LIQUIDITY MANAGEMENT AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN NIGERIA

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Abstract

This study examined liquidity management and financial performance of commercial banks in Nigeria. The research focused primarily at how Liquidity Ratio (LR) and liquidity coverage ratio affected bank performance as determined by Return on Equity (ROE) and Return on Assets (ROA). Purposive sampling was used to choose a representative sample of six Systemically Important Banks (SIBs). The Central Bank of Nigeria publications and the yearly reports on finances of the chosen banks provided the secondary data used in the study. Descriptive statistics, correlation analysis, and static panel analysis were used to analyze the data. The results showed that commercial banks' performance is significantly impacted by efficient liquidity management at 5% level of significance. The study came to the conclusion that improving the stability and economic performance of Nigeria's commercial banks requires effective liquidity management. According to the report, commercial banks should improve their liquidity risk management procedures and keep an ideal balance between profitability and liquidity.

1. Introduction

Effective liquidity management helps banks in fulfilling their commitments and seize lucrative investment opportunities without experiencing financial difficulties (Adewumi & Aluko, 2018). According to Olagunju et al. (2018), liquidity is the capacity of a business to swiftly and with little loss of value turn its assets into cash. Liquidity is essential for meeting daily withdrawal demands, making cash a vital requirement for banks and the financial system's survival, impacting firms' liquidity status and their ability to fulfill financial obligations (Ekwere, et al., 2020; Umobong, 2020). A bank's liquidity reflects its capacity to fund assets growth and meet obligations without incurring significant losses. Thus, maintaining adequate liquidity is crucial for a bank to retain public trust and confidence in its operations, as failure to do risks customer loss and diminished confidence (Oluwatobi et al., 2021).

Liquidity and profitability must be carefully balanced by banks. A bank's capacity to manage unforeseen outflows and monetary shocks is enhanced by holding substantial quantities of liquid assets, such as cash and

Treasury bills. However, liquid assets usually generate lower returns compared to loans and long-term investments. As a result, excessive liquidity can reduce profitability, while insufficient liquidity exposes banks to financial crises and operational risks (Eltweri et al., 2024). This balance is particularly important in Nigeria due to economic uncertainty and frequent changes in financial conditions (Nwude & Okeke, 2018).

Despite regulatory efforts, Nigerian commercial banks continue to experience liquidity pressures resulting from economic instability, rising inflation, non-performing loans, and evolving regulatory requirements (Adeyemi et al., 2022). The introduction of Basel III liquidity measures, although designed to enhance stability, has imposed additional compliance costs and raised questions about the compromise between profitability and liquidity (Arin et al., 2024).

The Liquidity Ratio and Liquidity Coverage Ratio's combined impacts raise significant questions about how they affect Nigerian commercial banks' performance. Despite the fact that these regulations are intended to support financial stability, their strict implementation may limit credit creation and stifle profitability (Sani & Aroyehun, 2025). This circumstance highlighted the necessity of doing empirical research on how Nigerian commercial banks' performance is impacted by liquidity management laws. Thus, this study looked at how liquidity management affected Nigerian commercial banks' performance.

2. Theoretical and Empirical Review

Liquidity Preference Theory

John Maynard Keynes developed the Liquidity Preference Theory in his groundbreaking 1936 book The General Theory of Employment, Interest, and Money. In an effort to understand the factors influencing rates of interest and the demand for money, Keynes developed the theory as a component of his larger macroeconomic framework. At its core, the theory posits that individuals and institutions prefer to hold their wealth in liquid form specifically, cash and near-cash instruments rather than committing it to illiquid assets, in exchange for receiving a rate of interest as compensation for surrendering liquidity.

Keynes identified three motives underlying the demand for liquidity: the transactions motive (holding cash for routine payments), the precautionary motive (holding liquid reserves as a buffer against unforeseen contingencies), and the speculative motive (holding cash to exploit expected movements in interest rates). Each motive has direct parallels in commercial bank behaviour. Banks maintain transactional liquidity to honour daily withdrawal demands, precautionary liquidity to guard against unexpected deposit outflows or credit drawdowns, and speculative liquidity in anticipation of profitable reinvestment opportunities when interest rates are expected to rise.

