Research Article

Liquidity Management and Profitability of Commercial Banks in Nigeria

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Abstract

The study investigated the interplay among liquidity management measures and bank profitability in Nigeria, focusing on market liquidity, reserve management liquidity, and cashflow management. Using an ex post facto research design, the study analyzes secondary data from the audited financial reports of 10 commercial banks quoted on the Nigerian Exchange Group (NGX). These banks were selected based on their regulatory compliance and transparent reporting. Regression and correlation analyses were employed to test the hypotheses regarding the relationship between liquidity management and bank profitability, specifically profit after tax (PAT). The findings reveal an unfavourable and insignificant interplay among market liquidity and PAT, while reserve management liquidity and cashflow management show positive and significant relationships with PAT. The study concludes that effective reserve and cashflow management positively influences bank performance, while market liquidity strategies require reassessment. These results highlight the importance of prioritizing reserve and cashflow management to enhance profitability in Nigerian banks.

Keywords: *Liquidity, Bank Performance, Profit After Tax.*

1. Introduction

Liquidity management refers to the strategies and processes employed by financial institutions, particularly banks, must guarantee they have sufficient liquid assets to cover their immediate commitments and unforeseen cash demands without disrupting operations. It plays an essential function in attaining the stability and solvency of a bank, as inadequate liquidity can lead to severe consequences such as insolvency or even bank failure (Diamond & Dybvig, 1983). Banks achieve liquidity through a mix of holding cash reserves, investing in highly liquid assets, and managing cashflow from deposits and loans. The complexity of liquidity management has grown with the dynamic nature of the global financial system, and it requires continuous monitoring and adjustment based on market conditions. There are several tools and techniques available for liquidity management, including liquidity ratio analysis, stress testing, and the maturity profile of assets and liabilities. Banks utilise the liquidity coverage ratio (LCR) to guarantee that they possess an adequate quantity of liquid assets of superior quality to endure a 30-day liquidity stress scenario. Central banks also require banks to maintain reserves that act as a buffer in times of financial distress. By following these standards, banks can avoid liquidity shortages that could lead to a loss of confidence among depositors and investors (Basel Committee on Banking Supervision, 2013).

Effective liquidity management also involves monitoring the maturity structure of assets and liabilities. Mismatches in maturities can create liquidity problems when short-term obligations exceed short-term assets. This is particularly true for commercial banks, which often have long-term loans funded by short-term deposits. To mitigate this risk, banks employ techniques like asset-liability matching and maintaining a sufficient amount of highly liquid assets such as treasury bills and government bonds (Strahan, 2008). Banks can satisfy liquidity requirements by promptly converting these assets into currency with minimal price fluctuations.

Moreover, banks need to manage their liquidity in relation to market conditions. Market liquidity relates to the ability to buy or sell assets without affecting their price meaningfully. In times of financial stress, market liquidity can dry up, making it difficult for banks to sell assets without incurring losses. This has led to the development of secondary liquidity markets where banks can access liquidity by selling or borrowing against their assets. The importance of such markets was highlighted during the global financial crisis of 2007-2008, where a sudden collapse in market liquidity led to widespread bank failures (Brunnermeier, 2009).

Liquidity management is intrinsically tied to a bank's performance. Efficient liquidity management ensures that banks can meet their obligations while maintaining profitability, as having excess liquidity often results in idle funds that could otherwise be used for profitable investments. Conversely, inadequate liquidity exposes banks to significant risks, including insolvency and loss of customer confidence, which can directly impact performance (Berger & Bouwman, 2009). Therefore, retaining a delicate balance between liquidity and profitability is essential. Effective liquidity management enhances bank performance by ensuring stability, mitigating risks, and enabling banks to take advantage of investment opportunities without facing liquidity crises.

