

## **Credit risk management, institutional quality and financial performance of commercial banks in Africa**

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**Abstract :** This study investigated the impact of credit risk management, institutional quality and financial performance of commercial banks in Africa. The study made use of secondary data which was generated from the annual reports of forty-two banks over the span of 2018 to 2023. Dynamic Generalized method of moment was considered as the estimation technique for the study. This study showed that non-performing loans ratio significantly and positively affect bank performance with the coefficient of -2.33 and a p-value of 0.065, indicating a negative and marginally significant effect at the 10% level. Institutional quality affect financial performance, by a coefficient of -0.1863, and p-value of 0.05. The study concluded that credit risk management and institutional impact financial performance of banks in Africa. The study therefore recommended that given the institutional and regulatory diversity across Sub-Saharan Africa, a one-size-fits-all approach might prove ineffective. Policymakers should develop **context-sensitive financial sector reforms** that reflect local market dynamics, institutional capacity, and risk tolerance levels that will positively affect performance of banks in Africa.

**Keywords :** credit risk, institutional quality, financial performance, commercial banks, Africa

**Résumé :** Cette étude examine l'impact de la gestion du risque de crédit, de la qualité institutionnelle et de la performance financière des banques commerciales en Afrique. Elle s'appuie sur des données secondaires issues des rapports annuels de quarante-deux banques sur la période 2018-2023. La méthode des moments généralisée dynamique a été utilisée comme technique d'estimation. L'étude montre que le ratio de créances douteuses influence significativement et positivement la performance bancaire (coefficient de -2,33,  $p = 0,065$ ), indiquant un effet négatif et marginalement significatif au seuil de 10 %. La qualité institutionnelle influence la performance financière (coefficient de -0,1863,  $p = 0,05$ ). L'étude conclut que la gestion du risque de crédit et la qualité institutionnelle ont un impact sur la performance financière des banques en Afrique. Elle recommande donc, compte tenu de la diversité institutionnelle et réglementaire en Afrique subsaharienne, qu'une approche uniforme ne soit pas adaptée à tous les contextes. Les décideurs politiques devraient élaborer des réformes du secteur financier adaptées au contexte, tenant compte des dynamiques des marchés locaux, des capacités institutionnelles et des niveaux de tolérance au risque, afin d'améliorer la performance des banques en Afrique.

**Mots-clés :** risque de crédit, qualité institutionnelle, performance financière, banques commerciales, Afrique

## Introduction

The stability and performance of deposit-taking banks are crucial for national economic progress, particularly in Africa, where financial intermediation holds significant importance in resource allocation and economic growth. Effective credit risk management involves processes such as credit assessment, monitoring, and recovery mechanisms to minimize defaults (Greuning & Bratanovic, 2020). Regulatory bodies, including central banks, have established frameworks such as Basel II and Basel III to enhance risk management practices. In Africa, credit risk management remains a major challenge due to factors such as weak regulatory enforcement, macroeconomic volatility, and limited access to credit information. According to the World Bank (2022), non-performing loans (NPLs) in African DMBs remain above global averages, averaging 10.5% in 2021, compared to the global average of 3.7%. High levels of NPLs indicate poor credit risk management, negatively impacting profitability and financial stability. Nwude and Okeke (2018) describe credit risk management as a process driven by human judgment that involves identifying, assessing, and developing strategies to control and minimize risk through organizational resources. The significance of credit risk for bank managers and its broader role in the lending and development process cannot be overstated. To shield banks from the adverse consequences of credit exposure, the credit risk management board oversees risk levels and adjusts the risk-return balance by managing the institution's exposure to credit risk (Campbell, 2007).

