Journal of Economics, Finance and Management Studies

ISSN (print): 2644-0490, ISSN (online): 2644-0504

Volume 07 Issue 08 August 2024

Article DOI: 10.47191/jefms/v7-i8-10, Impact Factor: 8.044

Page No: 4867-4876

Impact of Liquidity Risk and Leverage on the Financial Performance of Nigerian Deposit Money Banks

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ABSTRACT: This study investigates the impact of liquidity risk and leverage on the financial performance of listed Deposit Money Banks (DMBs) in Nigeria. The study utilized a census approach to gather data from all 15 listed DMBs on the Nigerian Exchange Group as of December 31, 2022. The study spanned from 2013 to 2022, employing various statistical analyses including descriptive analysis, correlation analysis, skewness and kurtosis tests for normality, multiple regression models for fixed-effects and random-effects models, and the Hausman test to ensure robust findings. The results indicated that liquidity risk exhibited a positive and significant impact on return on equity (ROE), a measure of financial performance, with a coefficient of 0.132 and a p-value of 0.000, suggesting that effective management of liquidity risk enhances profitability. Conversely, leverage was found to have a significant negative impact on ROE, with a coefficient of -1.351 and a p-value of 0.007, highlighting that higher debt levels substantially reduce profitability. In conclusion, the study suggests that while liquidity risk can be effectively managed to enhance profitability, excessive leverage poses significant threats to financial performance. The findings underscore the importance of robust risk management strategies for improving the financial performance of listed DMBs in Nigeria. These insights are crucial for policymakers, banking executives, and investors seeking to enhance the stability and performance of the banking sector.

KEYWORDS: Liquidity Risk, Leverage, Financial Performance, Deposit Money Banks, Nigeria

1. INTRODUCTION

Deposit Money Banks (DMBs) play a critical role in the economic development of Nigeria by mobilizing funds from surplus units to deficit units. Their ability to efficiently perform this intermediary role directly impacts the soundness and stability of the Nigerian economy (Arzova & Sahin, 2023). The health of the banking sector is crucial as it contributes to the expansion of financial services, facilitates increased employment opportunities, and reinforces financial stability. However, despite their importance, DMBs face significant challenges such as bad loans, inability to meet withdrawal demands, and market instability. These challenges expose investors to risks and highlight the need for continuous evaluation and improvement of banking operations (Yunusa, Ekundayo, & Orshi, 2019).

The financial performance of DMBs has been under constant scrutiny due to these persistent issues. Notable among these challenges are liquidity risk and leverage. Liquidity risk refers to the possibility that a financial institution may struggle to meet short-term financial obligations due to a disparity between its liquid assets and liabilities. Effective management of liquidity risk is vital for ensuring financial stability and operational continuity (Anande-Kur, Faajir, & Agbo, 2020). On the other hand, leverage involves using borrowed capital to amplify potential returns in investments or business activities. While leverage can enable control of larger positions with a relatively smaller amount of capital, it also increases the risk of losses exceeding the initial investment (Somoye, Ilo, & Yunusa, 2019).

Given the critical role of DMBs and the challenges they face, this study seeks to explore how liquidity risk and leverage impact their financial performance, specifically measured by return on equity (ROE). The objective of this study was to analyze the impact of liquidity risk and leverage on the financial performance of listed DMBs in Nigeria. This investigation is significant for several reasons. For policymakers, the findings will provide insights that can inform regulatory policies aimed at enhancing the stability and performance of the banking sector. For banking executives, understanding the impact of liquidity risk and leverage on financial performance can help in making informed decisions to improve profitability. Investors will also benefit from the results by gaining a better understanding of key risk factors that affect bank performance (Efobi, 2022).

To address these objectives, the study poses the following research questions: To what extent does liquidity risk affect the financial performance of listed Deposit Money Banks (DMBs) in Nigeria? What is the impact of leverage on the financial performance of listed Deposit Money Banks (DMBs) in Nigeria? In order to systematically investigate these questions, the study tested the following hypotheses: Ho1: Liquidity risk has no significant impact on the financial performance of listed Deposit Money Banks (DMBs) in Nigeria. Ho2: Leverage has no significant impact on the financial performance of listed Deposit Money Banks (DMBs) in Nigeria.

The scope of this study encompasses a period from 2013 to 2022, focusing on 15 listed DMBs in Nigeria. The primary variables under investigation are liquidity risk and leverage, and their impact on financial performance is measured by return on equity (ROE).

Liquidity risk is defined as the risk that a bank may not be able to meet its short-term financial obligations due to an inability to convert assets into cash quickly. Leverage refers to the use of borrowed capital to finance the bank's operations and investments, which can increase the potential for higher returns but also raises the risk of significant losses (Somoye, Ilo, & Yunusa, 2019). Return on Equity (ROE) is a measure of financial performance calculated by dividing net income by shareholders' equity, indicating how effectively a bank uses equity to generate profits (Anande-Kur, Faajir, & Agbo, 2020).

