquidity, and risk exposure. A well-priced loan generate stable income, while underpriced loans lead to low margins and high risk.
While an overpriced loan may drive away creditworthy borrowers, reducing loan volume. Likewise in Liquidity Management, if loans are priced too low, banks may face liquidity shortages. Hence, improper loan pricing can result in high default rates, increasing Non-Performing Loans (NPLs). Banks cannot always set high interest rates. Banks should consider the problems of adverse selection and moral hazard since it is very difficult to forecast the borrower type at the start of the banking relationship. If banks set interest rates too high, they may induce adverse selection problems because high-risk borrowers are willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behaviour or so-called borrower moral hazard since they are likely to take on highly risky projects or investments. From this reasoning, it is usual that in some cases we may not find that the interest rate set by banks is commensurate with the risk of the borrowers.
Loan pricing theory is essential for effective credit management and bank performance. By accurately pricing loans based on risk, banks can reduce loan defaults, improve profitability and ensure financial stability.

2.2.4 Credit Risk theory

Credit risk theory was developed by Merton (1974). It was refined by Basel Committee (1999), credit risk theory explains that higher exposure to default risk negatively affects financial performance. This theory underscores the need for stringent credit control measures to minimize loan defaults and sustain profitability. Hence, the theory suggests that banks must balance risk and expected returns by using risk-based lending models, loan diversification, and proper provisioning for loan losses. Credit risk theory highlights on the relevance of the inclusion of loan loss provisions (LLP) as a risk mitigation strategy and emphasizes the importance of credit risk assessment to minimize defaults.

2.2.5 Liquidity Preference Theory

Liquidity Preference Theory was developed by John Maynard Keynes (1936) in his book 'The General Theory of Employment, Interest, and Money'. The theory explains the demand for money and the relationship between interest rates and liquidity preferences. It states that banks must balance the need for liquidity with their lending operations. It plays a crucial role in credit management and bank performance, influencing how banks allocate resources, set interest rates, and manage liquidity risks. The theory highlights the importance of maintaining sufficient liquidity while lending. A well-managed liquidity structure ensures that banks meet withdrawal demands while sustaining profitability. The theory argues that banks must maintain an optimal balance between liquidity (cash reserves) and profitability (lending activities). Also, it pointed that banks loan-to-deposit ratio (LDR) must be optimized to prevent liquidity crises and Banks should avoid excessive lending without maintaining adequate liquidity buffers ie Banks must balance liquidity holdings with credit allocation, since High liquidity preference may lead to tight lending policies, affecting loan availability.

Hence, it is crucial for credit management as it influences loan supply, interest rates, and risk-taking behavior. It affects bank performance by shaping profitability, stability, and regulatory compliance. Poor credit management can lead to excessive liquidity constraints, reducing profitability and operational efficiency

This study is anchored on credit risk theory and asymmetric information theory. This credit risk theory underscores the need for stringent credit control measures to minimize loan defaults and sustain profitability. Hence, the theory suggests that banks must balance risk and expected returns by using risk-based lending models, loan diversification, and proper provisioning for loan losses. While asymmetric information theory underscores the importance of credit scoring models, financial statement analysis, and borrower monitoring in maintaining a sound loan portfolio. The implications is that when banks cannot accurately assess borrower risk, they may issue loans that increase the likelihood of default, resulting in higher NPLs.

2.3 Empirical Review

The empirical reviews reveal large number of publications have examined Credit Management and Banks Performance with varying results. The examples below show some prior studies;

Animasaun, Omotunwase, Babayanju and Bamgboye (2025) examined the effect of credit risk management on the financial performance of listed DMBs in Nigeria from 2013 to 2022. The study utilized an ex-post facto research design and sampled ten listed banks. Employing Panel Ordinary Least Square (OLS) regression, the findings revealed that credit risk management has a significant effect on return on assets (ROA), with an adjusted R^2 of 0.301 and a p-value less than 0.05. The study concluded that effective credit risk management practices are crucial for enhancing the financial performance of DMBs in Nigeria and recommended that bank management focus on strengthening these practices to ensure sufficient liquidity and mitigate negative impacts on profitability. Ugwu and Agada (2024) evaluated the effect of credit management practices on the financial performance of deposit money banks listed on the Nigerian Exchange Group (NGX) between 2014 and 2023. The study utilized correlation and ex-post facto research methodologies. Data analysis involved descriptive statistics and multiple regressions. Secondary data were sourced from the Central Bank of Nigeria's statistical bulletin and the Audited Annual Reports of the listed deposit money banks in Nigeria. The study used net interest margin (NIM) as a measure of bank performance, while credit risk, liquidity risk, and asset quality served as the independent variables. Firm size was also included as a control variable. The research findings indicate that credit risk has a non-significant negative correlation with financial performance. Additionally, liquidity risk shows a significant negative correlation with financial performance, whereas asset quality demonstrates a non-significant negative correlation with the financial performance of listed deposit money banks in Nigeria. Based on these results, the study recommends that deposit money banks should enhance their capabilities in credit management analysis. Moreover, banks should strive to maintain a well-balanced portfolio of liquid assets that can be quickly converted into cash without significant loss in value. Lastly, banks are advised to conduct thorough asset quality audits to ensure effective management and compliance with all relevant standards and regulations.