2. Problem Statement and Hypotheses Formulation

The performance of banks has been a subject of extensive research due to its importance in the financial stability and economic growth of a country. Scholars have examined various determinants of bank performance, such as capital adequacy, asset quality, and interest rate policy. Berger and Bouwman (2009) explored the role of capital in bank performance, showing that capital adequacy improves a bank's ability to withstand financial crises. Similarly, other researchers have looked at the effects of asset quality and credit risk management, emphasizing their impact on profitability and overall performance (Golin &Delhaise, 2013). However, while much research exists on traditional determinants of bank performance, less attention has been given to the influence of liquidity management on profitability, particularly in the Nigerian context.

Liquidity management has been recognized as a critical factor in maintaining bank stability, yet there is a limited number of studies that focus explicitly on its relationship with bank profitability. A few studies, such as those by Olagunju et al. (2011), have examined liquidity and performance in the Nigerian banking sector, but most of these studies offer broad overviews without a deep dive into specific liquidity management strategies like market liquidity, reserve management liquidity, and cashflow management. Additionally, studies by Olaoye and Olarewaju (2015) highlighted liquidity as one of the risk factors affecting the profitability of Nigerian banks but did not comprehensively assess the link between different liquidity management measures and performance indicators like profit after tax (PAT).

This gap in the literature suggests that there is insufficient research that specifically analyzes how distinct liquidity management measures influence the financial performance of banks, especially in the developing Nigerian banking sector. Liquidity risk, which occurs when banks cannot meet their short-term obligations, has shown to have a profound impact on bank profitability and long-term viability (Diamond & Rajan, 2005). However, the exact mechanisms through which market liquidity, reserve management liquidity, and cashflow management affect bank profitability in Nigeria remain underexplored. As a result, a more focused investigation into these liquidity measures is required to provide comprehensive insights for bank managers, investors, and policymakers. The purpose of this study is to close this research gap by examining the connection between Nigerian banks' performance and liquidity management strategies. The study's null hypotheses included the following:

H$_{01}$: There is no significant relationship between market liquidity and profit after tax of banks in Nigeria.
H$_{02}$: There is no significant relationship between reserve management liquidity and profit after tax of banks in Nigeria.

H$_{03}$: There is no significant relationship between cashflow management and profit after tax of banks in Nigeria.

3. Literature Review

Liquidity Management
Liquidity management refers to the strategies and practices used by banks to ensure they can meet their financial obligations as they arise without incurring significant losses. Effective liquidity management is essential for maintaining the solvency and operational efficiency of banks (Olokoyo, 2020). Poor liquidity management can lead to financial distress, as banks may struggle to meet short-term liabilities, which could escalate into solvency problems (Olagunju, Adeyanju, & Olabode, 2020). The liquidity preference theory suggests that banks tend to hold liquid assets as a precautionary measure, but excessive liquidity can hinder profitability due to missed investment opportunities (Keynes, 1936).

Research studies have emphasized the significance of liquidity management in enhancing bank performance. For instance, Adebayo et al. (2021) argue that banks with effective liquidity management strategies are better positioned to withstand economic shocks and maintain profitability. This is supported by the buffer theory of liquidity, which asserts that banks must hold enough reserves to meet unexpected liquidity demands while maintaining operational efficiency (Diamond & Rajan, 2001). Olawale (2020) adds that liquidity management practices should be tailored to the unique regulatory and market environment in which banks operate, particularly in developing countries like Nigeria.

Market Liquidity
The simplicity with which assets can be turned into currency without substantially influencing their price is referred to as market liquidity. In the banking sector, market liquidity is important because it ensures that banks can quickly liquidate assets to meet sudden withdrawal demands or other liabilities (Allen & Gale, 2004). However, holding large amounts of liquid assets, such as cash or easily sellable securities, can reduce profitability since these assets tend to generate lower returns compared to other investments (Modigliani & Miller, 1958).

Empirical studies have produced mixed findings regarding the relationship between market liquidity and profitability. Adeusi et al. (2020) found that excess market liquidity could negatively impact profitability, as banks holding too many liquid assets might miss out on profitable investment opportunities. On the other hand, Akinlo (2021) argues that maintaining a sufficient level of market liquidity is critical to avoid liquidity crises, which can have far-reaching consequences on bank performance.

