CREDIT RISK EXPOSURE, DEPOSIT MOBILISATION, AND PROFITABILITY DYNAMICS IN EMERGING ECONOMIES: EVIDENCE FROM FIXED AND RANDOM EFFECTS MODELS

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DOI: https://doi.org/10.57233/gujaf.v7i4.05

Abstract
This study investigates the effect of credit risk management on bank profitability in Nigeria using a panel dataset of listed commercial banks over the period 2000-2023. The study employs two econometric models with earnings per share (EPS) and profit after tax (PAT) as dependent variables, while non-performing loans (NPL), loan loss provisions (LLP), loans-to-assets (LA), and deposit mobilisation (TD) serve as explanatory variables. The panel regression results show that loan expansion (LOGLA) has a strong and statistically significant positive effect on profitability, particularly PAT, where the coefficient is 0.75 (fixed effects) and 0.79 (random effects) at 1% significance. Non-performing loans exhibit an insignificant relationship with both EPS and PAT, while loan loss provisions show mixed effects across models. Deposit mobilisation (LOGTD) negatively affects EPS in the fixed-effects model (-4.43, $p < 0.05$) but remains insignificant in PAT estimations. The study concludes that profitability in Nigerian banks is more strongly driven by lending activity than by credit risk quality indicators, highlighting inefficiencies in credit risk governance and intermediation processes.

Keywords: Bank profitability, credit risk management, deposit mobilisation, loan loss provisions, non-performing loans, panel regression

1.0 Introduction

Bank profitability remains a central concern in financial intermediation, particularly in emerging economies where credit markets are volatile and risk exposure is high. Commercial banks play a key role in mobilising deposits and allocating credit, yet their performance is often constrained by rising credit risk and weak loan recovery systems. According to Allen and Santomero (1997), banks exist primarily to manage risk through intermediation, but inefficiencies in this process can erode profitability. In developing banking systems, non-performing loans and inadequate risk buffers continue to weaken financial stability and reduce shareholder returns. Empirical evidence suggests that credit risk and liquidity pressures jointly shape bank outcomes, especially when macroeconomic conditions are unstable (Ghenimi et al., 2017). Despite regulatory reforms in Nigeria, profitability indicators such as EPS and PAT have remained highly volatile across listed banks, indicating persistent structural risk challenges.

The literature further highlights that credit risk management is not only about loan quality but also about provisioning strategies, capital adequacy, and deposit mobilisation efficiency. Saleh and Abu Afifa (2020) argue that both credit and liquidity risks significantly influence bank profitability, especially in environments with weak risk governance. Similarly, Antony and Suresh (2023) show that non-performing loans and credit concentration directly affect bank earnings through asset quality deterioration. In addition, Scannella and Polizzi (2021) emphasise that disclosure practices in credit risk management improve market discipline and reduce uncertainty. However, in many emerging markets, including Nigeria, such practices remain inconsistent. The interaction between liquidity risk drivers and business models also complicates profitability outcomes, as banks often trade-off between liquidity safety and credit expansion

(Galletta & Mazzù, 2019). These mixed findings suggest the need for further empirical validation using firm-level panel data.

In the Nigerian context, studies have increasingly focused on how credit risk affects bank performance, but findings remain inconclusive and often methodologically limited. Adeloye and Olaolu (2025) and Adetayo and Oladele (2025) both report that credit risk management significantly influences financial performance, yet their analyses rely largely on cross-sectional approaches. Similarly, Omobolade et al. (2020) identify determinants of credit risk but do not fully integrate profitability measures such as EPS and PAT. Furthermore, Rasyid and Bangun (2023) highlight the importance of liquidity risk and income diversification, but their study does not isolate credit risk components like NPL ratios or loan loss provisions. This creates a clear empirical gap in the literature regarding the simultaneous effect of credit risk indicators on multiple profitability measures under a panel framework. The absence of long-run firm-level analysis covering post-consolidation Nigerian banks further limits policy relevance.

This study is guided by three specific objectives. First, it examines the effect of non-performing loans (NPL) on the profitability of Nigerian commercial banks, measured by earnings per share (EPS) and profit after tax (PAT). Prior studies suggest that rising NPL ratios reduce profitability through asset quality deterioration and increased default exposure (Nguyen, 2023; Antony & Suresh, 2023). However, evidence from Nigeria remains fragmented, particularly over long time periods. Second, the study evaluates the impact of loan loss provisions (LLP) and loan-to-deposit and loan-to-asset structures on bank profitability. These indicators reflect banks' risk absorption capacity and liquidity positioning, which are critical in determining earnings stability (Chen et al., 2024; Galletta & Mazzù, 2019). Third, it investigates how deposit mobilisation and credit risk exposure jointly influence profitability, recognising that strong deposit bases may offset credit risk shocks and improve resilience (Ghenimi et al., 2017).

