# Impact of Non-Performing Loans and Liquidity on the Market Performance of Deposit Money Banks in Nigeria

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**Abstract:** This study investigates the impact of Non-Performing Loans (NPLs) and liquidity on the financial performance of Deposit Money Banks (DMBs) in Nigeria, with performance specifically measured by Return on Equity (ROE). Adopting a quantitative research approach, the study analyzes a sample of 14 DMBs listed on the Nigerian Stock Exchange over the period 2017 to 2023. Using linear regression and correlation analysis, the research assesses how variations in NPLs and liquidity influence ROE, thereby providing insights into the financial health and performance of these banks. The findings indicate that although NPLs exhibit a negative relationship with ROE, this relationship is not statistically significant. This suggests that, while increases in NPLs tend to reduce ROE, the effect is not strong enough to be deemed conclusive within the sample period. Conversely, liquidity shows a statistically significant negative impact on ROE, implying that higher liquidity levels are associated with lower returns on equity. This outcome suggests that, while maintaining sufficient liquidity is essential for meeting short-term obligations, excess liquidity may constrain banks' ability to invest in profitable ventures, thereby reducing profitability. The study underscores the importance of effective liquidity management and robust credit risk control practices. It recommends that banks strike an optimal balance in managing liquidity to enhance profitability and mitigate the negative effects of non-performing loans. Key recommendations include optimizing liquidity management strategies, enhancing credit risk assessments, diversifying investment portfolios, and improving operational efficiency. By addressing these areas, Nigerian DMBs can improve their financial performance and achieve better returns on equity. This research contributes to the broader understanding of the relationship between NPLs, liquidity, and financial performance, offering valuable insights for banking sector stakeholders and policymakers in Nigeria.

**Keyword:** Non-Performing Loans, Liquidity, Market Performance, Deposit Money Banks, Nigerian Banking Sector

## INTRODUCTION

The banking industry is a fundamental driver of economic development through its role in financial intermediation and efficient capital allocation. In Nigeria, Deposit Money Banks (DMBs) form the core of the financial system, fostering investment and economic activity. However, recent performance concerns have emerged, largely due to increasing Non-Performing Loans (NPLs) and liquidity constraints. NPLs—typically loans overdue for more than 90 days—threaten banks' profitability and stability, directly affecting their Return on Equity (ROE), a key indicator of market performance (Adebayo & Olawale, 2020; Adeola & Soyinka, 2021).

The growth of NPLs in Nigeria has been attributed to poor credit risk management, macroeconomic instability, and sector-specific downturns, notably in the oil and gas sector (Adamu, 2019). The presence of NPLs diminishes banks' income and compels them to increase provisions for potential losses, thus reducing their ROE (Musa & Umeh, 2022). Liquidity—defined as a bank's capacity to meet short-term

obligations—also plays a critical role in sustaining performance. Liquidity is hampered when funds are immobilized in non-performing assets, thereby restricting lending, raising operational costs, and weakening profitability (Onyeka & Daniels, 2021; Fashola & Akinyemi, 2020).

Despite interventions by the Central Bank of Nigeria (CBN) to reinforce banking resilience, including capital adequacy guidelines and risk management reforms (CBN, 2021), the dual burden of NPLs and liquidity constraints persists. This study, therefore, seeks to examine the influence of NPLs and liquidity on the financial performance of Nigerian DMBs, using ROE as the principal metric.

## PROBLEM STATEMENT
Nigerian DMBs are increasingly burdened by high NPL levels and liquidity shortages, which have significantly diminished profitability and financial stability. Elevated NPLs lead to greater loan loss provisions, thereby reducing ROE and undermining investor confidence. Similarly, insufficient liquidity compromises banks' capacity to meet obligations and support lending, further weakening their market performance.

These persistent challenges have raised concerns about systemic risks in the Nigerian banking sector. Although the CBN has introduced regulatory measures to mitigate them, the effectiveness of such interventions remains questionable. Hence, this study addresses the critical question: To what extent do NPLs and liquidity affect the financial performance of DMBs in Nigeria?

## RESEARCH QUESTIONS
- What is the impact of Non-Performing Loans on the financial performance (ROE) of Nigerian Deposit Money Banks?
- How does liquidity influence the financial performance (ROE) of Nigerian Deposit Money Banks?
- What is the combined effect of Non-Performing Loans and liquidity on the ROE of Nigerian Deposit Money Banks?