Reserve Management Liquidity
Reserve management refers to the management of a bank's reserves, which are held to meet regulatory requirements and to provide a buffer against unforeseen liquidity needs. Effective reserve management ensures that banks can continue operating smoothly, even during periods of financial stress (Rochet & Vives, 2004). Regulatory bodies such as the Central Bank of Nigeria (CBN) set minimum reserve requirements to ensure that banks uphold a certain level of liquidity to cover short-term liabilities (CBN, 2022).

Research have demonstrated that reserve management has an essential part in bank performance. Ojo (2021) demonstrated that banks with strong reserve management practices tend to have higher profitability, as they are better equipped to handle liquidity shocks. Similarly, Uwuigbe et al. (2020) found that reserve management meaningfully impacts the financial stability and profitability of banks in Nigeria. These results align with the buffer theory, which

suggests that banks with sufficient reserves can manage liquidity risks more effectively, thus enhancing their performance.

Cashflow Management

Cashflow management involves the regulation of a bank's inflows and outflows of cash to ensure that it can meet its obligations while maintaining optimal liquidity. Poor cashflow management can lead to liquidity shortfalls, which can negatively impact profitability (Yusuf & Bello, 2022). Efficient cashflow management is essential for maintaining the liquidity needed for day-to-day operations, while also ensuring that excess cash is invested in profitable ventures (Brealey, Myers, & Allen, 2019).

Several studies emphasize the importance of cashflow management in determining bank performance. Owolabi and Obida (2021) argue that banks with strong cashflow management systems are more likely to achieve sustained profitability. Similarly, Adewale et al. (2021) found that effective cashflow management is positively correlated with the financial success of Nigerian banks. Ogunleye (2020) also supports this view, showing that poor cashflow management leads to liquidity problems, which can erode profitability.

Performance and Profitability of Banks

Bank performance is typically measured by profitability indicators such as return on assets (ROA) and return on equity (ROE). Profitability reflects a bank's ability to generate income from its assets while managing its liabilities efficiently (Olokoyo, 2020). Several factors, including liquidity management, capital adequacy, and risk management, affect the profitability of banks (Olagunju et al., 2020). Effective liquidity management is particularly crucial, as it ensures that banks can maintain operations and profitability even in the face of financial stress.

Studies have consistently shown that liquidity management plays a critical role in bank profitability. Olawale (2020) found that banks with efficient liquidity management practices tend to have higher profitability, as they are better able to meet their obligations and invest in profitable ventures. Similarly, Olagunju et al. (2020) highlighted the importance of balancing liquidity and profitability, noting that excessive liquidity can reduce profitability, while inadequate liquidity can lead to financial distress.

Empirical Review

A study conducted by Abu Rahma and Al-Amarneh (2022) examined the impact of liquidity management on the financial viability of banks located in Jordan. Using a fixed-effect regression model, the research examined the link between liquidity management and business metrics, including return on equity (ROE) and return on assets (ROA), for 15 commercial banks in Jordan between 2011 and 2020. The researchers found that banks with stronger liquidity management strategies measured by liquidity ratios such as the loan-to-deposit ratio showed improved profitability, particularly during periods of economic stress. However, they also pointed out that too much liquidity can reduce a bank's profitability due to lower returns on liquid assets. This research highlighted the need for Jordanian banks to balance liquidity and profitability effectively, suggesting that liquidity management is crucial for maintaining financial stability and improving overall performance in developing economies.

Kanga and Adjei (2020) examined the implication of liquidity management on the financial performance of deposit banks in Ghana. Using a dataset of 22 banks over the period from 2009 to 2018, the authors employed regression analysis to explore the interplay between liquidity ratios, like cash ratio and the liquid asset-to-total asset ratio, and profitability. Their findings indicated that maintaining high liquidity levels positively influences a bank's performance, as measured by ROA and ROE. However, the study noted that excessive liquidity could hinder profitability by tying up funds in low-return assets. The authors concluded that Ghanaian banks must carefully manage their liquidity to ensure both profitability and solvency, especially in an economy prone to liquidity shocks.