Saminu and Ernest (2024) examined credit management mechanisms in quoted banks on the floor of Nigerian Exchange Group, spanning a decade, from 2013 to 2022. Correlational and ex-post facto design were used for the sets of secondary data. Net interest margin was a proxy for financial performance while the explanatory variables were proxy with; asset quality, credit risk and liquidity risk. The random effect regression result showed that, liquidity risk had negative and significant effect on financial performance of quoted banks on the floor of Nigerian Exchange

Group. This showed that, the higher the liquidity risk, the lower the performance level recorded by quoted banks on the floor of
Nigerian Exchange Group. Asset quality and credit risk had negative but insignificant effect on the financial performance of quoted banks on the floor of Nigerian Exchange Group. Therefore, the study recommended that, to mitigate financial failure, quoted banks on the floor of Nigerian Exchange Group should ensure lower liquidity risk.

Oladele and Akinwumi (2024) investigated the effect of reforms and credit management on the performance of deposit money banks in Nigeria. The population comprised all deposit money banks that were listed on the Nigeria Exchange Limited as of December 31st, 2023. The study utilized secondary data obtained from the audited reports of the selected banks and the Nigeria Exchange Limited fact book, spanning a duration of 14 years (2010-2023). The estimation approach used was the fixed and random effect regression. The findings indicated all variables employed for measuring credit risk management have a significant effect on financial performance of deposit money banks in Nigeria. For the operational performance, all the variables except LATD have a significant effect on operational performance of banks in Nigeria. Also, the findings indicated that reform(s) is a significant driver of bank performance in Nigeria. Therefore, the study concluded that credit risk management plays a crucial role in influencing the performance of banks in Nigeria. Consequently, the study, therefore, recommended that Nigerian banks credit risk management should be well entrenched in banks risk management and assessment because of its ability to influence bank performance. Furthermore, it is imperative for regulatory authorities such as the CBN to regularly undertake reforms aimed at enhancing the resilience of the banking industry and enhancing its overall performance.

Ohonba and Aigienohuwa (2024) analyzed the effect of credit management on the financial performance of DMBs in Nigeria, focusing on the non-performing loan ratio (NPLR) and capital adequacy ratio (CAR) from 2012 to 2022. The study found that NPLR has a significant negative effect on ROA, while CAR was found to be insignificant. The authors recommended that banks implement more stringent credit risk assessment measures to reduce the likelihood of borrower defaults, thereby improving financial performance.

Afolabi, Rotimi and Adeyemi. (2024) examined the effect of credit administration on the performance of deposit money banks in Nigeria. The research utilized three explanatory variables, namely non-performing loans, loan loss provisions, and loans and advances, to assess the impact of credit administration on the performance of deposit money banks in Nigeria. The study employed a panel data analysis approach, which involves the analysis of cross-sectional and time-series data. A sample size of five (5) deposit money banks was selected for the research study (Zenith Bank, First Bank PLC, United Bank of Africa, Guaranty Trust Bank, and Access Bank). The findings of the study revealed that non-performing loans had a positive effect on the performance of deposit money banks in Nigeria. The results showed that total loans and advances had a negative effect on the performance of deposit money banks in Nigeria. On the other hand, the negative effect of total loans and advances on bank performance could be attributed to factors such as high default rates, inadequate risk assessment processes, or inefficient credit administration practices. It is important for deposit money banks to strike a balance between expanding their loan portfolios and maintaining high-quality assets to ensure sustainable performance. it is crucial for deposit money banks to continuously review and strengthen their risk management frameworks to ensure they can effectively identify, mitigate, and manage credit risks associated with their loan portfolios. This may involve implementing robust credit scoring models, conducting regular stress testing, and establishing clear policies and procedures for loan monitoring and recovery.

Ebhodaghe, Monday and Alaikhue (2023) investigated the impact of credit risk management on the profitability of DMBs in Nigeria using panel data from 2009 to 2019. The study employed a longitudinal research design and estimated three different models with ROA, return on equity (ROE), and return on investment (ROI) as dependent variables. Non-performing loans (NPL) and loan loss provisions (LLP) were among the independent variables analyzed. The findings indicated that both NPL and LLP exerted negative impacts on ROA, ROE, and ROI across the models. The study concluded that effective credit risk management strategies are essential for enhancing DMBs' profitability and recommended that regulatory authorities and bank management introduce appropriate policies to reduce high profiles of NPL and LLP.