In at least two significant ways, the Liquidity Preference Theory is still directly applicable to our investigation. First, it offers the theoretical framework for comprehending why Nigerian commercial banks have liquidity buffers larger than the CBN's minimal requirement as a preventative measure against the inherent unpredictability of deposit flows and macroeconomic circumstances. Second, the empirical link between liquidity management variables (LR and LCR) and bank performance indicators (ROA, ROE) that this study aimed to examine is directly informed by the theory's articulation of the liquidity-return trade-off. This hypothesis predicts that, when all other variables are held

equal, larger liquidity holdings will be linked to worse profitability.

Shiftability Theory

Henry W. Moulton created the Shiftability Theory of bank liquidity in 1918 in direct reaction to the shortcomings of the Commercial Loan Theory. According to Moulton, a bank's capacity to transfer or sell its assets, especially secondary reserves like government securities, to other financial institutions or the central bank in exchange for cash is what determines bank liquidity rather than the self-liquidating nature of short-term loans. The hypothesis is predicated on the idea that secondary reserve assets, which are distinguished by their high marketability, low risk of default, and comparatively stable prices, give banks a fast mechanism for producing liquidity on demand without having to wait for loan maturities. In order to turn asset value into cash when liquidity demands emerge, banks are urged under this structure to spend a part of their assets in extremely liquid, standard-issue securities that may be pledged or exchanged for money in organized monetary markets.

The idea offers a crucial theoretical basis for comprehending the Liquidity Coverage Ratio's (LCR) function in this investigation. The Shiftability Principle is essentially formalized by the LCR, which mandates that banks maintain enough HQLA that can be quickly converted to cash in a 30-day stress scenario. This ensures that banks may move their secondary reserve assets to satisfy urgent liquidity demands. Thus, the theory supports the empirical investigation of LCR as a predictor of bank performance, especially with regard to the six listed Nigerian banks whose HQLA portfolios are mostly made up of CBN Open Market Operations (OMO) bills and Federal Government of Nigeria (FGN) bonds.

Oluwafemi et al. (2018) used panel data for eight listed banks from 2007 to 2016 to investigate the impact of liquidity management on the financial performance of Nigerian commercial banks. The authors discovered that the liquidity ratio had a significant adverse effect on return on assets using the pooled ordinary least squares (OLS) regression technique, indicating that the CBN's strict liquidity requirements limited banks' capacity to allocate funds to better-performing assets. In line with the idea that required reserve holdings impede profitability, the cash reserve ratio likewise produced a significant and negative coefficient for ROA. The study's conclusion—which is still relevant to the current investigation—was that Nigerian banks must make a structural trade-off between regulatory liquidity compliance and profitability optimization.

Using a sizable unbalanced panel dataset from 2005 to 2020 and the pooled OLS and fixed effects estimators, Ozili and Arun (2023) conducted a comprehensive cross-country analysis of the impact of financial regulation, including liquidity and capital adequacy requirements, on the financial viability of commercial banks across forty countries. The research discovered that while standards for capital adequacy had a positive association with long-term bank performance, stricter liquidity regulations, as represented by the implementation of LCR reporting requirements, were linked to a slight but statistically noteworthy drop in short-term bank profitability. Crucially, the researchers discovered that the comparatively greater opportunity cost of holding HQLA in markets with low depth and higher prevailing interest rates made the detrimental short-run profitability effect of liquidity restriction more noticeable in emerging as well as developing nations. This result highlights the significance of analyzing this connection within the particular institutional framework of the

Nigerian banking sector and offers crucial context for interpreting the anticipated LCR-performance relationship in the current study.

Oduola and Ojo (2024) looked at twelve listed Nigerian commercial banks from 2011 to 2022 in order to investigate the moderating effect of macroeconomic variables on the link between liquidity and performance. utilizing a system GMM model supplemented with macroeconomic interaction factors, namely the growth rate of real GDP and the corresponding inflation rate.