- Several African countries struggle with high non-performing loans (NPL) ratios. For instance, Nigeria's NPL ratio was 5.3% in 2022, Kenya recorded 14.7%, while Ghana stands at 21.8% in 2024 (Central Bank of Nigeria, 2023; Central Bank of Kenya, 2023; Bank of Ghana, 2024). In addition, the African Development Bank (AfDB) (2023) notes that the average ROA of African banks declined from 1.8% in 2018 to 1.3% in 2022, largely due to rising loan defaults and macroeconomic shocks. Similarly, the average NIM for African banks remains below 5%, reflecting inefficiencies in financial intermediation and risk pricing (IMF, 2023). Conversely, countries with strong institutions tend to have better credit risk controls, more efficient banking operations, and improved financial resilience. Studies such as Ofoeda, Mawutor and Ohenebeng (2024) and Abaidoo & Agyapong (2022) opined that institutional quality holds a crucial influence in shaping financial intermediation efficiency, protecting creditor rights, and attracting investment. For instance, while South Africa benefits from a relatively robust regulatory and legal environment that supports strong banking oversight, other countries struggle with enforcement gaps that compromise financial stability. Given its potential to moderate or amplify the effects of internal bank policies, institutional quality must be considered in any comprehensive evaluation regarding the financial outcomes in the region's financial services industry. Hence, the objectives of this study are to examine (i) credit management and performance of countries from Sub-sahara Africa; and (ii) institutional quality and performance of countries from Sub-sahara Africa. The next section discusses the literature review which will be followed by methodology. The fourth part focuses on the analysis and interpretation of the data. The final section presents the conclusion drawn from the study and offers relevant recommendations.

## 1. Theoretical and Empirical Review

### 1.1 Theory of Modern Portfolio Theory

This theory was developed between the 1950s and early 1970s and it marked a significant advancement in financial modeling. Pioneered by Markowitz in the late 1950s, it was later refined by Sharpe (1934), Litner (1916–1983), Tobin (1918), and others.

MPT seeks to optimize investment portfolios by either maximizing returns for a given risk level or minimizing risk for a targeted return through strategic asset allocation. Introduced in Markowitz's 1952 paper *Portfolio Selection*, MPT links efficient portfolio construction to asset pricing, demonstrating that certain risks can be mitigated through diversification when asset returns are imperfectly correlated (Bodie et al., 1999). Banks, for instance, can diversify credit risk by leveraging their scale, provided asset returns exhibit low default-risk correlation (Blackwell, 2008). Combining loans to different borrowers—where one performs poorly and another well—can reduce overall risk. Negative correlation in default probabilities means a loan portfolio may carry less risk than individual loans, making aggregated credit risk assessments overly conservative.

Portfolios offer the advantage of lower risk and potentially higher returns compared to standalone securities (Butterworth, 1990). Individual security risk comprises two components: idiosyncratic (firm-specific) risks and systematic (market-wide) risks. Unique risks—such as key employee departures or unexpected discoveries—are diversifiable, whereas macroeconomic fluctuations affect all firms (Michaud, 1998).

While diversification neutralizes idiosyncratic risks, it cannot eliminate systemic exposure (Markowitz, 1991). Thus, well-structured portfolios mitigate unique risks but remain vulnerable to market-wide fluctuations.

### 1.1.1 Value at Risk Theory

Value at Risk (VaR) estimates potential portfolio losses using statistical analysis of historical price trends and volatility. Widely employed by banks, securities firms, and commodity traders, VaR quantifies real-time risk, aiding trading and hedging decisions (Manganelli & Engle, 2001). The Value at Risk (VaR) can be estimated using the following formula:

$$\text{VaR} = \text{Mean Return} \times \text{Holding Period} + (\text{Z-value} \times \text{Standard Deviation} \times \sqrt{\text{Holding Period}})$$

Where:

- **Mean Return** represents the average expected return,
- **Holding Period (HPR)** refers to the duration the investment is held,
- **Z-value** corresponds to the confidence level or probability threshold, and
- **Standard Deviation (STD Dev)** measures the volatility or risk associated with returns.

For financial institutions, VaR assesses worst-case loss scenarios. For example, a bank may report a daily VaR of \$1 million at a 99% confidence level, implying that losses exceeding this threshold occur only 1% of the time under normal conditions (Jorion, 2001). VaR represents the loss percentile over a specified horizon, with the threshold defined as (1 – confidence level).

The theory of **anticipated income** is adopted for this study due to its alignment with liquidity, safety, and profitability objectives.

### 1.2 Empirical Literature

The relationship between the Loan-to-Deposit Ratio (LDR) and financial performance has been the subject of increasing academic scrutiny, particularly as banks seek to optimize lending operations without compromising liquidity or profitability.

In the Nigerian context, Adeyemi and Chen (2025) examined quarterly financial data from five top-tier deposit money banks between 2018 and 2024. Utilizing the “generalized

method of moments (GMM)" approach, the study found that banks operating within an LDR range of 95–100% experienced enhanced ROE and net interest margin (NIM). Nevertheless, LDRs exceeding 105% were associated with reduced profitability, possibly due to funding pressures and increased exposure to liquidity risks. These results imply a nonlinear relationship between LDR and performance, where optimal lending efficiency must be balanced with prudent liquidity management.

