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## An Evidence-Based Analysis of Liquidity Management on Financial Performance of Listed Financial Institutions in Nigeria

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**ABSTRACT:** This study explores the impact of liquidity management on the financial performance of listed financial institutions in Nigeria. Data were collected and analysed from the Nigerian Exchange Group covering the 2015 to 2024 financial periods. Using the liquidity ratio, the current ratio, and the cash ratio as liquidity indicators, while return on investment serves as the performance measure, the study assessed 45 financial institutions. The study employed the ex-post facto research design and assessed how liquidity management practices impact profitability. Results showed that of the liquidity management practices, the liquidity ratio and the current ratio have a significant positive impact on performance, while the cash ratio had positive but insignificant impact. The study's conclusion is that managed liquidity of institutions leads to profitability, though some measures of liquidity showed no performance impact. It is recommended that financial institutions manage their liquidity in a way that liquid assets and their short-term net solvency are optimized while avoiding cash that is idle and not productive. The study's outcome benefits bank managers, investors, and regulatory bodies in financial institutions to achieve improved performance through managed liquidity.

**KEYWORDS:** Liquidity Management, Financial Performance, Liquidity Ratio, Current Ratio, Cash Ratio

### INTRODUCTION

One of the most important indicators of the health, efficiency, and sustainability of financial institutions is financial performance. It shows how well a company manages its assets to earn and remain solvent, provide value to its shareholders, and survive economic or financial shocks. Consequently, the financial performance of a firm influences its stability and the ability of other economic agents to channel their funds into the economy. Thus, the determinants of financial performance have become a central theme in financial performance research, especially in Nigeria where financial institutions dominate in resource utilization and economic intermediation (Akpan et al., 2024; Haliru et al., 2024).

The management of liquidity is one of the most important factors which affect financial performance. The term "liquidity" refers to the capacity of a financial institution to satisfy its short-term liabilities as they come due, without any losses or operational interruptions. The proper management of liquidity allows institutions to hold the appropriate level of liquid assets, meet withdrawal requests, pay off maturing liabilities, and obtain profitable investment opportunities (Wuave et al., 2020; Wisdom et al., 2021).

In the Nigerian financial system, structural problems like inflation, exchange rate volatility, fluctuating monetary policy rates, and tightening regulatory frameworks have made the issue of managing liquidity even more critical. The Central Bank of Nigeria (CBN) continues to mitigate the monetary stability risk to the financial system through the strengthening of liquidity regulations via cash reserve requirements, liquidity ratios, and prudential control frameworks. However, the episodes of liquidity crises in commercial banks and insurance companies suggest that many of the institutions have not been able to achieve and sustain optimal liquidity levels (Akpan et al., 2024; Alhassan & Islam, 2021). These deficiencies stimulate the implementation of appropriate liquidity management to achieve financial results in more dynamically structured and regulated settings.

The financial performance of listed financial institutions in Nigeria is influenced by some liquidity indicators. The liquidity ratio (LR) determines the extent of highly liquid assets available in relation to short-term liabilities which affects the degree of the institution's resilience and financial stability (CBN, 2021). The current ratio and cash ratio also evaluate the liquidity position of the bank in the short-term. The higher the ratios, the stronger the capacity of the institution to meet immediate cash obligations (Ibe, 2013). Furthermore, the deposit-to-asset ratio (DAR) indicates how much a bank is funded by customer deposits, the higher the ratio, the less it cost to fund the bank, and the better the financial performance

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(Ogunleye, 2022). These liquidity metrics are important; thus, it becomes paramount for bank regulators, investors, and managers to determine the potential impact. The relationship between liquidity indicators and financial performance, in the case of Nigeria, is quite extensive, yet the empirical findings remain scattered. There indeed are some scholars who have documented a positive relationship between liquidity measures and performance, while others have documented negative or insignificant relationships (Umar & Sunusi, 2021). Furthermore, no more than a handful of recent studies incorporate more than one liquidity variable into a single model using recent data from the post-gradational reform period (post-2016 CBN policies). The lack of recent literature of a more extensive empirical nature presents the gap that this study intends to address.

Many previous studies in Nigeria on liquidity management concentrated on commercial banks, microfinance banks, or a general mix of financial institutions, without focusing on listed financial institutions. Unlike their unlisted counterparts, listed financial institutions are subjected to more comprehensive disclosure requirements, greater regulatory oversight, and tougher market discipline. Yet, this peculiar sub-population has suffered from lack of focused studies, resulting in a sub-population void that hampers the ability to generalize to other institutions with like patterns of corporate governance and reporting. This gap highlights the need for evidence-based insights that can inform managerial strategies and regulatory interventions. It is against this backdrop that this study examined the impact of liquidity management on financial performance of listed financial institutions in Nigeria.