Mohammed and Zeng (2020) examined the implication of liquidity risk management on bank performance in Sub-Saharan Africa, focusing on commercial banks in Nigeria, Kenya, and South Africa. Using a sample of 30 banks from 2012 to 2019, the researchers applied dynamic panel data techniques to analyze the effects of liquidity risk on profit indicators like ROA and ROE. The study found that banks with better liquidity risk management, particularly those that maintain adequate liquidity buffers, exhibited higher profitability. Conversely, poor liquidity risk management led to lower profitability and increased vulnerability to liquidity shocks. The authors emphasized the importance of liquidity risk management as a crucial determinant of financial performance in Sub-Saharan Africa, where economic volatility and regulatory changes can significantly impact banks' operations.

Ali and Mughal (2021) analyzed the effect of liquidity management on the viability of Pakistani banks, focusing on the role of liquidity ratios in determining profitability. The study used panel data from 15 deposit banks in Pakistan over the period from 2010 to 2019 and employed both fixed and random effects models to examine the impact of liquidity management on ROA and ROE. The results showed that liquidity ratios such as the current ratio and loan-to-deposit ratio were positively correlated with profitability, indicating that banks that manage their liquidity more effectively are able to enhance their financial performance. However, the authors cautioned that maintaining excessively high liquidity could reduce profitability due to lower investment returns. This study contributed to the growing body of literature on liquidity management in emerging markets, highlighting the need for banks to adopt optimal liquidity strategies to enhance performance.

Ibrahim and Musah (2021) looked at the connection between how banks perform and managing liquidity. The study utilized panel data from 25 banks across eight WAEMU countries between 2011 and 2019. Using the GMM estimation method, the researchers found that liquidity management plays a critical role in determining the profitability and stability of banks in the region. Specifically, banks with higher liquidity reserves and more efficient liquidity management practices exhibited stronger financial performance. However, the authors noted that excessive liquidity could reduce profitability, particularly in countries with less developed financial markets where the returns on liquid assets are relatively low. The paper settled that managing liquidity is a key determinant of bank performance in WAEMU countries, and recommended that regulators encourage banks to maintain an optimal balance between liquidity and profitability.

Kim and Kim (2022) explored the link between management of liquidity and bank performance in South Korea, focusing on the post-financial crisis period. Using data from 19 commercial banks from 2011 to 2020, the authors employed a two-step GMM model to examine the implication of liquidity management on profitability, measured by ROA and net interest margins (NIM). The study found that South Korean banks that maintained higher levels of liquid assets performed better during times of financial stress, as they were able to meet short-term obligations without resorting to costly borrowing. However, the authors also found that holding excessive liquidity reduced profitability due to the low returns on such assets. This research provided insights into how South Korean banks can

manage liquidity effectively to improve profitability while remaining resilient to financial shocks.

4. Methodology

The study utilised ex post facto design. By analyzing historical financial data, the research examines the implication of past liquidity management decisions on profitability in Nigerian commercial banks. The research focuses on a population of 21 commercial banks in Nigeria, with a sample of 10 banks listed on the Nigerian Exchange Group (NGX). These banks were purposively selected for their transparency in reporting and their lack of regulatory issues, ensuring reliable data for analysis. The choice of listed banks is justified as they provide verified financial reports, offering insights into how liquidity management practices affect performance.

Secondary data from audited financial reports of the sampled banks were utilized, ensuring access to accurate liquidity ratios, profitability metrics, and other financial indicators. Regression and correlation analysis were used to determine the correlation between liquidity management measures such as market liquidity, reserve management, and cashflow management and bank profitability. These statistical techniques enabled the study to quantify and evaluate the significance and strength of the relationships. Additionally, descriptive statistics provided insights into data trends and distributions, giving a comprehensive view of liquidity management and performance across the selected banks.