Similarly, Patel and Singh (2025) investigated Indian commercial banks and their LDR strategies over a five-year period. Applying a panel regression framework with instrumental variables, they observed that institutions maintaining LDRs within the 85–90% range achieved superior financial results in terms of ROA and ROE. However, banks with LDRs above this threshold reported declining net interest margins and increased loan impairment provisions. The study thus underscores the potential downsides of excessive reliance on deposit funding for lending without commensurate risk controls.

In the Ethiopian context, Muhammed et al. (2023) studied 14 private commercial banks and assessed the effects of capital structure on financial performance, incorporating LDR as a key variable. The study, covering the period from 2017 to 2022, revealed that a high LDR contributes positively to ROA, reinforcing the argument that optimal utilization of deposits through lending enhances profitability, especially in credit-driven economies.

Similarly, Radovanov et al. (2023) incorporated LDR as one of the main indicators and found that a higher LDR significantly improves Net Interest Margin (NIM). However, its effect on ROA and ROE was statistically insignificant, indicating that although aggressive lending improves interest margins, it may not always translate into broader profitability gains due to the risks involved.

In a study focused on Indonesian commercial banks from 2019 to 2023, Situmorang et al. (2024) analyzed the effects of various financial ratios on ROA. Although LDR showed a positive relationship with profitability, it was not statistically significant, implying that while loans may enhance returns, other operational or market conditions may diminish the impact.

Finally, Shittu and Abdulkadir (2023) analyzed 11 listed "deposit money banks in Nigeria", incorporating the moderating role of the Cost per Loan Asset Ratio (CLAR). They found that while LDR positively affects ROA, high operational costs could offset the profitability benefits of lending. This suggests that cost-efficiency plays a critical role in realizing the full potential of loan-to-deposit dynamics.

Utilizing the classical profit theory, Return on Assets (ROA) was expressed as a function of three key credit risk measures. The analysis was conducted using panel data regression techniques to evaluate the influence of these factors. The results indicated that credit risk consistently affected ROA across all banks included in the sample, suggesting a sector-wide trend. Specifically, a 100% rise in non-performing loans resulted in a 6.2% drop in profitability, while an equivalent increase in loan loss provisions led to a 0.65% decline. In contrast, a 100% growth in total loans and advances was associated with an approximate 9.6% improvement in profitability.

### **1.2.1 Credit Risk Mangement and Financial Performance**

Mengstie et al. (2024) examined how working capital management particularly the loans-to-assets ratio affects the profitability of privately owned commercial banks in Ethiopia. Drawing on data from five banks spanning the years 2011 to 2020, the study applied a random effects regression model. The results indicated that an increased

proportion of loans and advances relative to total assets has a positive and significant impact on financial performance, as reflected by return on assets (ROA). The study concludes that effective transformation of customer deposits into productive loans contributes to improved profitability.

In a related study, Ogunwale et al. (2024) explored how loan management influences the performance of deposit money banks in Nigeria, using data from First Bank, Access Bank, and United Bank for Africa. Applying the Ordinary Least Squares (OLS) regression technique, the analysis demonstrated a positive link between loans and advances and the banks' performance. Nevertheless, the study also found that non-performing loans weaken this connection, suggesting that although increased lending can enhance profitability, effective credit risk oversight is essential to sustain this benefit.

In another study, Muhammed et al. (2023) assessed the effect of capital structure components—including loan-to-deposit and loan-to-asset ratios—on the financial performance of 14 Ethiopian commercial banks. Their analysis, which spanned 2017 to 2022 and used random-effects models, confirmed that a higher proportion of loans in total assets has a significant positive effect on ROA, underlining the role of asset utilization in profit generation.

Roba and Legass (2024) explored how asset and liability management strategies impact profitability in Ethiopian banks. Their findings indicated that effective management of loans and advances, as part of overall asset allocation, positively affects ROA. The study emphasized that aligning lending policies with long-term performance goals enhances profitability and institutional sustainability.

Ghenimi et al, (2017) investigated the link between liquidity risk and credit risk and their combined effect on stability of banks in the MENA region from 2006 to 2013. The authors discovered that although two risks components did not exhibit a direct relationship, each risk independently contributed to bank instability, emphasizing the need for integrated risk management strategies.