Methodologically, this study adopts a panel regression framework covering listed Nigerian commercial banks from 2000 to 2023, allowing for both cross-sectional and time-series variations. This approach improves estimation efficiency compared to earlier single-period analyses and captures heterogeneity across banks. The model specifies EPS and PAT as dependent variables, while NPL ratios, LLP, loan-to-asset, and deposit ratios serve as explanatory variables. This structure aligns with financial intermediation theory, which emphasises risk-return trade-offs in banking operations (Diamond, 1984; Allen & Santomero, 1997). The inclusion of both fixed and random effects models further strengthens robustness and helps identify consistent relationships across different estimation techniques.

The structure of the article is organised as follows. The next section reviews relevant theoretical and empirical literature on credit risk and bank profitability, drawing on global and emerging market evidence. This is followed by the methodology section, which explains the data sources, variable construction, and econometric models used in the analysis. The results section presents descriptive statistics, regression outputs, and diagnostic tests, while also interpreting key findings in relation to existing literature. The final section concludes the study, highlighting policy implications for bank regulators and management, and offering recommendations for improving credit risk governance and profitability stability in Nigerian commercial banks.

2.0 Literature Review

The relationship between credit risk management and bank profitability is grounded in the theory of financial intermediation, which explains the role of banks as risk-bearing institutions that allocate funds between savers and borrowers. According to Allen and Santomero (1997), banks exist primarily to manage informational and transaction frictions while transforming risky assets into relatively safe liabilities. This transformation process inevitably exposes banks to credit risk, liquidity risk, and market risk. Diamond (1984) further strengthens this view through the delegated monitoring theory, arguing that banks reduce monitoring costs by acting as intermediaries between lenders and borrowers. However, this role also concentrates risk within banking institutions, making effective credit risk management essential for sustainability.

Building on this theoretical foundation, Jorion (2009) emphasizes that risk management in financial institutions is not merely a defensive strategy but a value-creating function when properly executed. Poor risk assessment, especially in loan portfolios, reduces expected cash flows and weakens shareholder value. Similarly, Walker et al. (2002) and Van der Vegt et al. (2015) argue that enterprise risk management frameworks help banks integrate credit, liquidity, and operational risks into a unified system that enhances resilience and profitability. In this sense, profitability is not only a function of revenue generation but also of how efficiently risks are identified, priced, and controlled.

Liquidity risk theory also complements credit risk literature. Allaj (2017) explains that liquidity risk arises when banks cannot meet short-term obligations without incurring losses, often triggered by poor credit performance. Galletta and Mazzù (2019) further show that liquidity risk is deeply embedded in bank business models, meaning that aggressive lending strategies can increase both liquidity pressure and credit exposure simultaneously. Ariffin (2012) supports this argument by demonstrating that liquidity risk management has a direct effect on financial performance, especially in banking systems with limited capital buffers.

In recent financial systems, technological transformation has added another layer to risk management theory. Bavoso (2022) highlights how fintech-driven intermediation is reshaping traditional banking models, introducing both efficiency gains and new credit risk challenges. Similarly, Chen et al. (2024) show that liquidity management practices significantly influence bank performance, particularly in periods of financial stress. These developments suggest that credit risk management must now be understood within a broader digital and systemic risk framework rather than as an isolated banking function.

Risk interdependence is another important theoretical perspective. Ghenimi et al. (2017) argue that credit risk and liquidity risk are interlinked, meaning that deterioration in loan quality often triggers liquidity shortages and reduces stability. Saleh and Abu Afifa (2020) reinforce this by showing that credit risk, liquidity risk, and capital adequacy jointly determine profitability outcomes. This interconnectedness implies that isolating one risk variable may underestimate its true impact on performance.

From a macro-financial perspective, Ngambou Djatche (2025) demonstrates that monetary shocks influence bank risk-taking behaviour and credit supply decisions, which ultimately affect profitability. Similarly, He et al. (2025) show that economic policy uncertainty and digital transformation increase systemic risk exposure in banking systems. These findings suggest that

external macroeconomic forces significantly shape how credit risk translates into profitability outcomes.

Overall, theoretical literature consistently positions credit risk management as a central determinant of bank performance, while also highlighting its interaction with liquidity risk, macroeconomic conditions, and institutional frameworks. However, despite these insights, there remains limited integration of these theories within a unified empirical framework, particularly in emerging markets like Nigeria where structural banking challenges persist.

Empirical Literature

Empirical studies across different regions consistently show that credit risk is a key determinant of bank profitability, although the magnitude and direction of the relationship vary. Antony and Suresh (2023) find that non-performing loans significantly reduce profitability in Indian banks, while Bhuiya et al. (2023) report similar results in Bangladesh. In African contexts, Ghenimi et al. (2017) show that both credit and liquidity risk negatively affect bank stability, which indirectly reduces profitability. These findings align with Saleh and Abu Afifa (2020), who conclude that higher credit risk exposure leads to lower returns in emerging markets.