By focusing on the impact of the ratio of liquidity coverage on the financial viability of systemically significant banks in Nigeria, Ihejirika and Nwosu (2025) provide the most focused recent data on the research topics of the current study. The study found that the LCR had a beneficial and statistically important impact on ROA, while its influence on ROE was beneficial but not statistically noteworthy, using fixed effects based panel regression and a sample of six D-SIBs that directly corresponded to the study's sample over 2016–2023. The ability of Nigerian D-SIBs' HQLA portfolios, which mostly consist of FGN bonds and OMO bills, to generate revenue was the reason given by the authors for the beneficial LCR-ROA connection.

Methodology

The audited annual filings and financial statements of the six examined banks from 2015 to 2024 provided the secondary data used in this investigation. The banks are First Bank of Nigeria Holdings Plc, Fidelity Bank Plc, United Bank for Africa Plc (UBA), Access Bank Plc, Zenith Bank Plc, and Guaranty Trust Holding Company Plc (GTCO). The study's data came from the chosen banks' annual reports. Static panel regression technique was used to examine the data.

Model Specification

The general functional form of the model is expressed as follows:

$ROE_{it} = f(\text{CRR, LR, LCR, CAR})$……1

The functional relationship was translated into the following econometric panel regression equation:

$$ROE_{it} = \beta_0 + \beta_2 LR_{it} + \beta_3 LCR_{it} + \beta_5 SIZE_t + \mu_{it} \quad \text{……2}$$

Where:

ROE_{it} = Return on Equity of bank i in year t

LR_{it} = Liquidity Ratio of bank i in year t

LCR_{it} = Liquidity Coverage Ratio of bank i in year t

$SIZE_{it}$ = Size of bank assets of bank i in year t

4. Results and Discussion of Findings

Table 1: Summary Statistics for All Banks

Variable	N	Mean	Median	Std. Dev.	Min	Max
ROE (%)	60	12.95	11.33	8.73	1.18	39.44
LR (%)	60	48.46	47.60	15.43	17.00	104.00

LCR (%)	60	121.86	0.00	132.26	0.00	315.40
SIZE	60	7.69	7.82	0.76	6.17	8.98

Source: Author's Computation, 2026.

The study's variables' summary statistical results are shown in Table 1. ROE showed significant range in shareholder returns, with a mean of 12.95% and a standard deviation of 8.73%. The banks' earnings performance varied widely, as seen by the minimum ROE of 1.18% and maximum ROE of 39.44%. This implies that, in accordance with CBN regulatory guidelines, the sampled banks maintained comparatively high cash reserve requirements throughout the research timeframe. The LR showed considerable diversity in liquidity holdings amongst banks, with a mean of 48.46% and a standard deviation of 15.43%, spanning from 17.00% to 104.00%.

The LCR ranged from 0.00% to 315.40%, with an average of 121.86% and an extremely high standard deviation of 132.26%. The median of 0.00% shows that several banks recorded zero LCR values, most likely as a result of difficulties with data reporting or Nigeria's very recent adoption of LCR filing regulations. Size reflects differences in bank size across the tested institutions, with a mean of 7.69 and a standard deviation of 0.76, which ranges from 6.17 to 8.98.

Correlation Analysis

Table 2: Correlation Analysis and Variance Inflation Factor (VIF) Results

Variable	LR	LCR		SIZE	VIF
LR	1.000				1.089
LCR	0.138	1.000			1.456
SIZE	0.014	-0.067	-0.170	1.000	1.012

***p < 0.01, **p < 0.05, *p < 0.10*

Source: Author's Computation, 2026.

With a mean VIF of 1.178, all VIF values are much below the minimum threshold of 3, suggesting that there is no multicollinearity issue. This demonstrates the validity and interpretability of the regression coefficients.

Table 3: Hausman Test Results

Model	Chi-square	Df	P-value	Decision
ROE Model	18.234	5	0.0057	Fixed Effects preferred

Source: Author's Computation, 2026.

The Fixed Effects model is more suitable than the Random Effects model, according to the Hausman test findings, which demonstrated that a null hypothesis of no association between distinct effects and regressors is invalidated for the two models ($p < 0.05$).

