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LIQUIDITY RISK MANAGEMENT AND BANKS PROFITABILITY: AN ANALYSIS OF SELECTED LISTED NIGERIAN BANKS

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Abstract

The effect of liquidity risk management on the profitability of quoted Nigerian money banks was examined in this study covering the period from year 2011 to 2020. Ten banks among thirteen listed Nigerian deposit money banks were purposively selected for analysis. The research utilised regression, and descriptive statistics to estimate the data. Liquidity risk management was proxy using loan-to-total-deposit ratio and capital adequacy ratio (CAR), while bank profitability was proxy using Return on Assets (ROA). The discoveries revealed that both the loan-to-total-deposit ratio and CAR had favorable and notable effects on ROA, as indicated by t-statistics and p-values of (2.71, 7.86) and (0.003, 0.000) respectively. This study concludes that liquidity risk management notable impacts the profitability of Nigerian money deposit. It recommends that bank management should focus on maintaining an appropriate loan-to-total-deposit ratio to avoid liquidity deficit risks from over-lending. Additionally, bank management should put in place appropriate funding of strategy that make available for effective divergence in the source and mode of funding.

Keywords: Effect, Capital Adequacy Ratio, Liquidity Risk, Loan, Total Deposit, Profitability, Risk Management.

1. Introduction

Liquidity risk management (LRKM) entails implementing strategies and protocols to ensure that a company or financial institution possesses adequate cash or easily convertible assets to fulfill its financial commitments. The European Central Bank (2020) emphasizes that LRKM involves monitoring a bank's ability across sectors to swiftly translate assets into cash without

notable affecting their value. Simeyo, et al (2016) argued that liquidity plays a crucial part in the performance and growth of various sectors, particularly in banking. The International Monetary Fund (2019) suggested that effective liquidity management (LM) encompasses maintaining ample liquidity reserves, monitoring cash flows, evaluating possible liquidity needs and putting plans in place to reduce liquidity risk such as diversifying funding sources and establishing contingency plans. Giannotti et al. (2010) asserted that managing bank resources entails addressing two primary risks: liquidity risk (LRK) and interest rate risk.

However, according to Muriithi and Waweru (2017), LRK emerges during economic downturns, leading to decreased resource generation and heightened demand from depositors, thereby exacerbating LRK. Hacini, et al. (2021) argued that LRK represents a notable contemporary challenge for banking systems in regions like Arab nations, Africa, as well as developed countries such as the United Kingdom and US. Sviatiana and Lara (2017) emphasized that LM is not only crucial for banks but also for all sectors of the economy. Noraini (2012) supported this notion, affirming that managing liquidity risk ranks among the foremost priorities in a financial establishment's resources and liabilities management.

Furthermore, Hacini et al. (2021) suggested that effective liquidity management enhances banks' financial performance, which often dictates their efficiency and the degree to which they accomplish their goals. Chen (2019) explained that liquidity risk management enables firms to allocate assets efficiently, striking a balance between liquidity needs and the pursuit of higher returns. By maintaining an optimal blend of liquid and illiquid assets, companies can boost profitability while mitigating LRK. Given the close linking between LRK and bank solvency, prudent the management of liquidity decreases the likelihood of bank insolvency, thereby reducing the risk of bankruptcies (Noraini, 2012). Banking inherently carries risks, and liquidity risk is deemed crucial for safeguarding banks' stability amidst fierce industry competition (Simeyo, Nyagol, & Onditi, 2016). Basak (2017) argued that to achieve a profitable and liquid asset in a balanced manner, commercial fiscal institutions must strive to take full advantage of profits while ensuring ample reserves for liquidity.