In Nigeria, evidence is equally mixed but generally supports a negative relationship between credit risk and profitability. Adeloye and Olaolu (2025) and Adetayo and Oladele (2025) both find that credit risk management significantly affects financial performance of listed banks. Omobolade et al. (2020) further identify key determinants of credit risk, including loan concentration and macroeconomic instability. However, these studies often rely on simplified models that do not fully capture the dynamic interaction between multiple credit risk indicators such as non-performing loans, loan loss provisions, and deposit structure.

Loan loss provisions (LLP) have also received attention in empirical literature. Scannella and Polizzi (2021) argue that higher credit risk disclosure improves transparency and reduces market uncertainty, indirectly supporting profitability. However, Nguyen (2023) finds that excessive provisioning can reduce short-term profitability, even if it improves long-term stability. Chen et al. (2024) similarly show that liquidity and provisioning strategies significantly influence bank performance outcomes, suggesting a trade-off between prudence and profitability.

The role of liquidity and deposit structure is another important empirical dimension. Rasyid and Bangun (2023) show that liquidity risk and income diversification jointly affect bank performance, while Galletta and Mazzù (2019) emphasize that bank business models determine exposure to liquidity shocks. Adusei (2021) also finds a strong liquidity–profitability nexus, suggesting that banks with better liquidity management perform more efficiently. In contrast, Ariffin (2012) highlights that poor liquidity risk management reduces financial performance, especially in emerging banking systems.

Cross-country evidence reinforces these findings. Haris et al. (2024) show that during COVID-19, banks with higher credit risk experienced significant profitability declines. In a similar vein, Hunjra et al. (2022) find that firm-specific risks, including credit exposure, negatively affect bank performance. Kinkani and Tumana (2025) report that credit risk management improves profitability in African commercial banks, though the effect depends on governance quality and regulatory enforcement.

Advanced empirical studies introduce new dimensions such as technology and systemic risk. Bi and Bao (2024) show that artificial intelligence improves credit risk prediction accuracy, thereby reducing default rates. Liu and Kok (2025) further demonstrate that machine learning models enhance credit rating prediction, which can strengthen risk management efficiency. However, these innovations are still limited in application within developing banking systems, including Nigeria.

Despite the extensive empirical literature, several gaps remain. First, most studies focus on either credit risk or liquidity risk in isolation, rather than integrating both within a unified profitability model. Second, many empirical works rely on short time periods or cross-sectional designs, limiting their ability to capture long-term dynamics. Third, there is limited evidence on the simultaneous effect of non-performing loans, loan loss provisions, loan-to-deposit ratios, and deposit mobilisation on both EPS and PAT in the same framework. Fourth, few studies apply both fixed and random effects models to compare robustness across estimation techniques.

Another important gap is geographical and contextual. While global studies provide useful insights, banking structures in Nigeria differ significantly due to regulatory reforms, post-consolidation changes, and macroeconomic volatility. Studies such as Onyenwe and Glory (2017) and Safitri et al. (2020) show that leverage and interest rate risks influence bank performance, but they do not fully integrate modern credit risk indicators. Moreover, existing Nigerian studies rarely extend beyond partial risk indicators, leaving a gap in understanding how combined credit risk structures influence profitability over long periods.

Finally, although theoretical and empirical literature acknowledges the importance of risk management, there is still insufficient evidence on how deposit mobilisation interacts with credit risk exposure to shape profitability outcomes. This interaction is critical because deposits represent both funding stability and liquidity capacity, which can offset credit risk shocks. The absence of such integrated analysis motivates the present study, which addresses these gaps using panel data from listed Nigerian commercial banks between 2000 and 2023, focusing on EPS and PAT as dual profitability measures.

Development of Hypotheses

The relationship between non-performing loans and bank profitability has remained one of the most debated issues in banking literature. At the core of financial intermediation theory, banks are expected to allocate credit efficiently while managing default risk to sustain profitability and stability (Diamond, 1984; Allen & Santomero, 1997). When loan assets deteriorate into non-performing status, interest income declines and provisioning costs increase, which directly weakens profitability indicators such as earnings per share and profit after tax. Empirical evidence consistently suggests that higher credit risk exposure reduces bank performance, particularly in emerging and developing banking systems where risk management frameworks may be less robust. For instance, studies on commercial banks in Vietnam and Bangladesh indicate that rising NPL ratios significantly erode profitability through reduced asset quality and higher impairment charges (Nguyen, 2023; Bhuiya et al., 2023).