## LITERATURE REVIEW

### Liquidity Ratio

The liquidity ratio (LR) measures balance between stability and profitability. Liquidity refers to the cash and cash equivalents that a bank or a financial institution can liquidate. Profitability refers to the return on assets (ROA) or return on equity (ROE) that the institution takes on. Up to certain limits, a higher LR indicates that the institution can ease and settle its immediate liabilities, thereby enhancing stability and depositor confidence. Given the above, the liquidity ratio for banks or financial institutions can be regarded as the bank's stability retention and profitability measures (Ibe, 2013). Conversely, if most banks hold higher liquidity ratios; referred to as a liquidity ratio puzzle, this might lead to a higher degree of illiquidity in the market. In this sense, it can be damaging for the whole economy for a given sector to hold too much liquidity (Ozili, 2020). Hence, to balance between stability and profitability this can be seen as liquidity profit puzzle (Berger and Bouwman, 2009).

The Pecking Order Theory attests the significance of LR, since firms hold liquid assets to satisfy short-term obligations before obtaining financings. This alleviates liquidity constraints, provides more room for financial manoeuvring, and improves operational performance (Myers & Majluf, 1984).

Several studies showed that the liquidity ratio affects financial performance, but that impact varies by institution and by country. Akpan et al. (2024) pointed out that while improving financial performance liquidity is beneficial, liquidity ratios that are too high are detrimental, especially if the firm is not putting those funds to use and is thus losing net interest margin. In the African context more broadly, Sathyamoorthi et al. (2020) noted that in Botswana, commercial banks with high liquidity ratios performed better, a result of the decreased liquidity risk and enhanced confidence of depositors. In contrast, Umar and Sunusi (2021) observed that the high liquidity ratio does result in low profitability, thus confirming the liquidity earnings trade-off.

### Current ratio

The current ratio (CR) is one of the most common measures of company liquidity and the extent of a firm's current assets against its current liabilities. It illustrates the capacity of an institution to fulfill its short-term commitments with short-term assets and serves as a significant measure of short-term financial viability and operational robustness (Ibe, 2013). The relationship between current ratio and financial performance is explained by the Liquidity-Profitability Trade-Off Theory. A firm with a larger current ratio is assumed to possess more short-term liquidity, thereby, able to fully cover its current liabilities which is indicative of lower liquidity risk and greater solvency (Berger & Bouwman, 2009). For a current ratio to be very high, however, is a sign of unproductive resources which is detrimental to the firm's ability to make profits because of opportunity costs. On the other hand, a current ratio below the normal threshold suggests the firm is exposed to high liquidity risk and vulnerability but it can lead to greater profitability if the short-term assets are invested in a productive and successful opportunity.

The agency theory also sheds light on the dynamics of the current ratio (CR). Managers may try to alter the levels of current assets to project an image of financial strength or to mitigate their own personal risk as it may positively or negatively influence the profitability of the firm (Jensen & Meckling, 1976). Therefore, the current ratio also attempts to measure the equilibrium within an organization between keeping enough assets as cash to ensure smooth running of operations and keeping enough cash to ensure that the assets are used profitably.

Previous research has shown that the current ratio is an important determinant of financial performance, although context is important. In Nigeria, Imeokparia & Oyetunji (2021) showed that firms with moderate current ratios had higher returns on assets (ROA) and return on equity (ROE) because having enough liquidity allows firms to efficiently manage their operations without having too much idle cash. Akpan et al. (2024) pointed out that both extremely low and extremely high current ratios negatively affect profitability in deposit money banks, thereby reinforcing the theoretical liquidity earnings trade-off. In economically uncertain times, the current ratio was positively related to financial performance in Nigerian banks (Wisdom et al., 2021). In these times, the current ratio is particularly important as it acts as a hedge against short-term disturbances. On the other hand, Umar & Sunusi (2021) showed that extremely high current ratios could limit profitability. They argued that the reason for this is that high amounts of cash are locked in short-term assets, which are low yielding. This finding supports the idea that there is an optimal range when it comes to liquidity.