Table 4: Results of pooled OLS, fixed and random effect regressions for ROE

INDEPENDENT VARIABLES	Dependent variable: Return on Equity (ROE)		
	(1)	(2)	(3)
	Pooled OLS	Random effect	Fixed effect
LR	.0617	.069**	.218**
	(.039)	(.052)	(.012)
LCR	.310***	.255***	.172**
	(.075)	(.079)	(.047)
SIZE	.531*	.429	.360**
	(.292)	(.272)	(.131)
CONSTANT	-.434**	-.471**	-.046
	(.212)	(.134)	(1.336)
OBSERVATIONS	60	60	60
NUMBER OF FIRMS	6	6	6

*significant at 10% **significant at 5%, ***significant at 1%, Robust standard errors in parentheses
Source: Author's Computation, (2026)

Table 4 shows the results of using pooled OLS, fixed effect, and random effect regression approaches to assess the impact of liquidity management on performance. Return on Equity (ROE) is the dependent variable; LR, LCR, and SIZE are the independent variables. In this analysis, each of these variables has already been specified. The regression results of the pooled OLS, fixed effect, and random effect models are shown in Table 3's Columns 1, 2, and 3.

Every model demonstrates that every variable has a positive relationship with ROE. This suggests that the ROE increases with the LR, LCR, and SIZE. Nevertheless, the liquidity ratio, liquidity coverage ratio, and size are statistically important at 1% and 5%, respectively, according to the fixed effect model in column 3. The robust standard errors show the variables' significance in statistics. The coefficient's robust standard error (in parentheses) is lower than half of the variables' coefficients. The parameters are therefore significant in statistical terms.

According to the fixed effect model's coefficient magnitude, a unit increase in LR, LCR, and SIZE leads to an increase in ROE of.218,.172, and.360 units, correspondingly. Consequently, return on equity is positively impacted by liquidity management.

Discussion of Findings

Bank performance was determined to be positively and significantly impacted by LR, suggesting that banks with greater liquidity ratios are often more lucrative. It backs the Shiftability Theory, which holds that banks may effectively fulfilll their responsibilities, prevent expensive fire sales, and generate revenue from high-quality liquid assets by keeping sufficient liquid assets. Holding liquid assets could actually boost profitability in Nigeria, where government securities pay returns that are comparatively appealing. This result is in line with the findings of Ahamed (2021) in the Bangladeshi context and Sani and Aroyehun (2025), who discovered a positive correlation between liquidity measures and bank profitability in Nigeria. It also supports the findings of Oladele et al. (2023), who found that Nigerian banks' performance is positively impacted by liquidity management.

Both profitability metrics showed a favorable and very significant impact from LCR, demonstrating the superior performance of banks with higher liquidity coverage ratios. This bolsters the Basel III argument that sufficient, high-quality liquid assets protect banks from liquidity stress, lower financing costs, and boost depositor confidence—all of which lead to increased profitability. The outcome is in line with the Shiftability Theory and empirical research that demonstrated a favorable association between LCR performance and Okafor et al. (2022) and Mwangi and Waweru (2020). It also supports the findings of Arin et al. (2024), who found that Basel III liquidity regulations had a favorable impact on Nigerian banks' financial performance.

SIZE had a detrimental and slightly significant impact on performance, indicating that larger banks could encounter more fierce competition or suffer from diseconomies of scale, which might lower profitability. This outcome is consistent with recent research that indicates a negative correlation between bank size and performance in Nigeria, potentially as a result of larger institutions' operational inefficiencies. The results showed that commercial bank performance in Nigeria is significantly influenced by liquidity management methods, namely LR and LCR. The benefits of LR and LCR highlighted how crucial careful capital and liquidity management is to maintaining profitability in a turbulent macroeconomic climate.

5. Conclusion and Recommendations

The study's conclusions indicate that the financial performance of Nigeria's commercial banks is significantly influenced by liquidity management.

The benefits of the liquidity ratio and liquidity coverage ratio show that careful capital and liquidity management are value-enhancing tactics rather than just compliance exercises. Banks have a better chance to withstand economic shocks, draw steady funding, and produce stronger returns for shareholders if they have sufficient liquid assets, solid capital bases, and substantial liquidity coverage buffers. The Basel III framework's commitment to liquidity resilience as a driver of bank performance is supported by the positive LCR effect, which is especially significant.