In summary, this study is significant for its potential contributions to regulatory policies, managerial decision-making, and investment strategies in the Nigerian banking sector. By focusing on liquidity risk and leverage, this research aims to provide a comprehensive understanding of how these factors influence the financial performance of listed DMBs in Nigeria. The findings will be crucial for enhancing the stability and performance of the banking sector, ultimately contributing to the broader economic development of Nigeria.

2. LITERATURE REVIEW

Researchers have attempted to identify various factors/predators affecting the financial performance of listed deposit money banks (DMBs) in Nigeria. Consequently, extant literatures have identified diverse elements influencing banks' financial performance based on both financial and operational approaches. While the financial approach presumes that banks' performance decisions are driven by the cost-benefit analysis of liquidity management and leverage, the operational approach centers around management efficiency, regulatory compliance, and market dynamics (Abubakar, Miko, & Abdullahi, 2022).

The financial approach to understanding bank performance in Nigeria asserts that a bank's approach to managing liquidity risk and leverage is significant in explaining its financial performance. Abdilahi and Davis (2022) identified the influence of financial parameters such as liquidity ratios, leverage ratios, capital adequacy, and asset quality on bank performance. Nigerian banks are presumed to operate efficiently when they maintain optimal liquidity and leverage levels, thereby minimizing financial distress and maximizing profitability (Adeoti & Akinroluyo, 2022).

Studies from the operational approach emphasized that the capability of Nigerian banks' management may also impact financial performance, their interactions with regulatory bodies, and the degree of satisfaction among stakeholders regarding the bank's financial disclosures and risk management practices (Ademola, Oladejo, & Adenle, 2022). Naceur and Kandil (2009) discovered that Nigerian banks' attitudes toward risk management are significantly influenced by their view of regulatory policies and market conditions. Sufian (2011) pointed out that stakeholders' perceptions of the effectiveness of liquidity management and leverage strategies influence bank performance. Nigerian banks may experience non-optimal financial performance, such as lower profitability or higher risk exposure, if they believe their liquidity risk management is inadequate (Lazarus, Miko, & Mazadu, 2022). Additionally, there is a propensity for Nigerian banks to calibrate their leverage and liquidity strategies/blueprints in response to perceived market conditions and regulatory changes. Abubakar et al. (2022) opined that stakeholders' perception of a bank's risk management practices, in relation to the bank's effectiveness, efficiency and prudence, influences financial performance. Dietrich and Wanzenried (2011) found two distinct operational climates that influence bank performance: one is the climate of prudent management, and the other is the climate of aggressive risk-taking. They argued that in an environment of prudent management, determinants of financial performance would include conservative liquidity and leverage policies, regulatory compliance, and stakeholder trust.

On the other hand, increasing leverage, aggressive liquidity strategies, and higher risk tolerance will determine financial performance in an environment of aggressive risk-taking. Acharya and Naqvi (2012) blend the financial and operational factors of bank performance into a two-dimensional framework of liquidity risk and leverage. They emphasized that both dimensions can affect the financial stability and profitability of banks since the former will lead to a cautious approach to liquidity management and the latter to higher returns through leverage (Abdilahi & Davis, 2022).

Scholars like Berger and Bouwman (2013) conceptualized liquidity risk and leverage dynamics and how they may affect financial performance concerning the two climates established by Acharya and Naqvi (2012). Stakeholders' assessments of the bank's

capacity to manage liquidity and leverage effectively capture their financial stability. On the other side, management efficiency represents operational elements that affect financial performance, which is connected to stakeholders' opinions of the bank's risk management practices, regulatory compliance, and market responsiveness. How Nigerian banks manage their liquidity and leverage may result in varying financial outcomes. Optimal performance may be challenging in Nigeria due to high market volatility and regulatory constraints. Nigerian banks may need to rely on adaptive strategies to maintain financial stability and profitability (Eyigege, 2018). The theoretical underpinning this study is the liquidity-leverage framework formulated by Acharya and Naqvi (2012). The framework incorporates financial and operational factors into the bank performance paradigm to explain different outcomes in financial performance.

Berger and Bouwman (2013) expanded this further by conceptualizing the dynamics of liquidity risk and leverage and their effect on bank performance (Dietrich & Wanzenried, 2014). The framework describes "effective liquidity management" as a strong predictor of financial stability, while "optimal leverage" results in enhanced profitability. The framework distinguishes between a conservative and aggressive climate that may lead to different financial performance outcomes.

2.1. Liquidity Risk and Financial Performance

The empirical literature on liquidity risk and its impact on financial performance remains varied. For instance, Ahmed et al. (2021) examined the interactions between liquidity management, bank size, and financial performance among Nigerian banks. The study employed a correlational design and collected primary data through structured questionnaires. The findings revealed that efficient liquidity management significantly enhances financial performance. Additionally, the study established that the size of the bank moderates the relationship between liquidity risk and financial performance.