### Cash Ratio

It signifies the extent to which a financial institution is liquid, as it shows the potential of that institution to pay its current liabilities right away, without the need of liquidating other current assets (Ibe, 2013). Thus, it is the most conservative liquidity measure. At a theory level, the liquidity-profitability trade-off theory explains the relationship between cash ratio and financial performance. Because of the huge liquidity risk that firms can fail to meet their immediate liabilities, having a cash ratio that is relatively high means that the firm is safe from that risk and hence

stakeholder's confidence in that firm can be improved (Berger & Bouwman, 2009). Maintaining such a cash ratio may, however, mean that the firm is less profitable, since there is a possibility that most of the firms' cash balances maybe lying idle, whereas such cash can be profitably invested in earning assets, such as loans and other securities. In the event of a low cash ratio, it is possible that in the short-run such a measure can increase the firm's profitability, as the short-run liquidity level can be increased relatively. However, in the long-run there is a risk that the firm may be exposed to liquidity gaps, which in turn can affect the firm's financial performance.

The Precautionary Motive of Liquidity Theory appreciates the value of cash ratios, asserting that organizations retain cash in order to shield themselves from the uncertainties of withdrawal and fluctuations in the marketplace. This buffer affects the financial sustainability of the firm positively (Myers & Majluf, 1984). Empirical studies showed that there is a cash ratio that positively affects financial performance, but the impact is not the same for all institutions and for all situations. For instance, Wisdom et al. (2021) noted that deposit money banks with moderate cash ratios were more profitable than the rest because they were able to strike a good balance between liquidity and investing in income-earning assets. Similarly, in other African settings, Sathyamoorthi et al. (2020) reported stronger performance of commercial banks in Botswana with optimal cash ratios as they minimized operational disruptions associated with liquidity.

## METHODOLOGY

This is a research design based on ex post facto principles. The design is appropriate when the researcher is trying to establish cause and effect using either primary or secondary data without changing or manipulating the variables (Kerlinger & Lee, 2000). The sample of the study was drawn from a population of 52 financial institutions. The financial institutions were listed on the Nigerian Exchange Group (NGX) as of 31st December 2024. The researcher used a purposive sampling technique to select 45 financial institutions. The use of purposive sampling was appropriate as it enabled the researcher to concentrate on institutions that satisfied certain inclusion criteria that were pertinent to the goals of the study.

The study focused on secondary source materials and why they informed an understanding of the nature of the primary and specific objectives of the study. Given that the study subject concerns the historical financial performance and liquidity practices of the institutions within the years 2015-2024, the sources being secondary data and the annual financial statements of the selected financial institutions served this study well. In this study, the focus was on the use of panel data regression to answer the research questions on the relationship between liquidity management and financial performance of listed financial institutions in Nigeria.

Panel data models and multiple regression models differ in the incorporation of unobserved component of the regression model. This model is crucial in capturing performance on the Nigeria institutions that is within the data set. For all the data captured for the Nigeria institutions in the study, the Fixed Effects (FE) and Random Effects (RE) were both used, and the Hausman test was applied to come up with the best model.

The panel regression model is specified as follows:

$$FP_{it} = \beta_0 + \beta_1 LR_{it} + \beta_2 CR_{it} + \beta_3 CaR_{it} + \epsilon_{it}$$

Where:

$FP_{it}$  = Financial performance of institution  $i$  at time  $t$

$LR_{it}$  = Liquidity ratio

$CR_{it}$  = Current ratio

$CaR_{it}$  = Cash ratio

$\epsilon_{it}$  = Error term

**Table 1: Variables, Measurement, and Sources**

| Variables                                               | Measurement                                                             | Source                                   |
|---------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------|
| Dependent Variable                                      |                                                                         |                                          |
| Financial Performance (FP)                              | Return on Investment (ROI) = Net Profit / Total Investment $\times$ 100 | Choiriyah et al. (2020); Alshatti (2015) |
| Independent Variables (Liquidity Management Indicators) |                                                                         |                                          |
| Liquidity Ratio (LR)                                    | Liquid Assets / Total Assets                                            | Hassan & Bashir (2021)                   |
| Current Ratio (CR)                                      | Current Assets / Current Liabilities                                    | Choiriyah et al. (2020)                  |
| Cash Ratio (CAR)                                        | Cash and Cash Equivalents / Current Liabilities                         | Nwidobie (2020)                          |

**Source:** Author's compilation (2025) from literature.

## RESULTS AND DISCUSSION

In this section, results are presented and discussed in the light of the research findings.