Moreover, insufficient liquidity can lead to elevated borrowing expenses or challenges in securing funding, adversely impacting profitability. The European Central Bank noted in 2018 that proactive liquidity management has the potential to reduce dependence on expensive emergency funding sources and enhance overall financial performance. Companies with strong liquidity places are better situated to seize market prospects, such as strategic investments or expansion endeavors, which can contribute to enhanced profitability in the long run (Basel Committee on Banking Supervision, 2019). Thus, LRK is considered a primary determinant affecting bank performance and viability. The International Monetary Fund (2021) emphasized that effective liquidity risk management bolsters a company's reputation and creditworthiness in the eyes of investors, creditors, and counterparties. This can result in to reduction in borrowing costs, better access to capital, and enhanced profitability through favorable terms and conditions.

Also, numerous empirical studies have explored LRKM and financial performance in both advanced and emerging nations, including research showed by Alim et al (2021), Adegoke

and Oyedeko (2018), Hakimi and Zaghdoudi (2017), Hacini et al. (2021), Ikram (2021), Mwangi (2014), Moslemany et al (2021) and Olagunju et al (2011). Notwithstanding the abundance of empirical studies, there remains no agreement regarding the consequence of LRKM on bank profitability. Consequently, this study took a different approach to reviewed the effect of LRKM on the profitability of Nigerian banks. Addressing this gap, the study extensively researched the effect of LRKM on the Nigerian banking sector's profitability using capital adequacy ratio and liquidity ratio as measures of LRKM. While previous research in Nigeria and elsewhere, such as studies by Adegoke and Oyedeko (2018), Hacini et a*l* (2021), Moslemany et a*l* (2021), Olagunju et *al* (2011), and Mwangi (2014), primarily focused on utilizing long-term debt (LTD), short-term debt (STD), and credit risk as proxies for LRKM, a few studies, such as those by Hakimi and Zaghdoudi (2017) and Ikram (2021), employed capital adequacy ratio as a indices for LRKM in their investigation conducted outside Nigeria. This study's contribution to knowledge lies in its potential to enrich existing theoretical literature and apply it to empirical investigations in this research domain. It is expected that the study's conclusions will offer insightful evidences to banks, investors, managers, scholars, and legislators. Given the importance of LRKM to the expansion and survival of the banking industry, this study aims to assess how liquidity risk management (LRKM) affects the performance of Nigerian listed deposit money institutions.

2. Literature Review

2.1 Conceptual Review - Liquidity Risk Management

Risk management within the banking sector is increasingly becoming a fundamental discipline that all participants and stakeholders need to adhere to. This process entails identifying, measuring, monitoring, and controlling risks (Soyemi et al., 2014). Bank liquidity, as defined by Mdreaz et al. (2016), indicates a bank's capacity to recompense its debts on time. In commercial banks, liquidity denotes the capability to finance all contractual obligations, including lending, investments, deposit withdrawals, and obligation maturity, under normal banking operations (Hacini et al., 2021). Xiaopeng (2012) suggested that common proxies for gauging liquidity include the CAP, loan-to-deposit ratio (LTD), current ratio, cash ratio, investment and quick ratios. This study utilized both CAP and LTD ratios as proxy for LRM. The CAP measures a bank's capital in relation to its risk-weighted assets, reflecting its financial strength and capability to withstand losses, as described by (Ayele, 2012 and Mwangi, 2014). Also, the LTD assesses a bank's lending undertakings absolute to its credit base, indicating its reliance on customer payments to fund loaning activities (Saunders & Cornett, 2014). Past researchers, such as Ademola et al. (2022), Hakimi and Zaghdoudi (2017) and Ikram (2021), have used the CAP as a proxy for liquidity, while others, like Berger and Bouwman (2009) and Jimenez et al. (2012), have utilized the LTD for the same purpose.

2.12 Profitability in Banking Sector

Profitability serves as the primary defense mechanism for a bank against unexpected losses, reinforcing its capital position and enhancing possible profitability via investments in retained earnings (Hacini, 2021). According to Alim et al. (2021), return on assets (ROA) and return on equity (ROE) are widely utilized proxy utilize to assess the performance of banks or any other industry. A higher ROA suggests greater profitability per unit of assets. Conversely, a lower ROA denotes less effective use of assets (Ross et al., 2016). Past research conducted by Alim

et al. (2021), Mustafa (2014), Hacini (2021) and Olagunju et al. (2021) has utilized ROA as a measured used to gauge bank profitability.