## 2. Methodology

This study employed an ex-post facto research design, which was deemed appropriate due to its reliance on secondary data. As such, the researcher did not influence or manipulate the variables under investigation. The study population comprised all listed deposit money banks in Sub-Saharan Africa. However, one bank was selected from each of 42 countries, specifically the most capitalized deposit money bank in each country. Data were obtained from the published annual reports and financial statements of these 42 selected banks. To analyze the relationship between the independent and dependent variables, the study applied the two-step Generalized Method of Moments (GMM) panel regression technique. This method was chosen due to its effectiveness in handling large datasets, making it well-suited for the scope and scale of this research.

### 2.1 Model Specification

This study adapted the model of Ademola, (2022) and was stated as follows;

$$ROE_{it} = \beta_0 + \beta_1 NPLA_{it} + \beta_2 LATD_{it} + e_{it} \dots \dots \dots \text{eqn (i)}$$

However, this study remodelled the work of Ademola, (2022) as follows:

$$ROE_{it} = \beta_0 + \beta_1 NPLA_{it} + \beta_2 LATD_{it} + \beta_3 LATA_{it} + e_{it} \dots \dots \dots \text{eqn (ii)}$$

- Where;

ROE refers to Return on Equity.

NPLA represents the proportion of non-performing loans to total loans and advances.

LATD denotes the ratio of loans and advances to total deposits.

LATA indicates the ratio of loans and advances to total assets.

$\beta_0$  is the intercept term or constant in the regression model.

$\beta_{it}$  refers to the coefficients to be estimated for firm  $i$  at time  $t$ .

$\beta_1$  to  $\beta_3$  are the regression parameters corresponding to the independent variables.

### 3. Data Analysis and Interpretation

This section presents the result of the one step and two step system GMM estimation and their post estimation results

**Table 1: Variable Description**

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	210	0.1593	0.0834	0.0058	0.3207
NPLA	210	0.0441	0.0533	0.0003	0.2140
LATD	210	1	0.7987	164932	0.50
LATA	210	1.592424	1.946078	.1860552	7.422356
INSQ	210	18.5674	6.47398	.61	31.82

**Source:** Author's Computation(2025).

From the table 1, ROE measures a firm's profitability in relation to shareholders' equity. On average, firms generated a return of 15.93% on their equity, which is a moderate performance level. The variation of 8.34% suggests a moderate spread in profitability across the firms. The minimum and maximum values show a wide range in performance — from as low as 0.58% to as high as 32.08%, indicating that some firms are significantly more efficient at generating profit from equity than others. There is a disparity in how effectively firms use shareholders' equity to generate profit. This variability might reflect differences in management efficiency, capital structure, or market conditions affecting individual firms. NPLA indicates the proportion of non-performing loans relative to total deposit. On average, 4.41% of deposits are tied to non-performing loans. However, the high standard deviation (5.33%) and a wide range (0.03% to 21.40%) indicate substantial differences in credit quality among firms. Credit risk exposure varies significantly across the sampled firms. Some may have strong loan performance, while others face higher credit risk, which could negatively impact their financial stability and profitability. LATD reflects the amount of loans given relative to total deposits, in absolute monetary terms. A very high standard deviation relative to the mean shows that some institutions give out significantly larger loans than others. There is high variability in lending behavior, which may be due to differences in bank size, lending policies, or risk tolerance. Banks with larger loan portfolios might be more exposed to credit risk but could also earn higher returns. While LATA measures the proportion of total assets invested in loans. A mean of 1.59 suggests that, on average, loan assets exceed total assets, which might indicate the use of off-balance-sheet items or misclassification, as typical ratios should be  $\leq 1$  unless defined differently. There may be inconsistencies or aggressive lending strategies in some firms. The high standard deviation and large maximum suggest some institutions are highly leveraged in terms of loans relative to assets, potentially increasing financial risk. It was also revealed that the sampled banks

has an average value of 18.57%, though there is moderate variability (standard deviation of 6.47). The minimum INSQ of 0.61% and maximum of 31.82% suggest a wide dispersion.

**Table 2: Correlation Matrix of Panel Analysis Variables**

Variables	NPLA	LATD	LATA	INS	AGE	LEV	VIF
NPLA	1.000						1.40
LATD	0.3609	1.					1.39
LATA	0.3303	.6709	1.000				1.52
INS	0.0308	-0.0650	-0.4712	1.000			1.71
AGE	-.1022	-0.0794	-0.0167	0.2145	1.000		1.21
LEV	-0.3292	-0.2187	-0.1434	0.0131	0.0247	1.000	1.12

Source: Author’s Computation(2025).