Adu, Uchehara, Oguntuase and Oke-Potefa (2023) studied the effect of liquidity on the credit management of deposit money banks in Lagos State. The objectives of the study were to discover the extent to which current assets are used to manage bank's credit and to examine how liquidity challenges affect bank's profitability. It was found out by the study that the relationship between liquidity and credit management is highly significant with beta = 0.564 reinforced by a P-value of 0.00 (<0.05). This implies that the null hypothesis is rejected and the alternate hypothesis accepted which showed that liquidity has a significant effect on credit management of the deposit money bank while non-current assets have significant effect on the bank's profitability. It was recommended that banks need to take special note of their liquidity level while using credit management strategies to maintain a good and positive credit structure.

To examine the influence of credit risk management on the performance of Nigeria Money Deposit Banks; Olabisi, Sulaiman and Bello-Olatunji (2023) studied credit risk management proxied with non-performing loans and secured loans while the dependent variable 'performance' was proxy with profit after tax margin. 13 money deposit banks were randomly selected for this study. 10 years' period starting from 2010 to 2019 were covered by the study. This study utilized secondary data which were taken from the audited annual report of the selected banks. Descriptive statistics and inferential statistics were employed for this study. The findings of this study revealed that there is negative and significant connection between non-performing loans ratio and profit after tax margin evidenced with t-statistics of -1.9646 and coefficient value of 0.0321 whereas the study revealed that there is a positive significant relationship between secured loans and profit after tax margin of quoted DMB in Nigeria supported by t-statistics of 8.0504 and co-efficient of 0.0000. Hence, this study concludes that credit risk management has significant influence on performance of Nigeria deposit money banks. This study recommends that DMBs should devise plans to push their non-performing loan down to the barest minimum. Also, they should also ensure that a careful appraisal process is followed when extending loans to customers.

Ejem, Okore and Effe-Nnamdi (2023) examined the relationship between credit risk management and performance of deposit money banks in Nigeria. It was mainly conceived to unravel the causes of the incessant loan delinquencies and its resultant effect on the performance of deposit money banks in Nigeria, despite the various credit policies used by the monetary authorities to curtail them. To achieve this study, data for empirical analysis were sourced from the Nigerian deposit insurance cooperation spanning from 1990 to 2020. Error Correction Mechanism was employed to estimate the various models specified. It was found among others that non-performing loans (credit risks) exert significant impact on bank performance within the period of the study, while average liquidity ratio insignificantly relates to bank performance within same period. In the light of the above findings, the researchers recommend among others that the monetary authorities should intensify their regulatory as well as their supervisory role as it concerns the reduction of

the volume of bad loans granted by banking system in Nigeria. Also, that deposit money banks should adopt a workable credit policy to forestall delinquent loans.

Odion, Yusuf and Shuaibu (2022) examined the effect of credit risk management on the profitability of deposit money banks in Nigeria using non-performing loans, loan loss provision and growth in interest earnings on loans and advances as proxies for credit risk management for a period of 5 years, between 2015 and 2021, the impact of these proxies on the profitability of posit money banks was analyzed in this study using correlation and regression analysis. Based on the empirical analysis, the study found a positive non-significant relationship between non-performing loans and profitability. The study also found a positive insignificant relationship between loan loss provision and bank profitability. On the contrary, the study found a negative but significant relationship between growth in interest earnings on loans and advances and the profitability of deposit money banks. they recommended that given the current supervisory and regulatory policy frameworks for banks, credit risk managers should be less concerned with adjustments in the ratios of non-performing loan and loan loss provision as the values of these ratios have no significant effects on performance but should instead be more prudent on the management of the growth in interest earnings on loans and advances as it has a significant effect on performance.

To find out the effect of credit management on financial performance of commercial banks in Eldoret Kenya; Kipkoech and Bogongo (2023) in their study specifically focused on finding out the effects of credit terms, credit standards and collection policy on financial performance of commercial banks operating in Eldoret. The study was guided by both Asymmetric Information Theory, Credit Scoring Theory and Theory of Performance. A descriptive survey design was employed with the target population comprising of 30 licensed commercial banks operating in Eldoret. The unit of observation comprised all branch managers and credit officers from each commercial bank making a total of 177 respondents. A census approach was employed where all the units of observation were included in the study. Both primary and secondary data was utilized in the study where questionnaires collected primary data whereas a secondary data collection sheet was utilized to gather secondary data from printed sources. The data collected was analyzed through both descriptive and inferential statistics. In the study, the descriptive statistics comprised of means, average and standard deviation whereas the inferential statistics comprised of regression correlation analysis. The results of the study established that credit terms, credit standards and collection policy affect financial performance of commercial banks in Eldoret to a positive and significant level.