Model Specification

The model can be specified as follows:

$$PAT_{it}=\beta_0+\beta_2 ML_{it}+\beta_2 RML_{it}+\beta_3 CFM_{it}+\varepsilon_{it}$$

Where:

PAT_{it} = Profit After Tax of bank i at time t, representing bank performance.
ML_{it} = Market Liquidity of bank i at time t, which measures the ability to convert assets to cash quickly.
RML_{it} = Reserve Management Liquidity of bank i at time t, representing the management of reserves to meet obligations.
CFM_{it} = Cashflow Management of bank i at time t, referring to the management of cash inflows and outflows.
β_0 = Intercept.
β_1, β_2, β_3, β_4 = Coefficients of the independent variables, indicating the impact of each on PAT.
ε_{it} = Error term.

5. Result, Conclusion and Recommendations

Descriptive Statistics Result

	PAT	MLR	REM	CFM
Mean	48299649	5367815.	763998.8	4.73E+08
Median	151640.5	37955.50	145962.5	1695687.
Maximum	2.64E+08	65788469	2532201.	3.71E+09
Minimum	26650.00	2036.000	3515.000	219253.0
Std. Dev.	78240648	15931062	909990.9	9.69E+08
Skewness	1.402530	3.142617	0.722071	2.180677
Kurtosis	3.872335	11.85764	1.939762	7.250855
Jarque-Bera	7.191109	98.30161	2.674710	30.90931
Probability	0.027445	0.000000	0.262539	0.000000
Sum	9.66E+08	1.07E+08	15279976	9.46E+09
Sum Sq. Dev.	1.16E+17	4.82E+15	1.57E+13	1.78E+19
Observations	**20**	**20**	**20**	**20**

Source: Researcher Computation, 2024

The descriptive statistics show the summary of key variables, including Profit After Tax (PAT), Market Liquidity Ratio (MLR), Reserve Management (REM), and Cashflow Management (CFM) for 20 observations. The mean values of the variables indicate their central tendency, with PAT averaging 48,299,649, MLR at 5,367,815, REM at 763,998.8, and CFM at 4.73E+08. This suggests that banks on average have high cashflow management figures relative to other liquidity measures. The median values are much lower than the means for all variables, particularly for PAT and CFM, indicating potential skewness in the data due to extreme values. The minimum and maximum values confirm this, as there are substantial differences between the lowest and highest values across all variables, particularly in PAT (min: 26,650, max: 2.64E+08), MLR, and CFM.

The skewness and kurtosis values provide insight into the distribution of the data. For example, PAT has a skewness of 1.402530, indicating a moderately positive skew, meaning that most banks have PAT values lower than the mean, with a few banks reporting much higher profits. The MLR and CFM are even more skewed, with skewness values of 3.142617 and 2.180677, respectively, suggesting that a few banks have very high liquidity ratios and cashflows compared to the majority. The Jarque-Bera test results for normality reveal that MLR and CFM significantly deviate from normal distribution (p-value = 0.000), while REM appears more normally distributed with a p-value of 0.262539, indicating no strong departure from normality.

Regression Analysis Result

The regression analysis result below examines liquidity management measures and performance of Banks (Profit After Tax (PAT)), with Market Liquidity Ratio (MLR), Reserve Management (REM), and Cashflow Management (CFM) as independent variables. The finding revealed that MLR has an unfavourable and significant association with PAT, with a coefficient of -1.692271 and a p-value of 0.0017. This recommends that as market liquidity increases, the profit after tax tends to decrease, potentially indicating inefficiencies in managing liquid assets or excessive liquidity not being optimally deployed for profit-generating activities. In contrast, both REM and CFM have positive and significant impacts on PAT. Specifically, the coefficient of REM is 52.68694 with a p-value of 0.0001, suggesting that an increase in reserve management liquidity significantly boosts profitability. Similarly, CFM has a coefficient of 0.041378 and a p-value of 0.0003, showing that effective cashflow management is positively correlated with higher bank profitability.

The overall model fit is strong, with an R-squared value of 0.888490, meaning that approximately 89% of the variation in PAT is explained by the independent variables. The Adj-R^2 is slightly lower at 0.867582, still indicating a robust model. The F-statistic of 42.49517, p-value = 0.0000 establish that the model as a whole is significant. The Durbin-Watson statistic of 1.332012 suggests some positive autocorrelation in the residuals, though not necessarily severe.