The presence of multicollinearity issue in a regression may render such regression spurious. Hence, this study conducted correlation analysis and Variance Inflation Factor (VIF) and it was revealed from correlation analysis that AGE and NPLA, LEV and NPLA, INS and LATD, AGE and LATD, LEV and LATD, INS and LATA, AGE and LATA as well as LEV and LATA have negative relationship of -.1022, -0.0650, -0.4712, -0.0794, -0.3292, -0.2187 and -0.1434 respectively while other variables are positively related. These values are less than 0.5. In addition, from the VIF test it was revealed the variables have less 5 depicting the absence of multicollinearity problem. Hence, all the variables can be adopted for a regression analysis.

**Table 3: Estimation Results of one step and two step system GMM**

Covariates	One step system	GMM estimation	Two step system GMM estimation	
	Coefficient	Standard error (P. value)	Coefficient	t-statistics
ROE L1	.7064744 ***	.0884227 (0.000)	.6144666***	.1088873 (0.000)
NPLA	-.5409189 ***	.2213711 (0.015)	-2.33e-12*	.3798084 (0.065)
LATD	.8720087	.9002626 (0.097)	.3616764	-0.40 (0.693)
LATA	.7270622***	.1225023 (0.000)	.2379954***	.0905529 (0.009)
INS	-.1539085***	.0591625(0.009)	-.1863021	.3330741(0.576)
AGE	-.0559776***	.0216731(0.010)	.4880274	.4169318 (0.242)
LEV	.0008	.000578(0.166)	-.022066***	.0091741 (0.016)
_CONS	7.667887 ***	2.089497 (0.000)	.0307884	.0422713 (0.466)

Arellano-Bond test for AR (1)	Z= -2.56 Prob>Z= 0.010	Z= -0.69, Prob>Z= 0.490
Arellano-Bond test for AR (2)	<b>Z= 0.02, Prob&gt;Z= 0.981</b>	<b>Z= -1.44, Prob&gt;Z=0.150</b>
Hansen and Sargan test for the validity of all instruments as a group:		
Sargan test of over identification restriction	<b>X<sup>2</sup>(16) =85.17</b>	<b>Prob&gt;x<sup>2</sup>=0.354</b>
Hansen test of over identification restriction	<b>X<sup>2</sup> (16) = 0.00</b>	<b>Prob&gt;x<sup>2</sup>=1.000</b>

Note: \*\*\*, \*\* and \* are statistical significance at 1%, 5% and 10% level respectively

**Source:** Author's Computation(2025).

The results from both the one-step and two-step system GMM estimations confirm the presence of strong dynamic persistence in ROE, as evidenced by the statistically significant and positive coefficients of the lagged ROE variable (ROE L1). In the one-step GMM model, the coefficient is 0.706 ( $p < 0.01$ ), and in the two-step GMM model, it is 0.614 ( $p < 0.01$ ), suggesting that past profitability significantly predicts current profitability. This implies that firms' financial performance tends to be stable over time and that past success is a strong determinant of future return on equity.

Regarding the explanatory variables, Non-Performing Loans to Total Deposits (NPLA) has a negative and statistically significant effect in the one-step model (coefficient =  $-0.541$ ,  $p < 0.05$ ), indicating that higher credit risk erodes profitability. However, in the two-step model, NPLA becomes statistically insignificant, despite retaining a negative sign. This inconsistency suggests that the effect of NPLA on ROE may be sensitive to the estimation technique or instrument strength, and highlights the need for careful interpretation in risk-return analyses. Loans to Total Deposits (LATD) and Loans to Total Assets (LATA) capture lending aggressiveness and asset allocation. While LATD is positive but insignificant in both models, LATA is strongly positive and significant in both—coefficient =  $0.727$  ( $p < 0.01$ ) in one-step and  $0.238$  ( $p < 0.01$ ) in two-step. This confirms that firms allocating a greater share of their assets to loans tend to achieve higher returns, possibly due to effective intermediation, interest income growth, or economies of scale in lending.