Olurotimi and Isibor (2020) examined the impact of credit risk management on the financial performance of Nigerian deposit money banks over a 10-year period from 2010 to 2020. Five deposit money banks were used: First Bank Plc, Zenith Bank Plc, Access Bank Plc, Guarantee Trust Bank Plc, and United Bank of Africa (UBA) Plc. Equity returns measured bank performance while credit risk was explained using non-performing credits, capital adequacy ratio, plus provision for credit loss. Fixed plus Random panel regression was used to analyze the panel data and the Hausman test selected the fixed regression for discussion. The findings revealed that capital adequacy ratio and loan loss provision had a significant positive impact on bank performance, while non-performing loans had a significant negative effect. The study recommends that banks should strengthen their credit risk management practices, including effective credit assessment, monitoring, and diversification, to enhance their financial performance and stability.

Omorokunwa and Ogbeide (2020) investigated effect of credit risk management on the profitability of quoted deposit money bank in the Nigerian capital market. The panel regression system was applied in the estimation of the panel data from 2006 to 2018 covering 12 banks in

Nigeria. The return on the asset was used as a proxy for bank performance (dependent variable) and the bank nonperforming loan ratio, bank loan to deposit ratio as well as bank leverage were used as the independent variables. The result of the empirical tests showed a significant relationship between credit management and bank performance. The bank non-performing loan ratio had an indirect (negative) relationship with the performance of the banks. On the other hand, a bank loan to deposit ratio had a direct impact on the performance of banks in Nigeria. However, bank leverage did not have any impact on the performance of the banks in Nigeria. It is, therefore, recommended that bank credit should be channeled to self-liquidating projects as well as monitored and managed efficiently to boost bank performance.

Ajao and Oseyomon (2019). This study investigates the relationship between credit risk management and the performance of Deposit Money Banks (DMBs) in Nigeria over the period 2006-2016 using the dynamic Generalized Method of Moments (GMM) and Granger causality techniques. The empirical results revealed a direct and statistically significant relationship between DMBs credit risk management variables measured by capital adequacy ratio, liquidity ratio, non-performing loan ratio and loan loss provision ratio and performance measured by return on asset. However, there is a significant inverse relationship between liquidity ratio and DMBs performance which is an indication that excess liquidity not properly managed as credit facility will eventually leads to a reduction in the financial performance of DMBs. The study recommends that rigorous credit risk management practice is of utmost importance to ensure long term survival of banks in their turbulent operating environment. Besides, Nigeria DMBs need to devise strategies that will limit the banks' exposition to credit risk and improve their performance and competitiveness.

Harcourt (2017) investigates the impact of credit risk management on the performance of deposit money banks in Nigeria using the over parameterized and parsimonious ECM and Granger causality. Data for the study were sourced from the CBN Statistical Bulletin, stock exchange fact book and World Development Indicators (WDI) for the period 1989 to 2014. The findings demonstrate that the selected credit risk management indicators under study significantly impact on the performance of deposit money banks measured as return on assets (ROA) and return on equity (ROE). The findings also showed evidence of significant granger causality relationship between the various credit risk management indicators and the various measures of performance. There is a uni-directional granger causality relationship from LDR to ROA and from NLTL to ROE respectively. Based on the findings of the study, it is therefore recommended that deposit money banks should be cautious in setting credit policies so as not to negatively affect their operations, and ensure judicious utilization of deposits and maximization of profits in both the short and long term.

Patrick, Ikenna and Ekemezie (2017) investigated the impact of credit risk management on the performance of commercial banks in Nigeria. Financial reports of seven commercial banking firms were used to analyze for seven years (2005 – 2011). The panel regression model was employed for the estimation of the model. In the model, Return on Equity (ROE) and Return on Asset (ROA) were used as the performance indicators while Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) as credit risk management indicators. The findings revealed that credit risk management has a significant impact on the profitability of commercial banks in Nigeria.

Ogbulu and Eze (2016) investigated the impact of credit risk management on the performance of deposit money banks in Nigeria using the ECM and Granger causality techniques in addition to the IRF and VDC methodology. Data for the study were sourced from the CBN Statistical Bulletin and the Annual Reports and Accounts of the NDIC for the period 1989 to 2013. Our findings demonstrate succinctly that the selected credit risk management indicators under study

significantly impact on the performance of deposit money banks measured as return on equity, return on total assets, and return on shareholders' fund respectively. However, the findings report no evidence of significant granger causality relationship between the various credit risk management indicators and the various measures of performance except for a uni-directional granger causality relationship from ROE to RNPD and from ROTA to RNPS respectively. Based on the foregoing, it is recommended that given the observed significant relation between credit risk management and performance, deposit money banks in Nigeria should always pay particular attention to their credit risk management policies in order to significantly improve on the performance of these banks.