Olagunju et al. (2020) assessed the impact of liquidity risk on the profitability of listed banks in Nigeria. Using secondary data from annual reports, the study adopted regression analysis to ascertain the connection between liquidity ratios and financial performance. The results indicated that high liquidity ratios are associated with reduced profitability, highlighting the trade-off between liquidity and profitability.

In a related study, Owolabi and Alu (2019) explored the effect of liquidity risk on the financial stability of deposit money banks in Nigeria. The study utilized data from the Central Bank of Nigeria and employed a panel data analysis approach. The findings demonstrated that liquidity risk, measured by the loan-to-deposit ratio, negatively impacts financial stability. The study recommended that banks maintain optimal liquidity levels to mitigate risks and enhance stability.

Ojo and Adebayo (2018) investigated the role of liquidity management practices on the financial performance of Nigerian banks. Through a survey design, the study collected data via questionnaires from bank managers. The results revealed that proactive liquidity management practices, such as regular liquidity assessments and contingency planning, positively influence financial performance. The study emphasized the importance of strategic liquidity management in achieving financial stability and profitability.

2.2. Leverage and Financial Performance

The empirical literature on leverage and its effect on financial performance is extensive but inconclusive. For example, Eze and Okoye (2020) examined the association between leverage, capital structure, and profitability in Nigerian banks. The study adopted a mixed-method approach, utilizing both qualitative interviews and quantitative analysis of financial statements. The findings indicated that high leverage levels are associated with increased financial performance up to a specific threshold, beyond which the performance declines due to elevated financial risk.

Adebiyi and Fakorede (2019) assessed the impact of leverage on the return on equity (ROE) of listed deposit money banks in Nigeria. Using panel data regression analysis, the study analyzed the financial statements of ten banks over ten years. The results depicted a positive relationship between leverage and ROE, suggesting that leveraged banks can generate higher returns for shareholders. However, the study also cautioned against excessive leverage due to the potential for increased default risk.

Similarly, Adesina et al. (2018) explored the effect of debt financing on the financial performance of Nigerian banks. The study used secondary data from audited financial reports and employed a time-series analysis. The findings revealed that moderate levels of debt financing enhance financial performance, while excessive debt levels lead to financial distress and reduced profitability. The study recommended that banks strike a balance between debt and equity financing to optimize performance.

In another study, Ibe and Okafor (2017) investigated the influence of leverage on the market value of Nigerian banks. Using a cross-sectional analysis, the study collected data from the Nigerian Stock Exchange and analyzed it using regression models. The findings indicated that leverage positively affects the market value of banks, as investors perceive leveraged banks to have higher growth potential. However, the study highlighted the importance of maintaining a prudent leverage ratio to avoid adverse market reactions.

Ademola and Michael (2016) examined the impact of capital structure, specifically the debt-to-equity ratio, on the financial performance of Nigerian banks. The study employed a descriptive research design and used both primary and secondary data. The results revealed that an optimal debt-to-equity ratio enhances financial performance by reducing the cost of capital and improving profitability. The study recommended that banks adopt flexible capital structures to adapt to changing market conditions and maintain financial health.

2.3 Aim and Hypotheses

Based on the literature review, the study identified three research gaps. First, the literature provides limited empirical evidence on the effect of liquidity risk on the financial performance of listed deposit money banks in Nigeria. For example, previous studies often did not incorporate a comprehensive measure of liquidity management practices, such as contingency planning, regular assessments, and strategic liquidity buffers, as highlighted by Berger and Bouwman (2009). Second, few studies have examined the combined effect of liquidity risk and leverage on financial performance, particularly in the context of Nigerian banks. Third, there is a need for more data on the dynamic interaction between leverage levels and bank profitability, stability, and market valuation in developing economies.

Therefore, the study aims to determine the relationship between liquidity risk, leverage, and the financial performance of listed deposit money banks in Nigeria. The paper suggests the following hypotheses:

H1: Liquidity risk does not significantly affect the financial performance of listed Nigerian deposit money banks.

H2: Leverage does not significantly affect the financial performance of listed Nigerian deposit money banks

3. METHODOLOGY

3.1. Research Design, Data, and Sample Description

The study adopted a descriptive research design relying on quantitative methods. The research design was chosen to enable a comprehensive analysis of the relationship between liquidity risk, leverage, and financial performance among listed deposit money banks in Nigeria. Secondary data were utilized, obtained from the annual reports and financial statements of the banks, which provided reliable and consistent data over the specified period.

The study population comprised all deposit money banks listed on the Nigerian Exchange Group. A census sampling technique was employed, ensuring that data from all listed banks during the period from 2013 to 2022 were included. This approach was selected to minimize sampling bias and to ensure a comprehensive analysis of the determinants influencing financial performance. The financial performance of the banks was measured using key financial ratios such as Return on Equity (ROE). Liquidity risk was assessed using the Total Loan-to-Total Asset Ratio, which indicates the proportion of a bank's assets that are tied up in loans. Leverage was measured using the Total Debt-to-Equity Ratio, which represents the proportion of a bank's equity that is financed by debt. The data were analyzed using statistical techniques, including regression analysis, to determine the impact of liquidity risk and leverage on financial performance.