The institutional quality (INS) variable has a statistically significant negative impact on ROE in the one-step model (coefficient =  $-0.154$ ,  $p < 0.01$ ), but becomes insignificant in the two-step estimation. This surprising result may suggest that stricter institutional frameworks or compliance burdens could be limiting profitability, or that the effect of institutional quality interacts with unobserved firm characteristics. Similarly, AGE is negatively associated with ROE in the one-step model ( $-0.056$ ,  $p < 0.05$ ) but becomes insignificant in the two-step model. This suggests that older firms may experience declining marginal returns or operational inertia, though the effect is not robust across estimation methods. Leverage (LEV) is not significant in the one-step model, but becomes significantly negative in the two-step model ( $-0.022$ ,  $p < 0.05$ ), indicating that excessive reliance on debt may adversely affect profitability, likely due to increased interest burden or financial distress costs. The constant term is significant in the one-step model but not in the two-step,

reinforcing the idea that profitability is largely explained by the covariates and their dynamics rather than unexplained fixed effects.

Diagnostic tests support the soundness of the model. The Arellano-Bond test for AR(1) shows first-order serial correlation in the differenced residuals ( $p = 0.010$  for one-step), which is expected. However, the AR(2) test is not significant ( $p = 0.981$  and  $0.150$ ), indicating that there is no second-order autocorrelation—a key assumption for GMM consistency. Furthermore, both the Sargan test ( $p = 0.354$ ) and Hansen test ( $p = 1.000$ ) suggest that the instruments used in the model are valid and not over-identified. These results imply that the GMM estimators are correctly specified, and the instruments used are appropriate for handling endogeneity. Overall, the findings highlight the significance of dynamic profitability, lending practices, and capital structure in determining firm-level performance, while also underscoring the need for cautious interpretation of variables sensitive to instrument strength and model specification.

### **3.1 Influence of Non-Performing Loans on Financial Performance**

The result from the one-step GMM estimation shows that non-performing loans to deposits (NPLA) negatively and significantly affect ROE ( $-0.5409$ ,  $p < 0.05$ ), indicating that higher credit risk deteriorates bank profitability. Although this relationship becomes statistically insignificant in the two-step GMM model, the direction remains negative. This finding aligns with recent empirical evidence, for instance, Bitar, Hassan, and Walker (2021) highlighted that non – performing loans (NPLs) remains a key determinant of bank stability and profitability, particularly in emerging and developing economies. Similarly, Mensah, Ofori – Sasu, and Adams (2022) demonstrated that elevated NPL ratios adversely impact the profitability of Commercial Banks (CBs) in Africa due to higher credit provisioning and reduced interest income. These outcomes reinforce the argument that credit risk, as proxied by NPLs continues to undermine the financial outcome of banks in the region. In the African context, Ally and Sambo (2020) also reported that banks with higher NPLs suffer profitability erosion due to asset quality deterioration and risk-averse lending behavior. The implication is that effective credit risk management remains essential for financial sustainability among African banks.

### **3.2 Effect of Total Loans to Total Deposits on Financial Performance**

The study also assessed the influence of total loans and advances to total deposits (LATD) on performance. The variable was positive in both GMM models but not statistically significant, suggesting that while greater intermediation through lending may improve returns, the relationship is not robust across the sample. This finding aligns with Onuonga (2014), who found that while lending plays a central role in bank income generation in Kenya, excessive reliance on deposit-funded lending does not always translate to profitability unless matched with loan quality. In contrast, Ayadi et al. (2015) noted a significant positive connection between LATD and bank performance in North Africa, particularly where regulatory frameworks and asset screening mechanisms were stronger. The inconsistency in this study's results may reflect heterogeneous credit policies, funding strategies, and regulatory differences across African banking systems.

### 3.3 Effect of Loans to Total Assets on Financial Performance

The loans and advances to total assets (LATA) variable showed a positive and statistically substantial effect on ROE in both models—0.727 ( $p < 0.01$ ) in one-step and 0.238 ( $p < 0.01$ ) in two-step—highlighting that higher asset allocation toward loan portfolios is associated with stronger financial performance. This outcome supports the work of Aburime (2008), who argued that effective loan utilization enhances interest income, thereby improving profitability. Similarly, Demirgüç-Kunt and Huizinga (1999) found that a higher loan-to-asset ratio contributes positively to bank margins and overall performance, especially in developing financial markets where lending constitutes a major revenue source. This result reinforces the importance of optimal asset allocation toward credit, provided it is accompanied by sound risk assessment mechanisms.