Uwalomwa, Uwuigbe and Oyewo (2015) assessed the effects of credit management on banks's performance in Nigeria. In achieving the objectives identified in this study, the audited corporate annual financial statement of listed banks covering the period 2007-2011 were analyzed. More so, a sum total of ten (10) listed banks were selected and analyzed for the study using the purposive sampling method. However, in an assessing the research postulations, the study adopted the use of both descriptive statistics and econometric analysis using the panel linear regression methodology consisting of periodic and cross-sectional data in the estimation of the regression equation. Findings from the study revealed that while ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and unsecured loan ratio and bank's performance was not significant. Hence, the study recommends that banks management should put in place or institute sound lending framework, adequate credit administration procedure and an effective and efficient machinery to monitor lending function with established rules.

3. Methodology

3.1 Sources of Data

The study employed aggregated data collected from Nigeria Deposit Insurance Commission (NDIC) for credit risk proxied by non-performing loan to total loan (NPLTL) (non–performing loans) and average liquidity ratio (ALR) and return on assets (a proxy of bank performance) from 1990 to 2023.

3.2. Model Specification

The function model is as follows.

Bank Performance = f (Risk Factor) (1)

Bank Performance = f (Non-performing Loan to Total Loal, Average Liquidity Ratio) (2)

ROA = f (NPLTL, ALR) (3)

$\ln ROA = b_0 + b_1 \ln NPLTL + b_2 \ln ALR + e_t$ (4)

Where, ROA = Return on Asset (Bank Performance)

NPLTL = Non-performing Loan to Total Loal

A LR = Average Liquidity Ratio

e_t = Stochastic Elements

3.3 Technique of Data Analysis

In this study, the following tools are employed in the analysis and estimation; Descriptive Statistics is employed to describe the variables. In testing for multicollinearity, the correlation matrix is engaged. Ordinary Least Square (OLS) is employed to examine the global utility of the model. Augmented Dickey Fuller (ADF) unit root test is used to check the stationarity of the variables, Johansen Cointegration Test, Error Correction Model (ECM) and Granger Causality.

3.4. Apriori Expectation

It is expected that ROA = f (NPLTL, ALR), $f_1, f_2 > 0$. f_1, f_2 are the coefficients of NPLTL, and ALR respectively. It is expected that credit management will significantly affect the performance of deposit money banks.

4. Data Presentation and Analysis

4. 1. Data Presentation and trend analysis.

Data on Return on asset (ROA), a proxy of Bank performance, non-performing loan to total loan (NPLTL) and Average liquidity ratio (ALR) are used.

The time series plot of the data is shown in figure I below. The figure below shows that all variables (ROA, NPLTL and ALR) trended upward and downward, sometimes undulation over the period of the study, except ROA that was trended smoothly with sharp upshoot in 2010, indicating non-stationarity of the variables as expected. In all, the variables there are periods of troughs and peaks. It can be recognized as outliers in the years.