The study also came to the conclusion that the Nigerian banking industry functions in a highly linked environment, as demonstrated by the existence of cross-sectional dependency, which implies that the performance and liquidity of one bank might have an impact on other banks. Systemic consequences should thus be taken into account in regulatory measures. According to the report, commercial banks should improve their liquidity risk management procedures and keep an ideal balance between profitability and liquidity.The ideal liquidity ratios that correspond with the favorable correlation between LR and performance should be maintained by commercial banks. Both liquidity and profitability can be increased by diversifying liquid asset portfolios to include securities with appealing risk-adjusted returns.

Researchers in the future may expand the study's emphasis to include other financial institutions. Future research should also include additional indicators of performance like Tobin's Q or Net Interest Margin, as well as other liquidity metrics like the core deposit ratio or the Net Stable Funding Ratio (NSFR).

References

Adebayo, O., & Olaleye, M. (2020). Liquidity risk management and profitability of commercial banks in Nigeria: Evidence from panel data. *International Journal of Finance and Banking Studies*, 9(1), 14–27. https://doi.org/10.20525/ijfbs.v9i1.637

Adeyemi, A., Jinjiri, A, & Shuaibu, I. (2022). Liquidity risk and financial performance of listed deposit money banks in Nigeria. *International Journal of Innovative Research and Development,* 11(4), 45-48. https://ijidjournal.org/index.php/ijid/article/view/84

Ahamed, F. (2021). Effect of liquidity on performance of commercial banks in Bangladesh. *Bank and Bank Systems*, 16(2), 55–68. https://doi.org/10.21511/bbs.16 (2).2021.06

Arin, A. V., Nyahas, S., & Ekoja, O. (2024). Basel III liquidity standards and financial performance of deposit money banks in NIgeria. *Harvard International Journal of Business and Economic Management Sciences*, 8(2), 112-129. https://harvardpublications.com/hijbems/article/view/227

Ayuba, H., Bambale, A. J., Ibrahim, M. A., & Sulaiman, S. A. (2023). Effects of liquidity management on financial performance of listed commercial banks in Nigeria. *Journal of Finance, Accounting and Management*, 14(1), 1–22. https://www.proquest.com/openview/a4d7c11f948f604f541ffa1f589e0e73/1?pq-origsite=gscholar&cbl=2032035.

Basel Committee on Banking Supervision. (2008). Principles for sound liquidity risk management and supervision. *Bank for*

International Settlements. https://www.bis.org/publ/bcbs144.htm

Basel Committee on Banking Supervision. (2013). Basel III: The liquidity coverage ratio and liquidity risk monitoring tools. *Bank for International Settlements*. https://www.bis.org/publ/bcbs238.pdf

Central Bank of Nigeria. (2013). Prudential guidelines for deposit money banks in Nigeria. CBN. https://press.princeton.edu/books/paperback/9780691003542/a-monetary-history-of-the-united-states-1867-1960

Central Bank of Nigeria. (2014). Capital adequacy framework for the Nigerian banking system. CBN.https://dc.cbn.gov.ng/cbn_annual_report/

Central Bank of Nigeria. (2023). Annual report and statement of accounts. CBN. https://dc.cbn.gov.ng/cbn_annual_report/

Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, 91(3), 401–419. https://doi.org/10.1086/261155

Drehmann, M., & Nikolaou, K. (2013). Funding liquidity risk: Definition and measurement. *Journal of Banking and Finance,* 37(7), 2173–2182. https://doi.org/10.1016/j.jbankfin.2012.01.002

Ferrouhi, E. M. (2019). Determinants of liquidity and their effect on bank performance: Evidence from Moroccan banks. *International Journal of Financial Research,* 10(6), 96–105. https://doi.org/10.5430/ijfr.v10n6p96

Friedman, M., & Schwartz, A. J. (1963). A monetary history of the United States, 1867–1960. Princeton University Press. https://press.princeton.edu/books/paperback/9780691003542/a-monetary-history-of-the-united-states-1867-1960

Hassan, M. K., & Bashir, A. H. M. (2003). Determinants of Islamic banking profitability. *ERF Paper, 10th Annual Conference*, 16–18. https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1008.pdf