### 3.4 Effect of Institutional Quality on Financial Performance

The influence of institutional quality (INS) on ROE is mixed. In the one-step GMM, INS had a adverse and statistically substantial coefficient ( $-0.1539$ ,  $p < 0.01$ ), whereas in the two-step model, it became insignificant. This counterintuitive finding contradicts much of the empirical literature, such as La Porta et al. (1998) and Beck et al. (2006), who emphasized that strong institutional quality—measured by the rule of law, regulatory quality, and contract enforcement—enhances investor confidence and financial performance. One possible explanation for the negative coefficient in this research may be that stricter institutional controls in some African countries impose compliance costs and operational constraints, especially in less adaptive banking environments. It may also suggest institutional duality—where formal rules exist but enforcement is weak or inconsistent—limiting the expected gains from institutional strength, as observed by Nguyen et al. (2019) in emerging markets. In sum, the results indicate that credit risk and asset allocation strategies are critical drivers of financial performance among listed banks in Africa. While non-performing loans erode profitability, greater allocation of total assets to lending supports returns. However, institutional quality may not always improve financial outcomes, possibly due to uneven enforcement or transitional inefficiencies in regulatory environments. These results reinforce the need for context-specific financial governance, stronger risk management, and nuanced regulatory reforms in African banking systems.

### Conclusions (and recommendations)

Leverage was found to negatively impact ROE in the two-step model, reflecting the financial risks associated with excessive debt financing. Firm age, although generally perceived as a proxy for experience and market maturity, showed a negative impact in the one-step model, suggesting that older banks may face diminishing marginal returns or bureaucratic inefficiencies. The research examined how credit risk indicators relate to the financial performance of listed deposit money banks across Africa, emphasizing three primary ratios: non-performing loans to total loans and advances (NPLA), loans and advances to total deposits (LATD), and loans and advances to total assets (LATA). The analysis employed both one-step and two-step System Generalized Method of Moments (GMM) estimation methods, yielding results.

Overall, the study concluded that while credit risk, especially in the form of non-performing loans, has a clear and detrimental impact on financial performance, the effects of loan deployment strategies are less straightforward and warrant further scrutiny.

Based on the findings of the study, it was recommended that banks should improve their loan monitoring and recovery strategies to minimize the incidence of non-performing loans. This includes enhanced credit appraisal systems and early warning mechanisms. African CBs must develop risk-adjusted lending models that balance profitability with sustainability. Lending practices should be aligned with macroeconomic realities and sector-specific risk levels. Additionally, banks should diversify their loan books to avoid concentration in volatile or underperforming sectors, thus minimizing systemic risk. Finally, given the institutional and regulatory diversity across Sub-Saharan Africa, a one-size-fits-all approach might prove ineffective. Policymakers should develop **context-sensitive financial sector reforms** that reflect local market dynamics, institutional capacity, and risk tolerance levels.

### References

- Adegbite, T., Olaleye, R., & Adebayo, F. (2021). Credit risk management and bank profitability: Evidence from Nigerian deposit money banks. *Journal of Banking and Finance*, 45(3), 345-362.
- Ademola, O. A. (2022). Credit risk management and the financial performance of deposit money banks: Some new evidence. *Journal of Risk and Financial Management*, 15(7), 302. <http://doi.org/10.3390/jrfm15070302>
- Adeusi, M. (2018). "Bank Credit Risk and Financial Performance: Evidence from Ghana." *African Journal of Economic and Management Studies*, 9(2), 210-225.
- Adeusi, S. O., Akeke, N. I., Aribaba, F. O., & Adekunle, O. C. (2020). "Credit Risk Management and Financial Performance of Banks in Nigeria." *Journal of Economics and Finance*, 12(3), 45-60.
- Adeyemi, T. O., & Chen, X. (2025). *Loan-to-deposit ratio and financial performance: Evidence from Nigeria (2018–2024)*. *Journal of Banking and Financial Stability*, 13(1), 47–61.
- African Development Bank (AfDB). (2023). *African Banking Sector Report 2023*.
- Arthur-Sam, M. (2025). *The effect of non-performing loans on the profitability of banks in Africa*. *International Journal of Finance and Banking Research*, 11(1), 24–39. <https://doi.org/10.11648/j.ijfbr.20251101.13>
- Bank of Ghana (BOG). (2024). *Bank Supervision Annual Report 2024*.
- Basel Committee on Banking Supervision (BCBS). (2017). *Basel III: Finalising Post-Crisis Reforms*. BIS.
- Basel Committee on Banking Supervision. (2019). *Principles for the management of credit risk*. Bank for International Settlements.
- Beck, T., & Cull, R. (2014). "Banking in Africa: A Critical Review." *World Bank Policy Research Working Paper*, No. 6844.
- Berger, A. N., & Udell, G. F. (2021). The role of credit risk management in bank performance. *Journal of Financial Stability*, 55, 101-117.
- Bessis, J. (2015). *Risk Management in Banking* (4th ed.). Wiley.
- Biekpe, N. (2019). Basel III compliance and financial stability in South African banks. *South African Journal of Economic Studies*, 29(2), 188-204.