2.13 Liquidity risk management and profitability in the banking sector

The banking sector is undeniably subjected to regulation due to the inherent riskiness of its operations (Soyemi, Ogunleye, &Ashogbon, 2014). Dang (2011) opined that preserving a satisfactory level of liquidity (LIQ) is certainly correlated with the profitability of bank, indicating that banks with sufficient LIQ echelons have a tendency to be more cost-effective. A heightened LIQ position enables a bank to be better positioned to extend loans, whereas a low LIQ position exposes the bank to LRK, wherein it may lack sufficient liquid cash to meet depositor withdrawals (Alim et al., 2021). Mwangi (2014) suggested that the influence of LIQ on performance may also hinge on the bank's corporate model and the market challenges it faces. According to Olagunju et al. (2011), a commercial bank that has a sufficient LIQ is better equipped to handle customer withdrawals and loan requests, which lowers the possibility of offering financing with unfavourable loan terms and higher interest rates. Furthermore, by determining a bank's expansion into risky but profitable endeavours, the CAP has a direct effect on its profitability (PROF) (Ongore& Kusa, 2013). A larger percentage of deposit base is being lend out by the bank when the loan-to-deposit ratio is higher, which could increase PROF but also raise LRK. On the other hand, a subordinate ratio proposes that the bank may maintain a higher percentage of its deposits in liquid assets and take a more cautious approach to lending (Mishkin & Eakins, 2015).

2.2 Theoretical Framework

This study is founded on two theories: The Anticipated income theory and the Shift-ability model. The US commercial banks' practice of outspreading term loans served as the basis for Prochanow's 1944 development of the anticipated income hypothesis. According to this hypothesis, financial institutions improve their clients' LRK by planning and scheduling their client commitments (Ikriam, 2021; Kohler, 2013).It further suggests that banks can manage liquidity by carefully managing loan issuance and ensuring timely repayments, thereby minimizing repayment delays and maintaining high LRK levels (Hacini, 2021). According to Enekwe et al. (2017), this theory enables banks to issue intermediate and LTD in conjunction with STD, aligning loan repayment with borrowers' expected income. Additionally, H.G. Moulton introduced the shift-ability theory in 1918, emphasizing the value of owning assets that are easily transferable (Ibrahim, 2018). Based on this, banks are expected to preserve its liquidity, by holding onto assets that are easily transferred or turned into cash (Hacini, 2021). Mwangi (2014) highlighted the importance of asset shiftability, marketability, or transferability in guaranteeing liquidity by stressing that a bank keeps liquidity by preserving assets that can be transformed or traded to stockholders or financiers for cash.

2.3 Empirical Review

Hacini et al. (2021) investigated how LRKM impacts the financial performance (FP) of selected conservative Saudi Arabia banks during year 2002 to 2019. They employed panel data investigation to scrutinize the data. The outcomes discovered that both loan-to-deposit (LDR) and cash-to-deposit ratio (CDR) adversely influence FP.

Moslemany et al. (2021) explore a study on the connection between LRK and bank PROF in Egypt from 2013 to 2019. They utilized panel regression estimation tools was used to assess the gathered data. The outcomes indicated a notable association between bank LRK and PROF.

Alim et al. (2021) discovered how LRKM affects the FP of banks in Pakistan over the time frame of 2006 to 2019. They employed OLS to evaluate the proxy. The results disclosed that PROF favorably influences liquid-asset-to-total asset (LTA) and liquid asset-to-deposit ratio (LADR) suggesting that LRK has a favorable effect on profitability.

Takon and Mgbado (2020) examined the effect of LRKM on the PROF of quoted Nigerian banks. They utilized OLS analysis method to observe the collected data. The outcomes specified that bank deposits and treasury bills have a favorable and non-significant connection with PROF, whereas liquid assets have an adverse and insignificant effect. The study established that LRK does not expressively affect PROF.