**Table 1: Descriptive Statistics**

| Variable | Obs | Mean    | Std. Dev. | Min     | Max    |
|----------|-----|---------|-----------|---------|--------|
| ROI      | 450 | 0.04256 | 0.03474   | -0.0547 | 0.1429 |
| LR       | 450 | 0.1198  | 0.0229    | 0.051   | 0.184  |
| CR       | 450 | 1.4809  | 0.2899    | 0.5725  | 2.4169 |
| CaR      | 450 | 0.0599  | 0.0142    | 0.0105  | 0.0986 |

Source: Author's Computation (2025) using Stata 17

Table 1 outlines the descriptive statistics related to the variables of interest to this analysis. Financially, the institutions in the sample had an average performance measured Return on Investment (ROI) of 4.26% (SD = 3.47%), indicating an average level of performance with moderate dispersion at the institution level. Some institutions were unprofitable (ROI = -5.47%), while the most profitable institution had a ROI of 14.29%. In terms of liquidity management, the average liquidity ratio (LR) of the institutions was 11.98%, indicating a large percentage of the total assets to be of liquid form, with low variability (SD = 2.29%). The average current ratio (CR) was 1.48, indicating that the institutions had enough short-term assets to meet current liabilities, although, at the institution level, the current ratio varied from 0.57 to 2.42, suggesting that some institutions were more short-term solvency risk. The cash ratio (CaR) with a mean of 5.99%, reflected limited liquidity coverage of current liability.

**Table 2: Correlation Matrix Table**

| Variable | ROI     | LR      | CR      | CaR |
|----------|---------|---------|---------|-----|
| ROI      | 1       |         |         |     |
| LR       | 0.312** | 1       |         |     |
| CR       | 0.284** | 0.421** | 1       |     |
| CAR      | 0.198*  | 0.305** | 0.287** | 1   |

Source: Author's Computation (2025) using Stata 17

Table 2 shows the correlation matrices and the various relationships between financial results (ROI), and specific indicators of liquidity management (LM). The liquidity ratio (LR) shows a positive, and significant correlation with ROI ( $r = 0.312$ ,  $p < 0.01$ ), meaning that the higher the positive liquidity, the more financial success. The current ratio (CR) is also positively correlated with ROI ( $r = 0.284$ ,  $p < 0.01$ ), meaning that the higher the ability to meet obligations with assets that are liquid, the more profit that can be made. The cash ratio (CaR) also shows some positive correlation with ROI, but it's weaker ( $r = 0.198$ ,  $p < 0.05$ ). This means that a higher liquidity level does affect financial performance. This correlation is less than that of the other two ratios of liquidity. This means that the cash availability does positively affect ROI, though to a weaker degree than the other ratios. Overall, the ratios do positively affect the ROI. In conclusion, immediate cash availability positively affects financial success, though to a lesser extent than with the other ratios.

**Table 3: Diagnostic Tests for Panel Regression Model**

| Test               | Method                                            | Result                              |
|--------------------|---------------------------------------------------|-------------------------------------|
| Heteroskedasticity | Breusch-Pagan / Cook-Weisberg test                | Chi <sup>2</sup> = 12.34, p = 0.067 |
| Autocorrelation    | Wooldridge test for autocorrelation in panel data | F(1,44) = 2.18, p = 0.147           |
| Multicollinearity  | Variance Inflation Factor (VIF)                   | LR = 2.15, CR = 2.48, CaR = 1.92    |
| Normality          | Shapiro-Wilk test                                 | W = 0.981, p = 0.253                |

Source: Author's Computation (2025) using Stata 17

The diagnostic tests in Table 3 indicate that the panel regression model meets the key statistical assumptions. Heteroskedasticity and autocorrelation are not present, ensuring reliable standard errors. Multicollinearity among liquidity variables is low (VIF < 10), and residuals are approximately normally distributed, supporting valid hypothesis testing. The stationarity tests confirm that all variables are stable over time, reducing the risk of spurious regression results. Overall, these diagnostics suggest that the data and model are suitable for examining the impact of liquidity management on financial performance.

**Table 4 Hausman Test Result:**

| Test Statistic | Chi <sup>2</sup> | Degrees of Freedom (df) | p-value |
|----------------|------------------|-------------------------|---------|
| Hausman Test   | 7.84             | 3                       | 0.049   |

Source: Author's Computation (2025) using Stata 17

The Hausman test resulted in a chi-square statistic equal to 7.84, with 3 degrees of freedom, and a p-value equal to 0.049. Given that the p-value is smaller than the threshold of 0.05, the null hypothesis of the test is rejected in favour of the alternative hypothesis. This means that, from the models being considered, the Fixed Effects modelling technique would suit the dataset and variables in question better than would the Random Effects modelling technique. This denotes that the institution-specific effects are, in fact, related to the independent variables, and the appropriate modelling technique to use is the Fixed Effects model, which would lead to more accurate and consistent coefficient estimations than would the Random Effects model.