## LITERATURE REVIEW

### CONCEPTUAL REVIEW

### NON-PERFORMING LOANS (NPLS)
NPLs refer to credit exposures where the borrower has failed to meet repayment obligations for 90 days or more. These loans are problematic because they signal deteriorating asset quality, increase credit risk exposure, and reduce profitability. Banks must set aside income to cover these bad debts, thereby reducing ROE (Ojo, 2020). High NPLs also constrain banks' ability to extend credit, impairing growth and investor confidence (Musa & Umeh, 2022).

### LIQUIDITY
Liquidity denotes the ease with which a bank can convert its assets into cash to meet immediate financial obligations. A bank with sufficient liquidity is better positioned to satisfy withdrawal requests, fund loans, and capitalize on investment opportunities. Conversely, liquidity shortfalls can result in higher borrowing costs and asset liquidation, which negatively impact ROE (Fashola & Akinyemi, 2020; Onyeka & Daniels, 2021).

### RETURN ON EQUITY (ROE)
ROE is a performance indicator that reflects a bank's ability to generate profit from shareholders' equity. It measures how efficiently management utilizes capital to produce earnings. A high ROE suggests strong financial performance, while a declining ROE often points to inefficiencies, increased credit risk, or liquidity problems.

ROE=    Net Income

           Shareholders' Equity

Return on Equity (ROE) serves as a key profitability metric, indicating how effectively a firm uses shareholders' equity to generate earnings. A higher ROE signals efficient capital utilization and can enhance investor confidence, whereas a lower ROE may reflect operational inefficiencies or financial strain (Brigham & Ehrhardt, 2022; Ross et al., 2021). In the banking sector, ROE is a crucial indicator of performance, profitability, and capital management, and is monitored by investors and regulators alike (Mishkin & Eakins, 2023; Diamond & Rajan, 2001).

## THEORETICAL REVIEW

Two main theories underpin the study:

- Credit Risk Theory explains that Non-Performing Loans (NPLs) weaken financial performance by increasing loan loss provisions and reducing ROE (Mishkin & Eakins, 2023).
- Liquidity Preference Theory (Keynes, 1936) emphasizes that banks must maintain liquidity to meet obligations and support operations, which directly affects financial performance.

## EMPIRICAL REVIEW

Empirical findings from several studies highlight that high NPLs consistently reduce ROE and profitability (Adams & Osei, 2020; Chukwu & Uche, 2018; Ezeani & Onyekwelu, 2020; Ogunleye & Akinlabi, 2022). In contrast, adequate liquidity enhances operational stability and profitability (Akinlo & Akinlo, 2019; Babalola, 2021; Daramola, 2022; Fagbemi & Alabi, 2021; Mbah & Ugwuanyi, 2021). Effective credit risk and liquidity management are shown to be vital for improving market performance and maintaining investor confidence (Jiboku & Alabi, 2019).

## METHODOLOGY

The study adopts a quantitative research design using secondary data from the 14 Deposit Money Banks listed on the Nigerian Stock Exchange (NSE) between 2017 and 2023. It examines the effect of NPLs and liquidity ratios on market performance—measured through ROE and stock prices. Correlation and linear regression analyses will be employed to evaluate the relationship and impact of NPLs and liquidity on ROE. By modeling NPLs and liquidity as independent variables and ROE as the dependent variable, the study aims to quantify their influence on bank performance and investor value, thereby contributing to understanding financial management in Nigeria's banking sector.

The general form of the linear regression model will be

$Roe= \beta0+\beta1NPL+\beta2LIQ+\epsilon$...........................................................................(1)

### DATA ANALYSIS AND INTERPRETATION

The Data Analysis and Interpretation section focuses on analyzing the data collected, applying statistical techniques to test the hypotheses, and interpreting the results. This process helps draw meaningful conclusions regarding the relationship between Non-Performing Loans, Liquidity, and Return on Equity.

### MODEL SUMMARY

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .372[a] | .138 | .124 | .140 | .138 | 9.324 | 2 | 116 | .000 |

a. Predictors: (Constant), Non performing Loan, Liquidity

The model summary reveals a moderately positive relationship between Non-Performing Loans, Liquidity, and the dependent variable, likely Return on Equity. The correlation coefficient (R) is 0.372, indicating a moderate positive relationship between the independent variables and the dependent variable. The R Square value of 0.138 suggests that 13.8% of the variation in the dependent variable is explained by Non-Performing Loans and Liquidity, indicating that these factors have a modest influence on the financial performance of the banks. The Adjusted R Square, at 0.124, accounts for the number of predictors in the model and slightly reduces the explanatory power, but the model still fits the data reasonably well. The standard error of the estimate is 0.140, indicating the average deviation of the observed values from the regression line, which suggests moderate precision in the model's predictions. The F-statistic of 9.324, with a significance value of 0.000, confirms that the relationship between the variables is statistically significant, meaning that Non-Performing Loans and Liquidity have a meaningful impact on the dependent variable.