Regression result

Dependent Variable: PAT				
Method: Panel Least Squares				
Date: 08/24/24 Time: 12:45				
Sample: 2022 2023				
Periods included: 2				
Cross-sections included: 10				
Total panel (balanced) observations: 20				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
MLR	-1.692271	0.448118	-3.776396	0.0017
REM	52.68694	9.841314	5.353650	0.0001
CFM	0.041378	0.009006	4.594629	0.0003
C	-2446101.	8422161.	-0.290436	0.7752
R-squared	0.888490	Mean dependent var		48299649
Adjusted R-squared	0.867582	S.D. dependent var		78240648
S.E. of regression	28471163	Akaike info criterion		37.34354
Sum squared resid	1.30E+16	Schwarz criterion		37.54268
Log likelihood	-369.4354	Hannan-Quinn criter.		37.38241
F-statistic	42.49517	Durbin-Watson stat		1.332012
Prob(F-statistic)	0.000000			

Source: Researcher Computation, 2024

Correlation Analysis

The correlation analysis provides insights into the relationships between Profit after Tax (PAT) and the independent variables: Market Liquidity Ratio (MLR), Reserve Management (REM), and Cashflow Management (CFM). The correlation between PAT and MLR is 0.064985, which is very weak and positive, suggesting that there is almost no linear association between market liquidity and level of profit. This result is consistent with the negative coefficient found in the regression analysis, where MLR had a negative impact on PAT. The t-statistic of 0.276292 indicates that this correlation is not statistically significant.

PAT and REM have a strong affirmative correlation of 0.815306, with a highly significant t-statistic of 5.973873. This indicates that banks with higher reserve management liquidity tend to have higher profitability. This strong positive relationship aligns with the regression results, where REM had a substantial and affirmative implication on PAT. Similarly, PAT and CFM show a strong affirmative correlation of 0.802383, with a significant t-statistic of 5.704038. This suggests that better cashflow management is associated with higher profits. Again, this is in line with the regression results, where CFM was shown to significantly enhance bank profitability.

Correlation Analysis Result

Correlation Analysis:				
Date: 08/25/24 Time: 10:05				
Sample: 2022 2023				
Included observations: 20				
Correlation				
t-Statistic	**PAT**	**MLR**	**REM**	**CFM**
PAT	1.000000			

MLR	0.064985	1.000000		
	0.276292	-----		
REM	0.815306	0.392071	1.000000	
	5.973873	1.808187	-----	
CFM	0.802383	0.330306	0.658682	1.000000
	5.704038	1.484700	3.714078	-----

Source: Researcher Computation, 2024

The summary of findings for the study are thus:

1. There is no substantial correlation between market liquidity and profit after tax. Also the relationship is a negative one as shown in the inferential statistics (see regression table).

2. The study also discovered that there is an affirmative and significant correlation between performance measures

(PAT) and reserve management liquidity. This is shown in both inferential results (see regression and correlation table).

3. Finally, the result indicate that the interplay among cashflow and PAT is a positive and significant one as shown in both inferential results (see see regression and correlation table).

Conclusion

The research settled that liquidity management has an essential function in influencing the profitability of Nigerian commercial banks, though its effects vary across different liquidity measures. While market liquidity was found to have a negative and insignificant relationship with Profit After Tax (PAT), both reserve management liquidity and cashflow management demonstrated positive and significant relationships with PAT. These findings underscore the significance of effective reserve and cashflow management practices in improving bank performance, while also suggesting that an overemphasis on market liquidity may not directly contribute to profitability.

Recommendations

The subsequent suggestions were made for the study;

1. *Enhance Reserve Management Practices:* Banks should prioritize strengthening their reserve management liquidity as it has a significant positive impact on profitability. Ensuring adequate reserves can provide stability and improve the financial performance of banks.

2. *Optimize Cashflow Management:* Banks should invest in robust cashflow management systems and strategies, as positive cashflow management significantly enhances Profit After Tax (PAT). This will help maintain liquidity while improving operational efficiency.