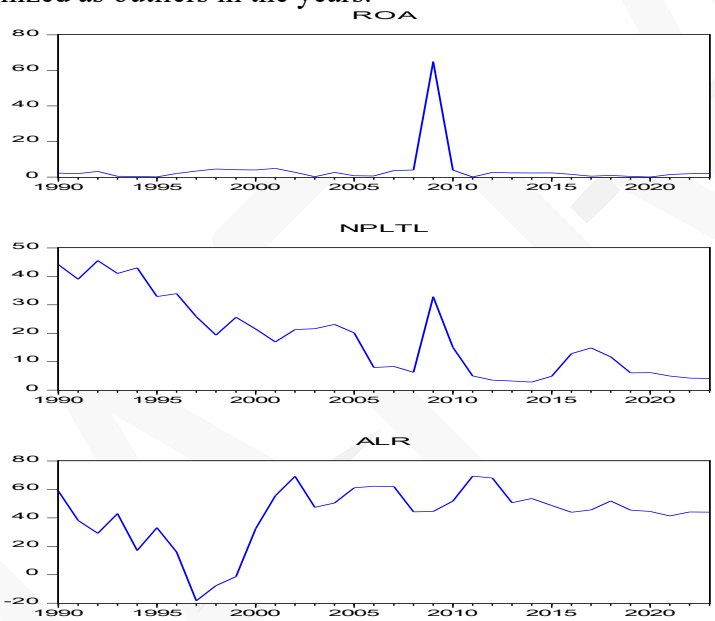


Figure 1: Trend Analysis of ROA, NPLTL and ALR

4.2. Descriptive Statistics

Table 4.2 below shows the summary of statistics that describe the distributional features of all the data. The variables recorded average of the following: 3.88%, 18.5% and 42.32%.for ROA, NPLTL, and ALR respectively. This shows ALR is higher than other variables, while ROA is the least. The risk (standard deviation) inherent in each of the variables are 10.87%, 13.66% and 20.62% for ROA, NPLTL, and ALR respectively. These also suggest that ALR is the most volatile with ROA recording the least. ROA, and ALR showed Kurtosis greater than 3, suggesting a leptokurtic distribution, which is excess from the normal distribution. NPLTL has Kurtosis lower than 3 indicating platykurtic distributions, suggesting that small shocks of either sign are likely to present itself with economic volatility within the scope of the study. Jarque-Bera normality distribution test statistical probability values show that ROA, and ALR have abnormal distribution while NPLTL is normally distributed. ALR has skewness with negative coefficients, confirming asymmetry in the series. It is important to point out that the skewness is negatively skewed

suggesting the distribution has a long-left tail. This shows large negative movements in interest rate are not normally followed by the same magnitude of positive movement, whereas ROA and NPLTL have positive skewness, suggesting otherwise. The wide differences in Maximum and minimum values for all the variables show conspicuous fluctuations within the scope of the study.

Table 4.2: Descriptive Statistics of ROA, NPLTL, and ALR

	ROA	NPLTL	ALR
Mean	3.887059	18.50147	42.32882
Median	2.080000	15.97000	44.95000
Maximum	64.92000	45.50000	69.29000
Minimum	0.020000	2.810000	-18.30000
Std. Dev.	10.87897	13.66873	20.62383
Skewness	5.417746	0.588939	-1.334809
Kurtosis	30.93257	2.102441	4.558055
Jarque-Bera	1271.652	3.106764	13.53539
Probability	0.000000	0.211531	0.001150
Sum	132.1600	629.0500	1439.180
Sum Sq. Dev.	3905.617	6165.527	14036.30
Observations	34	34	34

4.3 Global Utility Test:

In macroeconomic analysis, it is pertinent to check the global utility or usefulness of the specified models. To achieve this, the researchers engaged correlation matrix and ordinary least square.

Multicollinearity Test

Table 4.3 below reveals the correlation of the variables. The correlations between NPLTL, ALR and ROA are -0.019194 and 0.182532 respectively, between NPLTL and ALR is -0.389066. The highest value here is 0.182532 which shows that the variables are not linearly correlated. Therefore, the researchers have sufficient evidence to say no presence of multicollinearity in the model.

Table 4.3: Correlation Matrix

	ROA	NPLTL	ALR
ROA	1	0.182532	-0.019194
NPLTL	0.182532	1	-0.389066
ALR	-0.019194	-0.389066	1

The researchers now proceeded to check the global usefulness of our model by using Ordinary Least Square (OLS) method as shown in Table 4.4 below.

Table 4.4 below depicts the Ordinary Least Square (OLS) estimated model for the relationship between credit risk variables and performance of deposit money banks.

Table 4.4: Ordinary Least Square (OLS) Methods

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPLTL	0.164188	0.152318	1.077933	0.2894
ALR	0.032212	0.100951	0.319091	0.7518

C	-0.514177	6.256348	-0.082185	0.9350
R-squared	0.036483	Mean dependent var		3.887059
Adjusted R-squared	-0.025680	S.D. dependent var		10.87897
F-statistic	0.586896	Durbin-Watson stat		1.781555
Prob(F-statistic)	0.562110			

From the table above, Durbin-Watson statistics is 1.781555, showing absence of autocorrelation. But F-statistic value is 0.586896 with probability value of 0.562110 showing that null hypothesis cannot be rejected; there is overall insignificance and invalid for comparison. Therefore, cannot be used for further analysis and policy formulation.

4.4. Stationarity/Unit Root Test:

This is statistical valid procedure in macroeconomics time series analysis that assists to determining the best estimation method for the data. It is due to the peculiarities of time series data. To do this the popular Augmented Dickey Fuller (ADF) unit root/stationary test is used as shown below.

Table 4.5 Augmented Dickey-Fuller (ADF) Unit Root Test

Variables	Max. Lag	ADF Statistic	Probability	Remarks
LnROA	8	-5.922172	0.0000	@1(1)
LnNPLTL	8	-5.442689	0.0001	@1(1)
LnALR	7	-6.321464	0.0000	@1(1)

Source: Authors' computation with E-view 10

Table 4.5 below reveals the summary of stationarity test for both level and first difference data. The results indicate that all integrated at order one.