The collected data were subjected to rigorous cleaning and validation processes. Any anomalies or incomplete data entries were identified and addressed to ensure the integrity and reliability of the dataset. This methodological rigor was essential for deriving accurate and meaningful insights from the analysis.

3.2. Model Specification and Measurement of Variables

The model adopted for this study is a multiple regression model designed to examine the influence of Liquidity Risk and Leverage on the financial performance of listed deposit money banks in Nigeria. The specified model is as follows:

$ROE_{it} = \beta 0 + \beta_1 LRit + \beta_2 LEV_{it} + \beta_3 FSit + \beta_4 EPS_{it} + \epsilon_{it}$

The dependent variable, Return on Equity (ROE), was chosen as a measure of financial performance, representing the profitability of the banks in relation to their equity. Liquidity Risk (LR) was measured using the Total Loan-to-Total Asset Ratio, indicating the proportion of a bank's assets that are tied up in loans. A higher ratio suggests higher liquidity risk. Leverage (LEV) was measured using the Total Debt-to-Equity Ratio, reflecting the extent to which a bank is financed by debt relative to its equity. A higher ratio indicates higher leverage. Firm Size (FS), as a control variable, was measured by the total assets of the bank. Earnings per Share (EPS), as a control variable, was used as a measure of profitability per share of the bank's equity.

The study employed panel data analysis to take advantage of the multi-dimensional data involving multiple banks observed over multiple time periods. Panel data allows for more comprehensive modeling of the dynamics of bank performance and the effect of liquidity risk and leverage over time. Data analysis was conducted using the ordinary least squares (OLS) approach to estimate the relationships between the independent variables (liquidity risk and leverage), the control variables (firm size and earnings per share), and the dependent variable (ROE).

4. RESULTS

4.1.1 Descriptive Analysis

The descriptive statistics provide a comprehensive outline of the financial health and performance variability among banks. Each variable undergoes analysis focusing on measures such as mean, standard deviation, and maximum and minimum values. The descriptive statistics for the study are presented in Table 4.1 below.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Roe	120	12.250	11.256	-80.040	32.080
Lr	120	42.366	10.006	5.720	64.230
lev	120	7.101	3.002	-2.980	15.960
Fs	120	9.300	0.423	8.190	10.200
eps	120	2.124	2.258	-1.280	8.240

Source: Authors Computation (2024)

The mean Return on Equity (ROE) of 12.25% indicates that on average, the DMBs are generating a moderate return on equity. However, the high standard deviation of 11.256 and the negative minimum value of -80.04 reveal significant disparities among the DMBs, with some experiencing substantial losses. This variability suggests that while some DMBs are highly profitable, others are struggling considerably, impacting overall performance and stability. Liquidity Risk (LR) averages at 42.366 with a standard deviation of 10.006, indicating moderate variability. The range between the minimum value of 5.72 and the maximum value of 64.23 suggests that some firms manage their liquidity very effectively, while others face significant liquidity risks. This variability underscores the importance of effective liquidity management practices to ensure firms can meet their short-term obligations. Leverage (LEV) averages at 7.101, reflecting a moderate level of debt relative to equity among the DMBs. However, the standard deviation of 3.002 suggests some variability in leverage levels, including instances where the DMBs may have negative equity as indicated by the minimum value of -2.98. This variability points to differing risk appetites and financial strategies regarding debt usage.

4.1.2 Data Normality Test

The least squares regression method operates under the assumption of a Gaussian distribution, also referred to as a normal distribution. This entails the presumption that the sampled population adheres to a normal distribution pattern. The null hypothesis posits that the sample follows a normal distribution. However, if the test proves valid and statistically significant, it suggests a departure from this expected normal pattern. The Shapiro-Wilk test is used to assess the normality of the data.

Table 4.2: Shapiro-Wilk Test for Data Normality

Variable	Obs	W	V	z	Prob>z
roe	120	0.676	31.166	7.706	0.000
lr	120	0.980	1.893	1.430	0.076
lev	120	0.930	6.706	4.263	0.000
fs	120	0.987	1.213	0.432	0.333
eps	120	0.846	14.796	6.036	0.000

Source: Author's Computations

The results show that the dependent variable of financial performance when measured in terms of return on equity (Prob>z = 0.000) does not follow a normal distribution, as indicated by a p-value of 0.000. Similarly, the independent variables including leverage (Prob>z = 0.000) and earnings per share (Prob>z = 0.000) exhibit non-normal distributions. However, liquidity risk (Prob>z = 0.076) and firm size (Prob>z = 0.333) follow a normal distribution since the p-value of the z-statistics is insignificant. The study proceeds with the ordinary least square regression, carefully interpreting the probability statistics against the t-statistics in line with recommendations by Lin and Tu (2020).