3. *Rethink Market Liquidity Strategies:* Given the negative and insignificant relationship between market liquidity and PAT, banks should carefully evaluate their market liquidity strategies to ensure they do not overly emphasize short-term market liquidity at the expense of long-term profitability.

References

[1] Abu-Rahma, T., & Al-Amarneh, A. (2022). Liquidity management and bank performance in Jordan. *Journal of Banking and Finance*, 114, 102378.

[2] Adebayo, M., Hassan, T., & Adeyemi, O. (2021). Impact of liquidity management on profitability of Nigerian banks. *Journal of Banking & Finance*, 45(1), 34-56.

[3] Adeusi, O., Kolapo, T., & Aluko, A. (2020). The relationship between liquidity and profitability in Nigerian banks. *African Journal of Economics*, 12(3), 98-110.

[4] Adewale, O., Ojo, A., &Olowookere, K. (2021). Cashflow management and bank performance in Nigeria. *International Journal of Finance*, 22(2), 23-39.

[5] Ahamed, M. M., & Mallick, S. K. (2020). Does liquidity creation matter for bank performance? Evidence from emerging economies. *Emerging Markets Review*, 44, 100703.

[6] Akinlo, A. (2021). Market liquidity and bank profitability in sub-Saharan Africa: Evidence from Nigerian banks. *Economic Review*, 59(4), 49-62.

[7] Alemu, T., & Getahun, M. (2021). Liquidity management and bank profitability: Evidence from Ethiopian commercial banks. *Ethiopian Journal of Economics*, 30(2), 89-110.

[8] Ali, S., & Mughal, A. (2021). Liquidity management and bank profitability: Empirical evidence from Pakistan. *Journal of Financial Regulation and Compliance*, 29(3), 432-451.

[9] Allen, F., & Gale, D. (2004). *Financial Intermediaries and Markets*. Oxford University Press.

[10] Alshatti, A. S. (2021). The impact of liquidity management on the financial performance of Jordanian banks. *International Journal of Economics and Finance*, 13(4), 89-101.

[11] Basel Committee on Banking Supervision. (2013). *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools*. Bank for International Settlements.

[12] Berger, A. N., & Bouwman, C. H. S. (2009). Bank liquidity creation. *Review of Financial Studies*, 22(9), 3779–3837.

[13] Brealey, R. A., Myers, S. C., & Allen, F. (2019). *Principles of Corporate Finance*. McGraw-Hill Education.

[14] Brunnermeier, M. K. (2009). Deciphering the liquidity and credit crunch 2007-2008. *Journal of Economic Perspectives*, 23(1), 77-100.

[15] Central Bank of Nigeria (CBN). (2022). Guidelines on liquidity and reserve management. *CBN Financial Reports*, 10-15.

[16] Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, 91(3), 401-419.

[17] Diamond, D. W., & Rajan, R. G. (2001). Liquidity risk, liquidity creation, and financial fragility: A theory of banking. *Journal of Political Economy*, 109(2), 287-327.

[18] Duarte, P., & Loureiro, R. (2021). The impact of liquidity risk on Portuguese bank performance during the COVID-19 pandemic. *Journal of Financial Risk Management*, 10(2), 156-173.

[19] Fadzli, M. N., Ismail, A. G., & Habibullah, M. S. (2021). Liquidity management and Islamic bank performance: Evidence from Malaysia. *Islamic Economic Studies*, 29(1), 35-52.

[20] Fatima, K., & Hussain, M. (2020). Liquidity management and bank performance: An empirical analysis of Pakistani commercial banks. *Pakistan Business Review*, 21(4), 457-469.

[21] Golin, J., &Delhaise, P. (2013). *The Bank Credit Analysis Handbook: A Guide for Analysts, Bankers, and Investors*. Wiley.

[22] Hassan, R., & Mahmood, I. (2022). Liquidity management and performance of Islamic banks in GCC countries. *Journal of Islamic Accounting and Business Research*, 13(4), 517-532.

[23] Ibrahim, K., & Musah, G. (2021). Liquidity management and bank performance in WAEMU countries. *Journal of Economics and Business*, 117, 105969.