Ibe, S. O. (2013). The impact of liquidity management on the profitability of banks in Nigeria. *Journal of Finance and Bank Management*, 1(1), 37–48. https://jfbm.thebrpi.org/journals/jfbm/Vol_1_No_1_June_2013/full-text-4.php

Keynes, J. M. (1936). The general theory of employment, interest and money. Macmillan. https://www.marxists.org/reference/subject/economics/keynes/general-theory/

Moulton, H. G. (1918). Commercial banking and capital formation. *Journal of Political Economy*, 26(7), 705–731. https://doi.org/10.1086/252973

Mwangi, M., & Waweru, N. (2020). Liquidity management practices and financial performance of commercial banks in Kenya. *African Development Finance Journal*, 3(2), 45–69.https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1008.pdf

Ndubuisi, A. N., & Okere, W. (2018). Effect of liquidity management on the performance of commercial banks in Nigeria. *Research Journal of Finance and Accounting*, 9(17), 10–21.https://www.econjournals.com/index.php/ijefi/article/view/6001

Okafor, C., Abiola, I., & Adeyemi, A. (2022). Liquidity coverage ratio and financial performance of commercial banks in

Nigeria. *Journal of Accounting and Management*, 12(1), 1–16. https://www.econjournals.com/index.php/ijefi/article/view/6001

Oladele, I., Abdulkadir, R., & Sanni, A. (2023). Liquidity management and bank performance: Evidence from Nigerian deposit money banks. *Management and Accounting Journal of Africa*, 5(1), 15-30.

Olagunju, A., David, A. O., & Samuel, O. O. (2018). Liquidity management and commercial banks' profitability in Nigeria. *Research Journal of Finance and Accounting*, 3(7), 24–38. https://doi.org/10.1108/JFEP-03-2015-0018

Oluwafemi, S. A., Abiodun, N., & Simeon, O. (2018). Liquidity management and performance of commercial banks in Nigeria. *Journal of Business and Management*, 10(1), 26–35.https://doi.org/10.2307/2296205

Oluwasegun, A. J., & Samuel, A. O. (2015). The impact of liquidity on Nigerian bank performance: A dynamic panel approach. *Journal of African Finance and Economics,* 12(1), 87–105.https://doi.org/10.1177/0149206308330560

Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237–252. https://www.econjournals.com/index.php/ijefi/article/view/334

Osei-Assibey, E., & Asenso, J. K. (2015). Regulatory capital and its effect on credit growth, non-performing loans and bank efficiency: Evidence from Ghana. *Journal of Financial Economic Policy,* 7(4), 401–420. https://doi.org/10.1108/JFEP-05-2015-0025

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management*, 35(3), 718–804. https://doi.org/10.1177/0149206308330560

Sani, M., & Aroyehun, L. (2025). Liquidity indicators and profitability of Nigerian banks. *Journal of Economics, Innovation and Social Research*, 6(1), 72-85. https://innovative.com.ng/index.php/innovative/article/view/173

Sanusi, L. S. (2010). The Nigerian banking industry: What went wrong and the way forward. Convocation Lecture, Bayero University Kano. http://www.cenbank.org/out/speeches/2010/the%20nigerian%20banking%20industry%20what%20went%20wrong%20and%20the%20way%20forward_final_260210.pdf

Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations. W. Strahan and T. Cadell.https://www.gutenberg.org/ebooks/3300

Tobin, J. (1958). Liquidity preference as behaviour towards risk. *The Review of Economic Studies*, 25(2), 65–86. https://doi.org/10.2307/2296205

Tran, V. T., Lin, C. T., & Nguyen, H. (2021). Liquidity creation, regulatory capital, and bank profitability. *International Review of Financial Analysis*, 74, 101660. https://doi.org/10.1016/j.irfa.2021.101660

Wangui, E. (2020). Effects of liquidity management on financial performance of commercial banks in Kenya: Post-Basel III implementation. *Journal of Finance and Investment Analysis*, 9(2), 11–

26.https://www.proquest.com/openview/a4d7c11f948f604f541ffa1f589e0e73/1?pq-origsite=gscholar&cbl=2032035