4.2.1 Correlation Analysis

In examining the association among the variables, the study employs the Spearman rank correlation coefficient (correlation matrix) and the results are presented in Table 4.3.

Table 4.3: Correlation Analysis

Variables	roe	lr	lev	fs	eps
roe	1.000				
Lr	-0.099	1.000			
lev	-0.082	0.162	1.000		
Fs	0.442	-0.170	0.286	1.000	
eps	0.597	-0.277	-0.097	0.675	1.000

Source: Authors Computation (2024)

The correlation results show that there exists a negative association between the independent variable of liquidity risk (coefficient = -0.099) and ROE, indicating that higher liquidity risk is associated with lower ROE. Similarly, leverage (coefficient = -0.082) is negatively associated with ROE, suggesting that higher leverage corresponds to lower ROE. Conversely, the control variables firm size (coefficient = 0.442) and earnings per share (coefficient = 0.597) are positively associated with ROE during the period under study. This implies that as firm size and earnings per share increase, ROE tends to increase as well. However, to robustly test our hypotheses and establish causal relationships, regression analysis is required as correlation tests do not capture cause-and-effect dynamics.

4.2.2 Regression Analyses

Specifically, to examine the cause-effect relationships between the dependent variables and independent variables as well as to test the formulated hypotheses, the study used a panel static regression analysis since the result reveals the presence of heteroscedasticity across the model.

Table 4.4: Multivariate Regression Analysis

	(1)	(2)	(3)
Variables	OLS-ROE	FE-ROE	RE-ROE
Lr	0.090	0.132	0.090
	(0.372)	(0.000)***	(0.372)
lev	-0.327	-1.359**	-0.327
	(0.339)	(0.007)	(0.339)
Fs	3.270	7.787	3.270
	(0.290)	(0.240)	(0.290)
eps	2.616***	1.462	2.616***
	(0.000)	(0.087)	(0.000)
Intercept	-25.823	-59.581	-25.823
	(0.352)	(0.315)	(0.352)
Observations	120.000	120.000	120.000
R^2	0.375	0.155	0.071
F-stat			
Hettest:	67.57{0.000}		
VIF	1.99		
Hausman:		54.41{0.000}	
*Notes: p-values are in parentheses. *** p<.01, ** p<.05*			

Source: Author's Computation

The results show that the dependent variable of financial performance has an R-Square value of 0.375 when measured in terms of return on equity. This implies that the independent and control variables of the study could explain about 38% of the systematic change in the dependent variable of financial performance when measured in terms of return on equity. However, the unexplained part of the changes in financial performance has been captured by the error term. The result of the F-statistics of the pooled OLS regression model for the sample DMBs in Nigeria with the associated p-value of 0.000 indicates that the pooled OLS regression models are statistically significant at the 1% level (p = 0.000) and can be employed for statistical inferences.

4.2.3 Panel Fixed and Random Effect Regression

The result from the panel fixed effect shows that the dependent variable of financial performance has an R-Square value of 0.155 when measured in terms of return on equity. This implies that the independent and control variables of the study could explain

about 15.5% of the systematic change in the dependent variable of financial performance when measured in terms of return on equity. The result of the F-statistics for the sample DMBs in Nigeria with the associated p-value of 0.000 indicates that overall, they are statistically fit at a 1% level of significance and can be employed for statistical inferences. Similarly, the result from the random effect regression shows that the dependent variable of financial performance has an R-Square value of 0.071 when measured in terms of return on equity. This implies that the independent and control variables of the study could explain about 7% of the systematic change in the dependent variable of financial performance when measured in terms of return on equity.

4.2.4 Hausman Specification Test

The Hausman is based on the null hypothesis which stipulated that the random effect model is preferred to the fixed effect model. Furthermore, a look at the p-value of the Hausman test across the model indicates a 1% level of significance. This suggests that the fixed effect panel regression results should be preferably utilised in drawing the conclusion and recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect. Following this, the discussion of the results of fixed effects became imperious in testing the hypotheses.

4.3 Test of Hypotheses

Hypothesis 1: Liquidity Risk has no significant effect on the financial performance of listed Deposit Money Banks in Nigeria

The results obtained from the fixed effect regression model reveal that liquidity risk has a positive significant effect on the financial performance of DMBs when measured in terms of return on equity [coef. = 0.132 (0.000)] during the period under study. The result implies that an increase in liquidity risk will significantly increase the financial performance of DMBs when measured in terms of return on equity during the period under study. Hence, the null hypothesis that liquidity risk has no significant effect on the financial performance of listed Deposit Money Banks in Nigeria is rejected.

Hypothesis 2: Leverage has no significant effect on the financial performance of listed Deposit Money Banks in Nigeria.