[24] Kanga, A., & Adjei, S. (2020). The impact of liquidity management on the financial performance of commercial banks in Ghana. *African Journal of Business and Economic Research*, 16(2), 74-89.

[25] Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money*. Macmillan.

[26] Kim, J., & Kim, S. (2022). Liquidity management and bank performance in South Korea: Post-financial crisis evidence. *Asia-Pacific Journal of Financial Studies*, 51(1), 91-109.

[27] Modigliani, F., & Miller, M. (1958). The cost of capital, corporation finance, and the theory of investment. *American Economic Review*, 48(3), 261-297.

[28] Mohammed, F., & Zeng, L. (2020). Liquidity risk management and bank performance in Sub-Saharan Africa. *Journal of Financial Stability*, 49, 100744.

[29] Mukherjee, A., & Sen, R. (2022). Liquidity management and Indian bank performance in the post-demonetization period. *Indian Journal of Finance and Economics*, 8(1), 15-29.

[30] Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 575-592.

[31] Naceur, S. B., Roulet, C., & Omran, M. (2020). Liquidity management and bank performance in MENA countries. *Economic Modelling*, 91, 293-308.

[32] Oduro, P., & Agyapong, D. (2021). Liquidity management and profitability in Ghanaian banks: A case study of selected commercial banks. *Journal of Finance and Banking Management*, 9(1), 12-26.

[33] Ogunleye, A. (2020). Cashflow management and profitability of Nigerian banks. *Journal of Financial Intermediation*, 8(4), 89-104.

[34] Ojo, M. (2021). Reserve management and profitability in Nigerian banks. *Nigerian Journal of Finance*, 30(1), 12-29.

[35] Olagunju, A., Adeyanju, O., & Olabode, S. (2011). Liquidity management and commercial banks' profitability in Nigeria. *Research Journal of Finance and Accounting*, 2(7), 24-38.

[36] Olaoye, F. O., & Olarewaju, O. M. (2015). Determinants of liquidity in Nigerian commercial banks. *Journal of Economics and International Finance*, 7(5), 99-107.

[37] Olawale, T. (2020). Liquidity management in the Nigerian banking sector: A review of theories and evidence. *West African Finance Journal*, 24(2), 78-93.

[38] Olokoyo, F. O. (2020). Financial performance and liquidity risk management in Nigerian banks. *Journal of Finance & Economics*, 35(4), 189-200.

[39] Owolabi, A., & Obida, S. (2021). Liquidity and financial performance in the Nigerian banking industry. *Research Journal of Finance and Accounting*, 12(5), 33-44.

[40] Pham, L. D., & Nguyen, P. H. (2021). The impact of liquidity risk on bank profitability: Evidence from Vietnamese banks. *Journal of Asian Finance, Economics, and Business*, 8(6), 23-33.

[41] Rehman, M. U., & Baloch, Q. B. (2020). Comparative analysis of liquidity management in Islamic and conventional banks in Pakistan. *Journal of Islamic Banking and Finance*, 8(3), 17-29.

[42] Rochet, J. C., & Vives, X. (2004). Coordination failures and the lender of last resort: Was Bagehot right after all? *Journal of the European Economic Association*, 2(6), 1116-1147.

[43] Silva, J., Correia, P., & Sousa, M. (2022). Liquidity risk and bank performance: Evidence from Portuguese banks. *European Research Studies Journal*, 25(2), 112-130.

[44] Strahan, P. E. (2008). Liquidity production in 21st century banking. *NBER Working Paper Series*, No. 13798.

[45] Uwuigbe, U., Uwalomwa, U., & Aigbinode, O. (2020). The impact of reserve management on bank profitability: Evidence from Nigeria. *African Journal of Business Management*, 14(6), 181-192.

[46] Yusuf, M., & Bello, I. (2022). Cashflow management and its effect on Nigerian banks' profitability. *Journal of Banking and Business Studies*, 28(2), 55-70.

[47] Zikovic, S., & Lovric, M. (2020). Liquidity management and bank performance: Evidence from Europe. *Journal of Banking & Finance*, 113, 105729.