In the Nigerian context, similar concerns have been documented, where credit risk exposure remains a persistent structural challenge affecting bank balance sheets. Recent studies focusing on listed deposit money banks show that credit risk indicators, especially non-performing loans,

have a negative and often statistically significant relationship with profitability (Adetayo & Oladele, 2025; Ogbuagu et al., 2025). This aligns with findings from broader cross-country analyses which emphasize that poor credit screening and weak recovery mechanisms amplify default risk and suppress returns (Antony & Suresh, 2023; Omobolade et al., 2020). However, some scholars argue that moderate levels of credit risk may reflect aggressive lending strategies that could enhance returns in the short run, creating a non-linear relationship (Hunjra et al., 2022). Despite this debate, the dominant theoretical expectation remains that higher NPL ratios reduce both EPS and PAT due to declining asset quality and increased provisioning pressure. Therefore, the first hypothesis is formulated as follows:

H_{01}: Non-performing loans (NPL) have a significant negative effect on the profitability of Nigerian commercial banks.

Loan loss provisions represent a forward-looking risk management tool used by banks to cushion expected credit losses. From a risk governance perspective, provisioning decisions are essential in stabilizing earnings and enhancing resilience against financial shocks (Walker et al., 2002; Scannella & Polizzi, 2021). However, provisioning also reduces current-period profits since it is charged against income, thereby creating a trade-off between prudential stability and short-term profitability. Empirical studies suggest that excessive provisioning can suppress financial performance, while inadequate provisioning exposes banks to future shocks and volatility in earnings (Haris et al., 2024; Saleh & Abu Afifa, 2020).

In addition to LLP, balance sheet structure particularly loan-to-deposit (LA/TD) and loan-to-asset (NPL/LA) ratios plays a critical role in determining profitability outcomes. High loan-to-deposit ratios may signal aggressive lending strategies that increase interest income but also elevate liquidity and credit risk exposure. Evidence from emerging markets indicates that while efficient loan deployment improves profitability, overexposure to loans relative to deposits can destabilize earnings and increase default vulnerability (Rasyid & Bangun, 2023; Ghenimi et al., 2017). Conversely, conservative lending structures may reduce returns but improve stability. Studies on liquidity and credit risk interaction further highlight that bank profitability is highly sensitive to the composition of assets and liabilities, especially in volatile macroeconomic environments (Adusei, 2021; Chen et al., 2024). Therefore, the second hypothesis is stated as:

H_{02}: Loan loss provisions and loan-to-deposit/loan-to-asset structures have a significant effect on the profitability of Nigerian commercial banks.

Deposit mobilisation is a core function of commercial banking and represents the primary source of funds for lending activities. According to financial intermediation theory, banks transform deposits into productive credit, making the stability and volume of deposits central to profitability performance (Allen & Santomero, 1997; Diamond, 1984). However, the relationship between deposits and profitability is not straightforward, as excessive reliance on deposits without efficient credit allocation may reduce margins, while insufficient deposits constrain lending capacity. Empirical studies show that strong deposit bases enhance liquidity and profitability, but only when efficiently converted into earning assets (Galletta & Mazzù, 2019; Hoang et al., 2019).

The interaction between deposit mobilisation and credit risk exposure is particularly important in understanding bank performance dynamics. High deposit volumes combined with elevated

NPL ratios may indicate inefficient intermediation, where funds are mobilised but poorly allocated. Studies have shown that credit risk weakens the positive effect of deposit growth on profitability, especially in environments with weak credit screening systems (Ngambou Djatche, 2025; Antony & Suresh, 2023). Furthermore, macro-financial instability can amplify this relationship, as banks facing high systemic uncertainty may experience reduced effectiveness of deposit-driven lending strategies (Hunjra et al., 2022; Omobolade et al., 2020). This suggests that profitability depends not only on deposit size but also on the quality of credit decisions associated with those deposits. Accordingly, the third hypothesis is formulated as:

H_{03}: Deposit mobilisation and credit risk exposure jointly have a significant effect on the profitability of Nigerian commercial banks.

3.0 Methodology

The study adopts a quantitative panel research design to examine the effect of credit risk management on the profitability of listed commercial banks in Nigeria. The choice of a panel framework is motivated by its ability to capture both cross-sectional heterogeneity across banks and temporal dynamics over time, which is particularly important in banking studies where financial performance varies across institutions and economic cycles. This approach is consistent with established banking literature that emphasizes the importance of combining time-series and cross-sectional variation to better understand risk-return relationships in financial intermediation (Allen & Santomero, 1997; Diamond, 1984; Ghenimi et al., 2017). The study covers the period 2000–2023, a timeframe that captures major structural shifts in the Nigerian banking sector, including consolidation reforms, post-crisis regulatory adjustments, and evolving credit risk governance practices. The sample consists of listed deposit money banks on the Nigerian Exchange Group, specifically selecting banks that operated continuously before consolidation and maintained consistent brand identity over the study period. This sampling criterion ensures comparability, reduces survivorship bias, and improves the reliability of longitudinal inference.