4.5. Cointegration and Long run Relationship Test

This is necessary to know if there exist equilibrium relationships between the independent variables (NPLTL and ALR) and the dependent variable (ROA) as shown below;

Table 4.6: Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.889895	52.88937	29.79707	0.0000
At most 1	0.263022	6.556545	15.49471	0.6297
At most 2	0.006995	0.147409	3.841466	0.7010
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.889895	46.33282	21.13162	0.0000

At most 1	0.263022	6.409137	14.26460	0.5613
At most 2	0.006995	0.147409	3.841466	0.7010

Authors' computation output using E-view 12

Table 4.6 above revealed that unrestricted rank tests (Trace and Maximum Eigenvalue) co-integrations are at "None" respectively, suggesting 1 co-integration equation each at 5% level of significance among the variables. This shows that long run relationship exists between the dependent variable deposit bank performance proxied by ROA and credit management in Nigeria within the scope of this study.

4.6 Estimation of Relationship between Deposit Bank Performance and Credit Management

Having confirmed the preliminary finametric statistical test, the researcher confidently proceeded to estimating the relationship between deposit bank performance and credit management in Nigeria with ECM.

Table 4.7: Error Correction Mechanism Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNNPLTL(-1))	-0.275636	0.731677	-0.376718	0.7104
D(LNNPLTL(-2))	-1.356644	0.611539	-2.218411	0.0383
D(LNALR(-1))	-0.911700	1.292849	-0.705187	0.4888
D(LNALR(-2))	-1.403511	1.314915	-1.067377	0.2985
ECT(-1)	-0.786201	0.235115	-3.343897	0.0032
C	-0.283484	0.339133	-0.835907	0.4131
R-squared	0.530790	Mean dependent var		-0.008042
Adjusted R-squared	0.413488	S.D. dependent var		2.159621
S.E. of regression	1.653926	Akaike info criterion		4.043355
Sum squared resid	54.70941	Schwarz criterion		4.333685
Log likelihood	-46.56361	Hannan-Quinn criter.		4.126959
F-statistic	4.524974	Durbin-Watson stat		1.966609
Prob(F-statistic)	0.006382			

Authors' computation output using E-view 12

Table 4.7 above reveals that NPLTL at lag 2 has negative and significant impact on ROA, while ALR insignificantly relates to ROA. The adjusted R-square is 0.413 suggesting that the explanatory variables jointly account for 41.3% of total variation of ROA. The probability of F-Statistic is 0.006382, an indication that the estimated model is significant (overall significance). Durbin-Watson Statistics (Dw) is 1.966609 informing the researcher not to border about autocorrelation. The ECM has coefficient of -0.2203318 with p-value 0.0421, suggesting it is correctly signed or fitted. The researcher can boldly say that the model did a good job to describe the relationship between credit variables and performance of deposit money banks in Nigeria.

4.7. Residual Diagnostic and Stability Tests

This study used Normality test, Serial correlation test, Heteroscedasticity test and Recursive Estimates of the CUSUM (Cumulative Sum Control) Test for diagnostic and stability test.

Table 4.8: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.203265	Prob. F(2,18)	0.8179
Obs*R-squared	0.574242	Prob. Chi-Square(2)	0.7504

Table 4.9: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.415043	Prob. F(5,20)	0.2616
Obs*R-squared	6.794243	Prob. Chi-Square(5)	0.2364

The results in tables 4.8 and 4.9 revealed of both Serial correlation and Heteroskedasticity tests showed that F-statistic and Obs*R-squared p-values are greater than the 5% level of significance, suggesting absence of serial correlation and no Heteroskedasticity in the model.