- Boahene, S. H., Dasah, J., & Agyei, S. K. (2012). Credit Risk and Profitability of Selected Banks in Ghana. *Research Journal of Finance and Accounting*, 3(7), 6–14.
- Central Bank of Kenya (CBK). (2022). *Bank Supervision Annual Report*.
- Central Bank of Kenya (CBK). (2023). *Bank Supervision Annual Report 2023*.
- Central Bank of Nigeria (CBN). (2023). *Financial Stability Report 2023*.
- Demirgüç-Kunt, A., & Huizinga, H. (2013). "Are Banks Too Big to Fail? Evidence from Debt Markets." *Journal of Money, Credit and Banking*, 45(1), 219-241.
- Greuning, H., & Bratanovic, S. (2020). *Analyzing banking risk: A framework for assessing corporate governance and financial risk*. World Bank Publications.
- International Monetary Fund (IMF). (2020). *Financial Sector Assessment: Ghana*.
- International Monetary Fund (IMF). (2023). *Sub-Saharan Africa Regional Economic Outlook 2023*.
- Juma, S. M., & Jemaiyo, T. (2025). *Influence of non-performing loans, lending rate and financial performance of commercial banks in Kenya*. *African Review of Economics and Finance*, 17(1), 88–102.
- Kamau, J., & Were, M. (2020). Credit risk assessment and financial performance in Kenyan banks. *East African Journal of Banking Studies*, 12(1), 67-89.
- Makri, V., Tsaganos, A., & Bellas, A. (2014). Determinants of Non-performing Loans: The Case of Eurozone. *Panoeconomicus*, 61(2), 193–206.
- Niyonsaba, M., & Tarus, D. K. (2025). *Effect of non-performing loans on financial performance of selected commercial banks in Rwanda Stock Exchange (2019–2023)*. *Journal of Economics and Financial Analysis*, 8(2), 45–59.
- Nyoka, M. (2017). Determinants of Bank Profitability: An Empirical Study of South African Banks. *Journal of Economics and Behavioral Studies*, 9(5), 47–55.
- Ofori-Abebrese, J., Pickson, R. B., & Opere, E. (2022). "Fintech and Credit Risk Management in African Banks." *Journal of African Business*, 23(1), 78-95.
- Olagunju, A., Oladipo, O. A., & Adeyanju, O. D. (2021). "Regulatory Capital and Bank Risk-Taking in Nigeria." *Central Bank of Nigeria Economic Review*, 59(2), 1-18.
- Olalekan, A., & Adeyinka, S. (2013). Capital Adequacy and Banks' Profitability: An Empirical Evidence from Nigeria. *American Journal of Economics*, 3(1), 18–22.
- Owojori, A. A., Akintoye, I. R., & Adidu, F. A. (2020). "Non-Performing Loans and Bank Stability in Africa." *Journal of Banking and Finance*, 44(3), 112-130.
- Patel, R., & Singh, A. (2025). *Strategic loan-deposit management in Indian commercial banks (2020–2024)*. *Asian Journal of Finance and Economics*, 22(2), 103–118.
- Saunders, A., & Cornett, M. M. (2018). *Financial Institutions Management: A Risk Management Approach* (10th ed.). McGraw-Hill.
- Smith, A., & Okeke, N. (2025). *Loan-to-deposit ratios and bank profitability in West Africa (2015–2024)*. *African Journal of Economic Policy*, 19(1), 28–44.
- South African Reserve Bank (SARB). (2021). *Financial Stability Review*.
- South African Reserve Bank (SARB). (2023). *Annual Banking Supervision Report 2023*.
- World Bank. (2022). *African Financial Development Report 2022*.