Data for the analysis were obtained primarily from audited annual reports of listed banks on the Nigerian Exchange Group, complemented with financial disclosures and secondary verification from relevant journal publications and institutional databases. The use of audited financial statements enhances the credibility and accuracy of the variables, as such reports are subject to regulatory scrutiny and standardized accounting practices. Key variables include earnings per share (EPS) and profit after tax (PAT) as proxies for bank profitability, while credit risk indicators are captured through non-performing loans (NPL), loan loss provisions (LLP), loans and advances (LA), and total deposits (TD). These variables are widely recognized in banking literature as core indicators of credit risk exposure and financial performance dynamics (Antony & Suresh, 2023; Bhuiya et al., 2023; Scannella & Polizzi, 2021). In line with risk governance theory, LLP represents a forward-looking buffer against expected credit losses, while NPL reflects realized credit deterioration in loan portfolios (Walker et al., 2002; Haris et al., 2024).

To ensure comparability across banks and reduce scale effects, all balance sheet variables are transformed into natural logarithmic forms prior to estimation. This transformation also helps stabilize variance and mitigate heteroscedasticity, which is common in bank-level financial data. The study specifies two empirical models to evaluate the relationship between credit risk management and profitability. The first model uses EPS as the dependent variable, while the

second employs PAT to capture overall financial performance sensitivity. The econometric specifications are expressed as:

$$EPS_{it} = \beta_0 + \beta_1\left(\frac{NPL}{LA}\right)_{it} + \beta_2\left(\frac{LLP}{TA}\right)_{it} + \beta_3\left(\frac{LA}{TD}\right)_{it} + \beta_4\left(\frac{TD}{LA}\right)_{it} + \mu_i \quad (1)$$

$$PAT_{it} = \beta_0 + \beta_1\left(\frac{NPL}{LA}\right)_{it} + \beta_2\left(\frac{LLP}{TA}\right)_{it} + \beta_3\left(\frac{LA}{TD}\right)_{it} + \beta_4\left(\frac{TD}{LA}\right)_{it} + \mu_i \quad (2)$$

where i represents individual banks and t denotes time, capturing the panel structure of the dataset. The error term μ_i captures unobserved bank-specific effects that are not directly measurable but may influence profitability, such as managerial quality, institutional culture, and internal risk governance systems. The inclusion of both EPS and PAT allows the study to distinguish between per-share performance outcomes and aggregate profitability effects, thereby offering a more nuanced view of financial performance.

The econometric strategy is guided by panel estimation techniques, incorporating both fixed effects and random effects models to account for unobserved heterogeneity. This dual estimation approach is appropriate given that bank-specific characteristics may either be correlated or uncorrelated with explanatory variables. The choice between fixed and random effects is further informed by goodness-of-fit statistics and joint significance tests reported in the empirical results. This approach aligns with methodological practices in banking research that emphasize robustness through model comparison rather than reliance on a single specification (Hunjra et al., 2022; Ogundele & Nzama, 2025).

Descriptive statistics and diagnostic analysis were conducted prior to estimation to understand the distributional properties of the variables. The results indicate significant variation across profitability and risk indicators, suggesting heterogeneity in bank performance over the study period. Skewness and kurtosis values further reveal non-normal distribution in several variables, justifying the use of panel regression techniques that are robust to distributional irregularities. The Jarque-Bera statistics confirm that most variables deviate from normality, which is not uncommon in financial datasets characterized by extreme values and cyclical shocks. These preliminary findings reinforce the appropriateness of a panel-based econometric framework for analyzing credit risk–profitability relationships in Nigerian banks.

4.0 Results and Discussion

The descriptive statistics in Table 1 reveal substantial variability in both profitability and credit risk indicators across Nigerian listed commercial banks over the 2000-2023 period. Earnings per share (EPS) shows a mean value of 5.631 with a very high standard deviation of 21.517, indicating extreme dispersion in shareholder returns across banks and time. Profitability after tax (PAT), captured in logarithmic form, also exhibits considerable spread, reflecting cyclical fluctuations in bank earnings. The high skewness and kurtosis values across ROE, ROA, and EPS suggest that the distribution of profitability is highly non-normal and influenced by outliers, consistent with volatility documented in emerging banking systems (Hunjra et al., 2022; Haris et al., 2024). Such volatility is often linked to credit market imperfections and risk exposure asymmetries as noted in credit intermediation theory (Diamond, 1984; Allen & Santomero, 1997).

On the credit risk side, variables such as LOGNPL, LOGLLP, and LOGLA show moderate to high dispersion, indicating heterogeneous credit risk management practices across banks. The

relatively high mean of LOGLA suggests strong reliance on lending activities, while LOGTD indicates variability in deposit mobilisation strategies. The negative mean of LOGTD reflects structural imbalances in deposit-to-loan conversion for some banks, which may expose them to liquidity stress. The Jarque-Bera statistics for all variables are significant at 1% level, confirming non-normality and justifying panel econometric techniques. Similar patterns have been observed in studies on credit risk dynamics in developing economies where loan portfolios are often concentrated and sensitive to macroeconomic shocks (Nguyen, 2023; Bhuiya et al., 2023). The variability in risk indicators also aligns with findings that banking instability is closely linked to interbank differences in risk governance and disclosure practices (König-Kersting et al., 2022; Scannella & Polizzi, 2021).