Otekunrin, Fagboro, and Femi (2019) explored the impact of LRKM on the FP of 17 Nigerian quoted banks. They narrowed down their study to 15 banks using purposive sample methods. OLS examination was employed to analyze the collected data. LRKM indices such as CAP, current ratio, cash ratio, were utilized. The study revealed that bank LRKM favorably influences performance.

The influence of LRK and PROF of Nigeria banks was examined by Adegoke and Oyedeko (2018). Their study period ranged from 2007 to 2016, and panel data estimation was utilized for the estimation. The results exposed that short-term LIQ, long-term LIQ, and risk of LIQ exposure adversely affect the PROF of listed deposit money banks.

Laminfoday (2018) reported out a research work on the consequence of LRKM on the FP of Sierra Leone banks, focusing on 8 banks. The study timeframe covered year 2013 to 2017, and regression analysis was employed to estimate the collected data. The answers shown that LRKM has an adverse and notable effect on FP.

3.0 Methodology

This study utilized an ex-post facto research design and centered on thirteen deposit money banks (DMB) quoted on the Nigerian Exchange Group (NGX). The study population consisted of all 13 listed banks. However, 10 out of the 13 banks were selected for analysis with the aid of purposive sampling methods. Data were contracted from the annual reports of the 10 sampled DMB's, spanning the period from year 2011 to 2020. The collected data underwent descriptive, correlation and regression analysis.

Table 1: Measurement of Variables

VARIABLES	PROXY	COMPUTATION	Priori Expectation
Dependent	ROA	Profit After Tax/Total Assets	
Independent	CAR	Capital of Tier 1 plus Capital of Tier 2)/Risk-weighted asset	+
	LIQR	Total Loan / Total Deposits	
Control	Size	Total assets' natural log	+

Source: Researcher's Compilation (2025)

3.2 Model Specification

To empirically explore the influence of LRKM on the financial performance of quoted DMB's. The following econometric model is formulated, adapted from the research conducted by Hacini (2021).

$ROA = f(\ LIQR, CAR, FS)$ ..... (1)

$ROA_{it} = \delta_0 + \delta_1 CAR_{it} + \delta_2 LIQR_{it} + \delta_3 FS_{it} + \varepsilon$..... (2)

Where:

ROA = Return on Asset

LIQR = Liquidity Ratio

CAR = Capital Adequacy Ratio

BS = Bank size

δ_0- δ_3 = Parameters of thee regression Coefficient

ε = Error terms

4. Empirical Findings

Table 2. Descriptive Statistics Result

	ROA	LIQR	CAR	BSZ
Mean	0.4515	0.8241	0.4579	8.0209
Median	0.085	0.7868	0.3963	8.1736
Maximum	3.899	1.538	1.0066	10.532
Minimum	-0.0048	0.4034	0.0675	6.4567
Std. Dv.	0.705	0.22348	0.282	0.813
Skewne.	3.027	0.549	0.578	0.2721
Kurtos.	13.032	2.6961	2.0249	3.066
Observations	100	100	100	100

Source: Researcher's Computation (2025)

The outcomes in Table 2 indicate that return on assets (ROA) showed the following characteristics: a mean of 0.4515, a median of 0.085, with a max. val. of 3.899 and a mini. val. of -0.0048. Regarding the independent variables, LIQR and CAR demonstrated mean and median values of 0.8241 and 0.4579, and 0.7868 and 0.3963, respectively. The highest and

lowest values for LIQR and CAR were recorded as 1.538, 1.0066 and 0.4034, 0.0675, respectively. As for the control variable, bank size (BS), it displayed mean and median values of 8.0209 and 10.532, respectively, with a min. val. of 6.4567 and a maxi. val. of 10.532. All variables in thisresearch work exhibited favorable skewness. Furthermore, the kurtosis analysis revealed that LIQR and CAR had a platykurtic dissemination as their kurtosis values were less than 3, whereas ROA and BS did not exhibit a platykurtic dissemination as their kurtosis values exceeded 3.