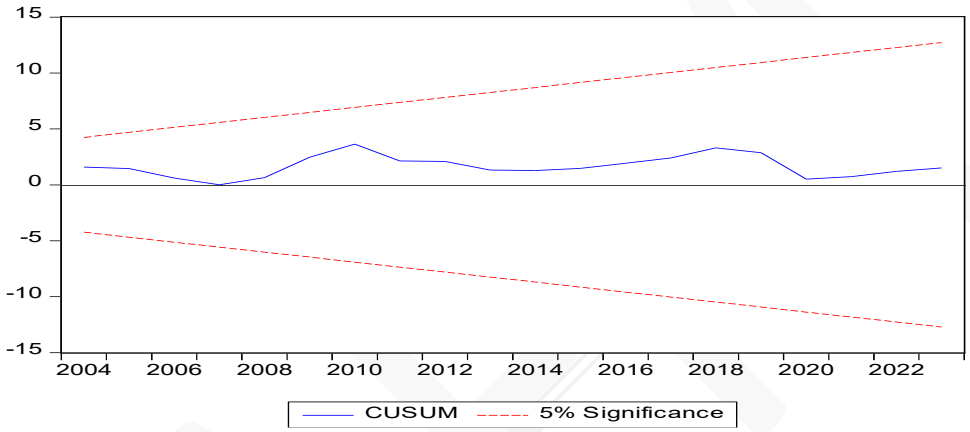


Figure 2: Recursive Estimates of the CUSUM (Cumulative Sum Control) Test

Recursive Estimates of the CUSUM in figure 2 above showed that the blue line falls between the two red lines showing the 5% significance level boundaries. This confirmed that the model is stable.

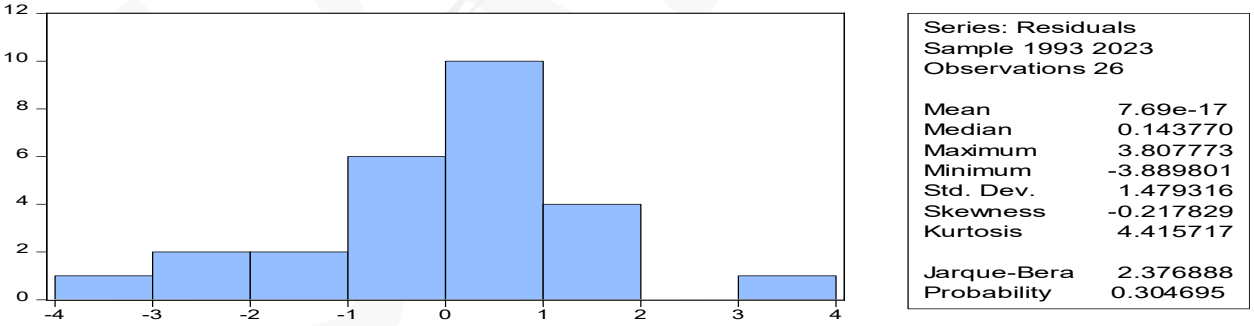


Figure 3: Normal Distribution Test

Histogram normality in Figure 3 revealed that the coefficient of Jarque-Bera 2.376888 with p-value of 0.304695; the p-value is more than 5% level of significance established in this study. This showed that the data set is normally distributed

4.6 Discussion of findings

In this study, credit risk and performance of deposit bank in Nigeria, after subjecting it to empirical analysis, the following results were found; that deposit money banks' nonperforming loans exert significant, though negative at lag 2 effect on return on assets. while average liquidity ratio

(liquidity risk) insignificantly impacts bank performance within same period. These results agree with the findings of Wood and McConney (2018). It corroborates the results of Okere, Isiaka and Ogunlowore (2018); Njoku, Ezeudu and Ekemezie (2017); Ogunlade and Oseni (2018). It contradicts the findings of Solomon (2015) and Ogbulu and Eze (2016) that credit risk management exerts a positive impact on the performance of banks and other financial institutions. This result signposts that Deposit Money Banks in Nigeria are living up to expectation on extending loans to customers and other economic agents, but due to noncompliance of customers on loan repayment, it will impact adversely on the performance of Deposit Money Bank. This is because Deposit Money Banks credits are short term in nature, thus non-repayment on maturity of the loan will automatically affect their performance.

5. Conclusion and Recommendation

Credit risk which seems to be inherent in the management of Deposit Money Banks (DMBs) in Nigeria is unavoidable hence should be traded with caution. Therefore, an effective management of banking risk requires a well-articulated risk management policies and strategies. This assists the bank managers to think through the totality of its operations and the risk associated with the operations, see the risk in totality as affecting the bank as a corporate entity rather than as individual risk affecting separate departments and units of the banks, assign responsibility and establish the machinery for implementation, appraisal and review.

Therefore, credit risk, and liquidity risk are seen to be critical to running of banks. Credit risk is the riskiest component of the risk items in the banking sector. This can easily be adduced from the analysis conducted. A practical case is that of Sky Bank that was recently taken over by the CBN due to nonperforming and delinquent loans paraded by the bank. However, credit risk which is very cancerous can seriously cripple the success and performances of banking sector. The following recommendations are made.

i. In the light of the above findings and conclusions, the researcher recommends that the monetary authorities should intensify their regulatory as well as their supervisory role as it concerns the reduction of the volume of bad loans granted by banking system in Nigeria.

ii. Also, adequate credit administration, measurement, monitoring processes and good control over credit, liquidity, and other risk components.

iii. Again, the government through their agency (CBN) should be careful of nonperforming loads since if neglected, generates mayhem and tsunami to the banking sector and the economy in general.

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