**ANOVAa**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | .368 | 2 | .184 | 9.324 | .000[b] |
| | Residual | 2.289 | 116 | .020 | | |
| | Total | 2.657 | 118 | | | |

- Dependent Variable: Return on Equity
- Predictors: (Constant), Non performing Loan, Liquidity

The ANOVA table provides insights into the overall significance of the regression model, which examines the effect of Non-Performing Loans and Liquidity on Return on Equity. The F-statistic (9.324), with a p-value of 0.000, suggests that the model is statistically significant. Since the p-value is less than 0.05, we can conclude that Non-Performing Loans and Liquidity collectively have a significant impact on Return on Equity, and the model is a good fit

**COEFFICIENTS**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | .609 | .040 | | 15.313 | .000 | .530 | .687 |
| | Liquidity | -.003 | .001 | -.303 | -3.406 | .001 | -.004 | -.001 |
| | Non performing Loan | -.003 | .002 | -.155 | -1.745 | .084 | -.006 | .000 |

a. Dependent Variable: Return on Equity

The coefficient table provides insight into how Liquidity and Non-Performing Loans impact the dependent variable, Return on Equity (ROE).

The constant (0.609) represents the expected ROE when both Liquidity and Non-Performing Loans are zero. This value is significant, as indicated by a t-value of 15.313 and a p-value of 0.000, meaning it contributes substantially to the model. For Liquidity, the unstandardized coefficient is -0.003, indicating that for every unit increase in Liquidity, ROE decreases by 0.003 units. This relationship is significant, as shown by the t-value of -3.406 and a p-value of 0.001. The negative Beta (-0.303) shows a moderately strong inverse relationship between Liquidity and ROE.

For Non-Performing Loans, the unstandardized coefficient is -0.003, implying that an increase in Non-Performing Loans leads to a slight reduction in ROE by 0.003 units. However, the p-value of 0.084 suggests that this relationship is not statistically significant at the 0.05 level, though it approaches significance. The Beta (-0.155) also shows a weaker negative effect compared to Liquidity.

## POSTERIOR DISTRIBUTION CHARACTERIZATION FOR PAIRWISE CORRELATIONS

| | | | Return On Equity | Liquidity | Non Performing Loan |
|---|---|---|---|---|---|
| Return On Equity | Posterior | Mode | | -.339 | -.228 |
| | | Mean | | -.332 | -.224 |
| | | Variance | | .007 | .007 |
| | 95% Credible Interval | Lower Bound | | -.486 | -.390 |
| | | Upper Bound | | -.172 | -.055 |
| | N | | 119 | 119 | 119 |
| Liquidity | Posterior | Mode | -.339 | | .243 |
| | | Mean | -.332 | | .237 |
| | | Variance | .007 | | .007 |
| | 95% Credible Interval | Lower Bound | -.486 | | .070 |
| | | Upper Bound | -.172 | | .401 |
| | N | | 119 | 119 | 119 |
| | Posterior | Mode | -.228 | .243 | |

| Non performing Loan | | Mean | -.224 | .237 | |
| | | Variance | .007 | .007 | |
| | 95% Credible Interval | Lower Bound | -.390 | .070 | |
| | | Upper Bound | -.055 | .401 | |
| | N | | 119 | 119 | 119 |
| a. The analyses assume reference priors (c = 0 ). | | | | | |

The results show significant correlations between Return on Equity (ROE), Liquidity, and Non-Performing Loans (NPL). ROE exhibits a notable negative correlation with both Liquidity and NPL, indicating that higher ROE tends to correspond with lower Liquidity and fewer Non-Performing Loans. The negative values are statistically significant, as evidenced by the 95% credible intervals not including zero. Conversely, Liquidity and NPL are positively correlated, suggesting that increased Liquidity is associated with higher levels of Non-Performing Loans. These relationships are confirmed by significant credible intervals for each pairwise correlation.