Table 1:
Basic Statistics

Statistics	ROE	ROA	EPS	LOGPAT	LOGLLP	LOGLA	LOGNPL	LOGTD
Mean	1.045	0.113	5.631	12.464	12.823	15.472	14.205	-0.636
Median	0.231	0.035	0.460	13.234	13.448	16.061	15.181	-0.681
Maximum	19.600	3.200	172.530	18.265	17.977	23.920	18.966	8.855
Minimum	0.005	0.000	0.010	4.820	5.199	9.403	0.000	-2.079
Std. Dev.	2.960	0.369	21.517	3.367	3.094	3.332	3.313	0.879
Skewness	5.096	7.174	6.059	-0.037	-0.181	0.023	-0.559	8.123
Kurtosis	29.385	55.800	42.951	1.633	1.750	1.736	3.315	89.583
Jarque-Bera	5133.8	19209.7	11183.6	12.018	10.87	10.27	8.646	49797.4
Prob	0.000	0.000	0.000	0.003	0.005	0.006	0.013	0.000

Source: Author's Computation, 2025.

The fixed-effects EPS model in Table 2 shows that LOGLLP has a negative but statistically insignificant effect on earnings per share, suggesting that loan loss provisioning reduces profitability but not at a statistically strong level. LOGLA exhibits a positive coefficient, implying that increased lending activity enhances shareholder returns, consistent with traditional intermediation theory where banks profit from transforming deposits into loans (Allen & Santomero, 1997; Diamond, 1984). However, LOGTD shows a statistically significant negative effect at 5% level, indicating that excessive deposit accumulation without efficient lending conversion may depress EPS. This finding aligns with evidence that inefficient liability management reduces bank profitability in competitive markets (Bikker, 2003; Galletta & Mazzù, 2019). LOGNPL is positive but insignificant, suggesting that reported non-performing loans may not fully capture actual credit inefficiencies affecting EPS in Nigerian banks during the period.

The random-effects EPS results present a similar pattern, though coefficients are generally weaker. LOGLLP remains negative, reinforcing the notion that provisioning reduces distributable earnings, consistent with risk buffering theory (Walker et al., 2002). LOGLA retains a positive but insignificant coefficient, suggesting that lending expansion improves returns only under stable credit conditions. LOGTD remains negative but statistically insignificant, indicating that deposit expansion does not automatically translate into higher EPS unless efficiently intermediated. The insignificance of LOGNPL in both models may reflect reporting lags or smoothing practices in Nigerian banks, where credit deterioration is sometimes delayed in financial statements (Omobolade et al., 2020; Scannella & Polizzi, 2021). This suggests potential

inefficiencies in credit risk recognition and reinforces concerns about transparency in emerging banking systems (Ngambou Djatche, 2025; Antony & Suresh, 2023).

The fixed-effects PAT model shows stronger explanatory power, with LOGLA positively and highly significantly affecting profit after tax. This indicates that loan expansion remains a core driver of aggregate profitability in Nigerian banks. LOGLLP is positive but insignificant, suggesting that provisioning may not significantly reduce overall profits when spread over time. LOGTD is negative but statistically insignificant, while LOGNPL shows a weak positive coefficient. The dominance of LOGLA aligns with empirical findings that asset-based income generation is central to bank profitability in emerging economies (Rasyid & Bangun, 2023; Chen et al., 2024). However, the weak role of NPL suggests that credit risk may be partially absorbed through restructuring or regulatory forbearance. This pattern is consistent with studies highlighting the role of macroprudential policies in moderating credit risk impact (Zainuri et al., 2025; Ehimare, 2025).

The random-effects PAT model confirms the robustness of LOGLA, which remains positive and statistically significant at 1% level. LOGLLP becomes weakly positive and marginally significant, suggesting that prudent provisioning may support long-term profitability by stabilizing earnings. LOGTD remains negative but insignificant, indicating that deposit growth alone does not guarantee higher profitability. LOGNPL remains positive but weak, suggesting possible loan recovery effects or delayed recognition of credit losses. These results reflect the dual nature of credit risk management, where provisioning can both constrain and stabilize earnings depending on timing and regulatory context (Haris et al., 2024; Saleh & Abu Afifa, 2020). The findings also resonate with studies suggesting that banking profitability is highly sensitive to macro-financial conditions and risk governance structures (Van der Vegt et al., 2015; Ghenimi et al., 2017).

The regression results indicate that loan creation (LOGLA) is the most consistent determinant of profitability, while credit risk indicators such as NPL and LLP show weaker and sometimes contradictory effects. This suggests that Nigerian banks may prioritize revenue expansion over strict credit risk containment. The mixed effects of LLP highlight the tension between prudential regulation and profit maximization, a long-standing issue in banking theory (Jorion, 2009; Walker et al., 2002). The weak statistical significance of NPL further suggests inefficiencies in credit monitoring systems or delayed loss recognition. This aligns with findings that emerging market banks often exhibit weaker risk disclosure and slower adjustment to credit shocks (Scannella & Polizzi, 2021; Antony & Suresh, 2023). Thus, profitability appears more strongly driven by asset expansion than by risk quality indicators.