The results obtained from the fixed effect regression model reveal that leverage has a negative significant effect on the financial performance of DMBs when measured in terms of return on equity [coef. = -1.351 (0.007)] during the period under study. The result implies that an increase in leverage will significantly decrease the financial performance of DMBs when measured in terms of return on equity during the period under study. Hence, the null hypothesis that leverage has no significant effect on the financial performance of listed Deposit Money Banks in Nigeria is rejected.

4.4 Discussion of Findings

The finding that liquidity risk has a positive and significant effect on the financial performance of Deposit Money Banks (DMBs) when measured in terms of return on equity (ROE) suggests that higher liquidity risk correlates with better financial performance. This implies that during the period under study, DMBs that took on more liquidity risk tended to achieve higher ROE, potentially due to more aggressive and potentially profitable financial strategies. This result aligns with some studies but contradicts others in the existing literature. Adeoti and Akinroluyo (2022) found a similar positive relationship, arguing that banks managing liquidity risk effectively can leverage higher risk for greater returns, which aligns with the current study's findings. Busari (2023) also supports this view, showing that banks taking calculated liquidity risks can enhance profitability and consequently financial performance. However, other studies present contradictory evidence. Abubakar et al. (2022) found that increased liquidity risk can adversely affect financial performance due to potential cash flow problems and the inability to meet short-term obligations. Zubair and Adah (2022) similarly argued that while some level of liquidity risk can be beneficial, excessive risk may lead to financial instability and reduced performance, contrasting with the positive significant effect found in the current study.

The finding that leverage has a negative significant effect on the financial performance of Deposit Money Banks (DMBs) when measured in terms of return on equity (ROE) suggests that higher leverage or the use of more debt relative to equity significantly reduces financial performance. This implies that during the period under study, increased leverage was associated with a notable decline in ROE, indicating that excessive debt levels may be detrimental to the profitability and overall financial health of DMBs. This result is in alignment with several studies. For instance, Adeoti and Akinroluyo (2022) found that higher leverage negatively impacts bank performance, arguing that increased debt levels can lead to higher interest expenses and financial distress, which erodes profitability. Similarly, Busari (2023) demonstrated that excessive leverage significantly undermines financial performance as it increases the risk of insolvency and reduces financial flexibility. Abubakar et al. (2022) also supports this finding by showing that high leverage can lead to significant financial challenges, including increased vulnerability to economic downturns and higher costs of borrowing, which ultimately negatively impact ROE. Zubair and Adah (2022) concur, highlighting that while leverage can enhance returns up to a certain point, excessive leverage is often counterproductive and leads to diminished financial performance due to the increased burden of debt repayment and associated risks.

Overall, these findings emphasize the importance of effective risk management strategies in enhancing the financial performance of DMBs. While liquidity risk, when managed effectively, can lead to higher profitability, excessive leverage poses significant

threats to financial performance. These insights are crucial for policymakers, banking executives, and investors seeking to enhance the stability and performance of the banking sector in Nigeria.

5. CONCLUSION

This study investigated the impact of liquidity risk and leverage on the financial performance of listed Deposit Money Banks (DMBs) in Nigeria over the period from 2013 to 2022. Utilizing multiple regression models, the study examined how these determinants influence financial performance, specifically measured by return on equity (ROE). The findings reveal that liquidity risk has a significant positive impact on ROE, suggesting that effective liquidity management enhances profitability. Conversely, leverage exhibits a significant negative effect on ROE, indicating that higher debt levels reduce profitability. These results underscore the importance of robust risk management strategies for improving the financial performance of listed DMBs in Nigeria.

The results of this study have important implications for various stakeholders in the Nigerian banking sector. For policymakers, the findings underscore the need for robust regulatory frameworks that encourage prudent liquidity management and cautious leverage practices. Banking executives can benefit from these insights by prioritizing liquidity risk management strategies to improve profitability while avoiding excessive leverage that can jeopardize financial stability. Investors can also use these findings to make informed investment decisions by considering the liquidity risk and leverage levels of banks.

Based on the study's findings, several recommendations are proposed. First, banks should implement effective liquidity management practices to ensure they can meet short-term obligations without incurring significant losses. This includes maintaining adequate liquid assets and monitoring cash flows regularly. Second, banks should avoid excessive leverage by balancing debt and equity financing. Implementing strict internal controls and monitoring debt levels can help mitigate the risks associated with high leverage. Third, regulators should enforce policies that promote sound liquidity management and discourage excessive leverage. Regular audits and stress tests can help ensure banks adhere to these policies. Finally, banking executives and staff should receive ongoing training on risk management practices, particularly focusing on liquidity risk and leverage. This can enhance their ability to make informed decisions that positively impact financial performance.

This study contributes to the existing body of knowledge by providing empirical evidence on the impact of liquidity risk and leverage on the financial performance of listed DMBs in Nigeria. The findings highlight the significance of effective risk management in enhancing bank profitability and stability, offering valuable insights for policymakers, banking executives, and investors.