## DISCUSSION OF RESULT

- What is the impact of Non-Performing Loans (NPLs) on the financial performance of Deposit Money Banks (DMBs) in Nigeria, as measured by Return on Equity (ROE)

The table above suggests that Non-Performing Loans (NPLs) have a negative but statistically insignificant impact on the financial performance of Deposit Money Banks (DMBs) in Nigeria, as measured by Return on Equity (ROE). The unstandardized coefficient for NPLs is -0.003, indicating that a unit increase in NPLs leads to a slight decrease in ROE by 0.003 units. However, the p-value of 0.084 shows that this relationship is not significant at the 0.05% researcher in support of these findings is Makri et al. (2014), who found that NPLs negatively affect banks' profitability, particularly ROE, due to the increased risk of loan default. Similarly, Espinoza and Prasad (2010) argued that higher levels of NPLs reduce a bank's capacity to generate income, thereby lowering ROE. Researchers against these findings include Athanasoglou et al. (2008), who argued that the impact of NPLs on profitability might be less significant in banks with strong capital buffers or diversified income sources, which can absorb loan losses. They suggest that NPLs do not always have a significant negative impact on ROE.

- What is the impact of liquidity on the financial performance of Deposit Money Banks (DMBs) in Nigeria, as measured by Return on Equity (ROE).

From the results provided, liquidity has a significant negative impact on the financial performance of Deposit Money Banks (DMBs) in Nigeria, as measured by Return on Equity (ROE). The unstandardized coefficient for liquidity is -0.003, indicating that a unit increase in liquidity results in a reduction of ROE by 0.003 units. The p-value of 0.001 shows that this relationship is statistically significant, suggesting that higher liquidity levels lead to a decrease in ROE. This result implies that while liquidity is important for covering short-term obligations, maintaining excessively high liquidity can be detrimental to profitability, as banks may not be efficiently using their assets to generate returns. Banks with higher liquidity may be overly conservative, keeping too many resources in low-yield liquid assets rather than investing them in more profitable ventures. Researchers supporting these findings include Vodová (2013),

who found that high liquidity levels can lower profitability, as banks may miss out on more profitable investment opportunities. Similarly, Bourke (1989) suggests that banks maintaining excess liquidity tend to have lower ROE. On the other hand, researchers like Molyneux and Thornton (1992) argue that liquidity can sometimes have a positive effect on financial performance, as it helps manage risks effectively, ensuring stability and confidence. However, this depends on the bank's management strategy.

- What is the relationship between Non-Performing Loans and liquidity have on return on equity of Nigerian DMBs

The relationship between Non-Performing Loans (NPLs) and liquidity, in relation to Return on Equity (ROE) of Nigerian Deposit Money Banks (DMBs), reveals a negative impact, as both variables contribute to the reduction of ROE. The coefficient for NPLs is -0.003, indicating that an increase in NPLs leads to a slight decrease in ROE, though this relationship is not statistically significant (p-value of 0.084). In contrast, liquidity shows a stronger and statistically significant negative relationship with ROE, with a coefficient of -0.003 and a p-value of 0.001.

Together, these results suggest that while liquidity plays a more prominent and significant role in reducing ROE, NPLs also contribute negatively, though less significantly. The combined impact of higher NPLs and excessive liquidity can strain a bank's financial performance, as resources are either tied up in non-performing assets or held in liquid but low-yield investments. This reduces the bank's ability to effectively generate returns on equity.

## CONCLUSION

The analysis of Non-Performing Loans (NPLs) and liquidity on the financial performance of Nigerian Deposit Money Banks (DMBs), as measured by Return on Equity (ROE), reveals significant insights. Non-Performing Loans have a negative but statistically insignificant impact on ROE, suggesting that while there is a decrease in ROE associated with higher NPLs, the effect is not strong enough to draw definitive conclusions. In contrast, liquidity has a significant negative impact on ROE, indicating that higher liquidity levels are associated with lower ROE. This implies that while maintaining sufficient liquidity is crucial for managing short-term obligations, excessive liquidity may hinder profitability by restricting investment opportunities.

Overall, the findings highlight the delicate balance banks must strike between maintaining liquidity and managing asset quality. Effective management of both liquidity and NPLs is crucial for optimizing financial performance and ensuring robust returns on equity. Future strategies should focus on optimizing liquidity management to enhance profitability and minimize the negative impact of NPLs on financial performance.

## RECOMMENDATION

- Banks should aim to strike a balance between maintaining sufficient liquidity to meet short-term obligations and investing in higher-yield assets. Excessive liquidity, while ensuring safety, may constrain profitability. Implementing liquidity management strategies that align with the bank's risk profile and growth objectives can help improve ROE.
- To mitigate the negative impact of Non-Performing Loans (NPLs), banks should enhance their credit risk assessment and monitoring processes. Implementing robust credit evaluation criteria, improving loan recovery strategies, and regularly reviewing the quality of the loan portfolio can help reduce NPLs and their adverse effects on ROE.
- Banks should explore diverse investment opportunities to optimize the return on their liquid assets. This includes investing in higher-yielding assets that align with the bank's risk appetite and strategic goals, thereby improving profitability and ROE.

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