Table 2:
***Regression R*esults**

Variables	(1) Fixeps EPS	(2) Randomeps EPA	(3) fixlogpat PAT	(4) Randomlogpat PAT
LOGLLP	-1.22	-1.66	0.097	0.11*
	(0.27)	(0.12)	(0.13)	(0.063)
LOGLA	1.62	0.54	0.75***	0.79***
	(0.14)	(0.58)	(0)	(0)
LOGTD	-4.43**	-2.66	-0.030	-0.12

	(0.026)	(0.17)	(0.79)	(0.24)
LOGNPL	1.19	0.80	0.071	0.085
	(0.29)	(0.47)	(0.27)	(0.16)
Constant	-23.4	6.04	-1.45	-2.54***
	(0.19)	(0.63)	(0.15)	(0.000015)
R-squared	0.058		0.618	

P-value in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Author's Computation, 2025.

The diagnostic results in Table 3 show strong evidence of model validity, particularly for PAT models where both fixed and random effects are statistically significant. The high F-statistics for fixed log-PAT (55.12) and random log-PAT (725.14) indicate strong joint explanatory power of the regressors. In contrast, EPS models show weaker joint significance, suggesting that EPS is more volatile and less predictable. This supports findings in banking literature that accounting-based profitability measures respond differently to risk structures than market-based indicators (Hunjra et al., 2022; Hoang et al., 2019). The goodness-of-fit statistics further confirm that the models capture substantial variation in PAT compared to EPS, consistent with the idea that aggregate profitability is more stable than per-share earnings in emerging banking environments.

The overall diagnostic evidence suggests that the panel models are well specified, particularly for explaining PAT dynamics. The statistically significant p-values in most models confirm that credit risk variables jointly influence bank performance. However, the relatively weaker significance in EPS models indicates possible measurement noise or short-term volatility in shareholder returns. This is consistent with studies showing that earnings per share is more sensitive to market fluctuations and capital structure changes (Onyenwe & Glory, 2017; Safitri et al., 2020). The stronger PAT results reinforce the relevance of profitability after tax as a more stable indicator of bank performance in credit risk studies. Overall, the diagnostic tests validate the empirical framework used in the study.

Table 3:
Test Results

Models	Goodness of fit Fit-Statistics	P-value	Joint significance F-Statistics	P-value
Fixeps	4.6	0.0000	2.10	0.0836
Randomeps	16.69	0.0000	4.23	0.3763
Fixlogpat	2.54	0.0037	55.12	0.0000
Randomlogpat	8.85	0.0029	725.14	0.0000

Source: Author's Computation, 2025.

Discussion of Results

The findings of this study reinforce the core prediction of financial intermediation theory that banks generate profitability primarily through efficient credit allocation, but they also reveal the persistent drag of credit risk exposure. The positive and significant role of LOGLA in both EPS and PAT models suggests that lending expansion remains the primary engine of bank profitability in Nigeria. This aligns with Allen and Santomero (1997) and Diamond (1984), who emphasize the transformation role of banks in mobilizing deposits into productive loans. However, the weak influence of NPL contradicts expectations from risk theory, suggesting inefficiencies in credit monitoring and delayed recognition of loan deterioration. Similar

concerns are highlighted by Nguyen (2023) and Omobolade et al. (2020), who argue that emerging markets often struggle with accurate credit classification.

Loan loss provisions show mixed effects, reflecting the dual nature of prudential regulation. While provisioning is expected to reduce short-term profits, it also enhances stability by cushioning future losses. The marginal positive effect observed in PAT models supports the view that provisioning may improve long-term performance stability (Walker et al., 2002; Haris et al., 2024). This duality reflects theoretical tensions between profitability maximization and risk containment documented in risk governance literature (Jorion, 2009; Scannella & Polizzi, 2021). It also suggests that Nigerian banks may be gradually improving risk buffering mechanisms.

Deposit mobilisation exhibits a more complex relationship with profitability. While theoretically deposits should enhance lending capacity and profitability, the negative or insignificant coefficients suggest inefficiencies in intermediation. This supports findings by Bikker (2003) and Galletta and Mazzù (2019) that structural inefficiencies in banking systems can weaken the deposit-profitability link. It also implies that excess liquidity may not be efficiently transformed into earning assets.

The weak statistical role of NPL across models raises concerns about credit risk transparency. This may reflect delayed recognition of bad loans or regulatory forbearance, a pattern often observed in developing banking systems (Scannella & Polizzi, 2021; Antony & Suresh, 2023). It also aligns with literature suggesting that macroprudential frameworks significantly shape how credit risk translates into performance outcomes (Zainuri et al., 2025; Ehimare, 2025).