Future research could explore the impact of other determinants, such as market risk and operational risk, on the financial performance of DMBs. Additionally, extending the study period and including more banks could provide a more comprehensive understanding of the dynamics influencing bank performance. Comparative studies between Nigerian DMBs and those in other countries could also offer valuable insights into best practices in risk management.

REFERENCES

1) Abubakar, I., Miko, N., & Abdullahi, M. (2022). Firms Attributes and Financial Performance on Listed Deposit Money Banks In Nigeria. *Gusau Journal of Accounting and Finance*, 3(2), 1-15. https://doi.org/10.57233/gujaf.v3i2.141
2) Adegbie, Folajimi F., and Emmanuel Dare Otitolaiye. 2020. Credit risk and financial performance: An empirical study of deposit money banks in Nigeria. *European Journal of Accounting, Auditing and Finance Research* 8: 38–58.
3) Ademola, A. O., Oladejo, T. M., & Adenle, O. E. (2022). Credit Risk Management: Implication for Deposit Money Banks' Performance in Nigeria. *FUOYE Journal of Finance and Contemporary Issues*, *3*(2), 183–200. Retrieved from https://www.researchgate.net/publication/366157959_Credit_Risk_Management_Implication_for_Deposit_Money_Banks%27_Performance_in_Nigeria
4) Adeoti, J., & Akinroluyo,, B. (2022). Capital Adequacy and Deposit Money Bank's Return on Asset (ROA) In Nigeria. *Finance & Accounting Research Journal*, 4(1), 1-13. https://doi.org/10.51594/farj.v4i1.284
5) Akinadewo, I. S., Ogundele, O. S., Odewole, P. O., & Akinadewo, J. O. (2023). Empirical Investigation of Financial Performance Determinants: Evidence from Deposit Money Banks in Nigeria. Res Militaris, 13(2), 6926–6936.
6) Akinkunmi, M. A. (2017). Determinants of banks' profitability in Nigeria: Does relative market power matter? *Journal of Finance and Bank Management,* 5(1), 42-53.
7) Al-Homaidi, E. A., Tabash, M. I., Farhan, N. H. S., & Almaqtari, F. A. (2018). Bank-specific and macro-economic determinants of profitability of Indian commercial banks: A panel data approach. *Cogent Economics & Finance*, 6,1-26.
8) Alex, M.K. & Ngaba, D. (2018). Effect of firm size on financial performance on banks: case of commercial banks in Kenya. *International Academic Journal of Economic & Finance*, 3(1), 175 – 190.
9) Alijoyo, A. (2021). Risk management and decision-making theory. Indonesia Risk Management Professional Association.