**Table 5: Fixed Effects Regression Results**

| Variable                        | Coefficient ( $\beta$ ) | Std. Error | t-Statistic | p-value  |
|---------------------------------|-------------------------|------------|-------------|----------|
| LR                              | 0.215                   | 0.048      | 4.48        | 0.000*** |
| CR                              | 0.134                   | 0.052      | 2.58        | 0.012**  |
| CaR                             | 0.041                   | 0.041      | 1           | 0.318    |
| Constant                        | 0.021                   | 0.015      | 1.4         | 0.166    |
| Number of observations: 450     |                         |            |             |          |
| R <sup>2</sup> (within): 0.312  |                         |            |             |          |
| F-statistic: 16.48, $p < 0.001$ |                         |            |             |          |

Source: Author's Computation (2025) using Stata 17

The regression model accounts for 31.2% of the within group variations of ROI ( $R^2 = 0.312$ ), which suggests that there is some other degree of influence from other variables. However, this does imply that efficient liquidity management is an important element of the overall financial performance. The importance of maintaining the equilibrium of liquid assets with profitability is signified by the LR and CR, while the CaR shows the less important adherence of financial institutions with merely holding on to liquid assets. It would be more prudent for financial institutions to improve liquid asset management.

The results indicate that there is a strong positive correlation between LR and ROI ( $\beta = 0.215$ ,  $p < 0.001$ ). This means that while liquid assets are a smaller proportion of total assets, the institution can manage and satisfy their short-term obligations and able to absorb and manage any sudden requirement for cash. This also improves their profitability and stability. This is also consistent with past literature from Nigeria (Hassan & Bashir, 2021; Umar & Sunusi, 2021) that shows how having the right liquidity ratio improves the effectiveness and sustainability of the organization.

The current ratio also has a positive and significant effect on ROI ( $\beta = 0.134$ ,  $p < 0.01$ ). This means that the ability of an institution to fulfill its short-term liabilities with current assets helps in attaining better ROI. Institutions with better short-term solvency can take on short-term obligations and still be profitable. This agrees with the findings of Choiriyah et al. (2020), who showed that there is a positive correlation between current ratio and financial performance in the banking and finance industry.

In contrast to LR and CR, a positive sign attributed to the cash ratio is statistically insignificant ( $\beta = 0.041$ ,  $p = 0.318$ ). This means that while the presence of cash and near-cash assets is a positive concern, it is not a major determinant of profitability of listed financial institution in Nigeria. One reason for this might be that too much cash is often perceived to be having opportunity costs as it might be better to lend it to make more profitable interest. This is consistent with the finding of Nwidobie (2020) who pointed out that cash ratios alone are often not adequate to explain differences in financial performance.

## CONCLUSION AND RECOMMENDATIONS

This study analyses the influence of liquidity management on financial performance of listed financial institutions in Nigeria, focusing on the liquidity ratio (LR), current ratio (CR), and cash ratio (CaR). Empirical studies from the fixed effects panel regression showed that for the liquidity ratio (LR), a positive and significant influence shows that a higher proportion of liquid assets drives profit and assets and institutional stability; other positive and significant current ratios (CR) of liquid assets show the tactical role having significant positive efficiency in operational efficiency through the ability to meet adequate short-term obligations. Lastly, the cash ratio (CaR) was positive; however, it was statistically insignificant and therefore demonstrates underutilized cash that may hold profit potential. From the conclusion, the study recommends the following:

1. Financial institutions are encouraged to sustain an equilibrium of the liquidity ratio so that there are enough liquid resources to meet short-term obligations while avoiding the situation of having too many resources that are just sitting idle.
2. Financial institutions should work towards having an appropriate ratio of current assets to current liabilities so there is an improvement in the overall position of the firm and there is an increase in the confidence of the investors.
3. Financial institutions should minimize the excessive and idle balance of cash to reduce the opportunity cost that is to be lost. There should be an investment of the surplus cash in some productive area so that the returns are improved while at the same time there is enough liquidity to cater operational cash balance needs.

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