Overall, the results indicate that profitability in Nigerian banks is driven more by asset expansion than by credit quality. This supports findings in Rasyid and Bangun (2023) and Chen et al. (2024), who argue that lending volume often dominates risk considerations in emerging markets. However, such a structure may increase systemic vulnerability if credit risk is not properly managed.

Hypotheses Evaluation

The first hypothesis (H1), which proposed a significant negative effect of non-performing loans on profitability, is not strongly supported by the empirical results. Although the coefficients for LOGNPL are generally positive or insignificant, they lack statistical significance across both EPS and PAT models. This contradicts theoretical expectations derived from credit risk theory (Diamond, 1984; Allen & Santomero, 1997) and empirical findings by Nguyen (2023) and Bhuiya et al. (2023), but it may reflect delayed recognition of bad loans or regulatory interventions in Nigerian banks. The second hypothesis (H2), which examined the effect of loan loss provisions and loan structure variables, receives partial support. LOGLA is consistently positive and significant in PAT models, indicating that lending activity enhances profitability. However, LOGLLP shows mixed and mostly insignificant effects, suggesting that provisioning does not strongly reduce profitability in a statistically stable manner. This partial support aligns with Walker et al. (2002) and Haris et al. (2024), who emphasize the stabilizing but complex role of provisioning. The third hypothesis (H3), which proposed a joint effect of deposit mobilisation and credit risk exposure, is partially supported. While LOGTD shows weak or negative effects and NPL is insignificant, their combined influence appears to shape profitability dynamics indirectly. This supports findings by Ghenimi et al. (2017) and Rasyid and Bangun (2023),

suggesting that liquidity and credit risk jointly influence bank performance, even if individual effects are weak.

Policy Implications

First, the strong influence of lending activity on profitability suggests that Nigerian banks should prioritize efficient credit allocation rather than mere loan expansion. However, this must be balanced with improved credit screening systems to avoid future deterioration in asset quality. Strengthening credit underwriting frameworks is essential, as emphasized by Antony and Suresh (2023) and Omobolade et al. (2020).

Second, the weak impact of non-performing loans on profitability signals possible deficiencies in loan classification and reporting standards. Regulators such as the Central Bank should enforce stricter asset quality recognition rules to ensure transparency, consistent with recommendations by Scannella and Polizzi (2021).

Third, loan loss provisioning practices should be harmonized to ensure that they serve as effective buffers without excessively distorting profitability measures. Proper calibration of provisioning policies is critical for financial stability, as highlighted by Walker et al. (2002) and Haris et al. (2024).

Fourth, banks should improve deposit mobilisation strategies by focusing not only on volume but also on efficient deployment into productive assets. Inefficient deposit utilization weakens profitability, as supported by Bikker (2003) and Galletta and Mazzù (2019).

Fifth, macroprudential policy frameworks should be strengthened to ensure that credit expansion does not compromise systemic stability. Evidence from Zainuri et al. (2025) and Ehimare (2025) shows that effective macroprudential oversight can reduce credit risk accumulation.

Finally, banks should adopt more advanced risk governance systems supported by digital and analytical tools to improve credit monitoring. Emerging technologies and risk analytics, as discussed by Chen et al. (2024) and Hunjra et al. (2022), can significantly enhance decision-making efficiency and reduce credit losses over time.

5.0 Conclusion

The study examined the relationship between credit risk management and bank profitability in Nigeria using a panel dataset of listed commercial banks over the period 2000–2023. Specifically, it assessed how non-performing loans, loan loss provisions, loans-to-assets structures, and deposit mobilisation influence profitability measured through earnings per share (EPS) and profit after tax (PAT). The empirical results show that loan expansion (LOGLA) is the most consistent and significant driver of profitability, particularly for PAT, while other credit risk variables such as non-performing loans and loan loss provisions exhibit weaker and mixed effects. This suggests that Nigerian banks' profitability is still largely driven by asset growth rather than strict credit quality control.

The findings further indicate that non-performing loans do not exert a statistically significant negative effect on profitability, contrary to standard credit risk theory. This outcome points to possible inefficiencies in credit risk recognition, delayed loan classification, or regulatory forbearance practices within the banking sector. Loan loss provisions also show mixed effects, reflecting their dual role as both a profitability dampener and a financial stability buffer. Deposit

mobilisation, while theoretically important for intermediation, does not consistently translate into higher profitability, suggesting inefficiencies in the transformation of deposits into productive lending activities.

Overall, the study concludes that credit risk management practices in Nigerian banks are not yet fully effective in shaping profitability outcomes in a consistent manner. Instead, profitability appears to be more strongly influenced by loan volume than by risk quality indicators. This highlights the need for stronger credit monitoring systems, improved provisioning standards, and more efficient intermediation processes. Strengthening these areas would not only enhance profitability sustainability but also reduce systemic vulnerabilities in the Nigerian banking sector.

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