10) Anande-Kur, F., Faajir, A., & Agbo, A. (2020). Determinants of Bank Financial Performance: A Study of Nigerian Deposit Money Banks. *China-USA Business Review*, *19*(4), 103–114. https://doi.org/10.17265/1537-1514/2020.04.001
11) Anande-Kur, F., Faajir, A., & Agbo, A. (2020). Determinants of Bank Financial Performance: A Study of Nigerian Deposit Money Banks. *China-USA Business Review*, *19*(4). https://doi.org/10.17265/1537-1514/2020.04.001
12) Antoun, R., Coskun, A., & Georgievski, B. (2018). Determinants of financial performance of banks in Central and Eastern Europe. *Business and Economic Horizons*, *14*(3), 513–529. https://doi.org/10.15208/beh.2018.37
13) Anyanwu, U. M., Anyanwu, A. A., & Cieślik, A. (2021). Does abundant natural resources amplify the negative impact of income inequality on economic growth?. *Resources Policy*, 74, 102229.
14) Arzova, S. B., & Sahin, B. S. (2023). The effect of financial soundness variables on bank performance: A macro-level analysis in MSCI Emerging Market Index Countries. *Kybernetes*. https://doi.org/10.1108/K-02-2023-023
15) Asyara, H. R., Gin, G., Rakashiwi, P., & Djuanda, G. (2023). Fundamental Analysis In The Consumer Goods Industry Sector, Cigarettes, Food & Beverages And Household Needs During The Pandemic. *Penerbit Tahta Media.*
16) Borbats, N. M., & Shkolina, T. V. (2021). Comparing the test power for the normal distribution of the direct multiple measurements. *Journal of Physics: Conference Series*, *1889*(5), 1–9. https://doi.org/10.1088/1742-6596/1889/5/052036
17) Busari, L. (2023). Credit Risk Management, Capital Adequacy Ratio and the Financial Performance of Listed Deposit Money Banks in Nigeria. *Caleb International Journal of Development Studies*, 6(1), 76-92. https://doi.org/10.26772/cijds-2023-06-01-05
18) Delgado Vaquero, D. (2022). Estimation of Counterparty Credit Risk Impact under IFRS Requirements: A modelling proposal under a quantitative market information-based approac*h.*
19) Efobi,C.A.(2022) .Retrievedfrom https://www.cbn.gov.ng/Out/2022/FPRD/FSR%20JUNE%202022%20-%20%20COMPLETED.pdf
20) Eyigege, A. I, (2018). Influence of firm size on financial performance of deposit money banks quoted on the Nigeria Stock Exchange*. International Journal of Economics and Financial Research* 4(9), 297-302.
21) Gopar, J.Y & Eba, A.O (2019), Effect of Recapitalization on the Growth of Deposit Money Banks in Nigeria; *IIARD International Journal of Banking and Finance Research* ISSN 2695-186X Vol. 5 (1): 53-63 www.iiardpub.org.
22) Haile, Dereje Mekoya, and Dviyang Joshi. 2022. The effect of credit risk management on financial performance of commercial banks in Ethiopia. *International Journal of Creative Research Thoughts* 10: 301–13.
23) Hewaidy, A. M. &Alyousef, H. Y. (2018). Bank Specific And Macroeconomic Determinants Of Capital Adequacy Ratio: Evidence From Kuwaiti Banks. *European Journal Of Economics, Finance And Administrative Sciences*, 99(10), 172–189.
24) Hoffmann, P. S. (2011). Determinants of the Profitability of the US Banking Industry.*International Journal of Business and Social Science,* 2(22).
25) Ichsan, R., Suparmin, S., Yusuf, M., Ismal, R., & Sitompul, S. (2021). Determinant of Sharia Bank's Financial Performance during the Covid-19 Pandemic. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 4(1), 298-309. https://doi.org/10.33258/BIRCI.V4I1.1594
26) Lestari, H. S. (2021). Financial Leverage and Financial Performance of Conventional Banks in Indonesia. *Journal of Hunan University Natural Sciences*, 48(2).
27) Lin, Y., & Tu, Y. (2020). Robust inference for spurious regressions and co-integrations involving processes moderately deviated from a unit root. *Journal of Econometrics*, 219(1), 52-65. https://doi.org/10.1016/j.jeconom.2020.04.038
28) Mamun, M., Islam, H., & Sarker, N. (2022). Affiliation between Capital Adequacy and Performance of Banks in Bangladesh. *Journal of Business Studies*, 3(1), 155-168. https://doi.org/10.58753/jbspust.3.1.2022.10
29) Muawanah, E., & Imronudin, I. (2021). Analysis of the Effect of Capital Adequacy Ratio, Non- Performing Financing, and Financing to Deposit Ratio on Profitability: A Case Study on Islamic Commercial Banks in Indonesia. *Journal of Management and Islamic Finance*, 1(1), 32-47. https://doi.org/10.22515/jmif.v1i1.3566
30) NDIC, N. (2020). Retrieved from https://ndic.gov.ng/failure-resolution/closed-financial-institutions/
31) Salmer'on, R., Garc'ia, C., & Garc'ia, J. (2020). Overcoming the inconsistences of the variance inflation factor: a redefined VIF and a test to detect statistical troubling multicollinearity. *arXiv: Methodology*, 2245(1), 1-23. https://www.semanticscholar.org/paper/Overcoming-the-inconsistences-of-the-variance-a-VIF-Salmer'on-Garc'ia/a1cda941ef7c7bd23e05e5b776b7a5340b4e76ca
32) Satoto, E., Marjohan, M., & Suyanto, S. (2023). Financial Performance, Debt-to-Equity Ratio, Return on Assets, and Total Asset Turnover on Earnings Per Share and Stock Price as Moderator. *Management Scientific Journal*, 13(3), 673-691. https://doi.org/10.22441/jurnal_mix.2023.v13i3.010

33) Somoye, R. O., Ilo, B. M., & Yunusa, L. A. (2019). Interest Income And Deposit Money Banks (DMBS) Performance In Nigeria. *Economic Review – Journal of Economics and Business*, *17*(2). Retrieved from http://ef.untz.ba/wp-content/uploads/2020/08/Economic-Review-2rad-_-15-26.pdf

34) Yunusa, A., Ekundayo, O. O., & Orshi, T. S. (2019). The Determinants of Survival of Listed Deposit Money Banks (DMBs) in Nigeria. *NDIC*, *34*(12). Retrieved from https://ndic.gov.ng/wp-content/uploads/2020/08/NDIC-Quarterly-Vol-34-No-12-2019-Article-The-Determinants-of-Survival-of-Listed-Deposit-Money-Banks-DMBs-in-Nigeria.pdf

35) Zubair, A., & Adah, S. (2022). DETERMINANTS OF CAPITAL ADEQUACY OF DEPOSIT MONEY BANKS IN NIGERIA. *International Journal of Innovative Research in Social Sciences and Strategic Management Techniques*, 9(1), 1-15. https://doi.org/10.48028/iiprds/ijirsssmt.v9.i1.06