Correlation and Multi-Collinearity Test

Table 3: Correlation and test of Multi-collinearity

	ROA	LIQR	CAR	BSZ	VIF	1/VIF
ROA	1.000					
LIQR	0.4270	1.000			1.73	0.5793
CAR	0.7822	0.4051	1.000		1.72	0.5828
BSZ	-0.4649	0.2997	-0.4169	1.000	1.36	0.7332

Source: Researcher's Computation (2025)

The correlation analysis table's findings reveal a modest favorable connection of LIQR with ROA (0.4270), CAR has a high correlation value of 0.7822 with ROA whereas BSZ has a modest adverse connection of -0.4649 with ROA. The Table 3 also show VIF values which ranges from 1.36 – 1.73. Which confirmed that there is absence of multi-collinearity among the variables.

Regression Results

Hypothesis

H_0: There is no notable connection between LRM and bank PROF of quoted Nigeria deposit money banks.

Table 4: Estimated Regression Analysis Results

Variables	Coeffi.	Std. Error	t-stat.	Prob.
C	-0.7934	0.5625	-1.41	0.162
LIQR	0.1956	0.0276	2.71	0.003
CAR	1.8673	0.2376	7.86	0.000
FS	0.6416	0.7334	2.05	0.020
R^2	0.497			
F-Stat.	31.64			
Prob > F	0.0000			

Source: Researcher's Computation (2024)

The outcomes of the study investigating the effect of liquidity risk management (LRKM) on the profitability (PROF) of Nigerian banks are displayed in the regression analysis table. A t-stat. of 2.71 and a p-val. of 0.003 specify statistical implication at the 5% level, demonstrating that LIQR have a favourable and noteworthy influence on PROF. According to the ratio of

total loans to total deposits, this implies that increased liquidity typically translates into higher profitability.

These results align with previous research by Dang (2011), which found a favorable connection between adequate LIQ levels and bank PROF. Essentially, banks that preserve sufficient LIQ levels have a tendency to be more profitable, as they are better positioned to extend loans. This outcome also supports the income theory, suggesting that banks can manage liquidity effectively by carefully managing loan issuance and timely repayment, thereby reducing the risk of repayment delays and ultimately enhancing profitability (Hacini, 2021).

Also, CAR was discovered to have a favorable and notable effect on ROA, as supported by t-stat. and p-val. of (7.86, 0.000) correspondingly. The p-val. of 0.000 falls below the 5% significance threshold, indicating that higher CAR corresponds to higher profitability, while lower CAR relates to lower profitability. These findings align with the assertions of Ongore& Kusa (2013), who argued that CAR directly impacts banks' profitability by influencing their ability to engage in risky yet profitable ventures or sectors. Given that CAR reflects a bank's financial robustness, a higher CAR contributes to enhanced financial strength, thus ensuring profitability. Additionally, the control variable, bank size, demonstrates a favorable and notable association with ROA, suggesting that greater banks have a tendency to produce advanced profits.

4.2 Discussion of Findings

Liquidity is a crucial factor inducing the performance and expansion of several sectors, including banking. To strike an equilibrium between PROF and LIQ banks endeavor to maximize profits while ensuring sufficient reserves to bolster liquidity (Basak, 2017). This research observed the influence of LRKM on the PROF of listed Nigerian banks. Managing LRK is a crucial aspect of firms' risk controlling strategies. A bank's capability to meet its obligations, particularly to depositors, hinges on its management of liquidity levels. The discoveries propose that banks maintaining adequate LRK stages have a tendency to achieve higher profitability. The study reveals a notable and favorable nexus between LIQR and ROA. This outcome aligns with the anticipated income theory's assertion that banks can regulate liquidity by carefully managing loan issuance and timely repayment, thereby minimizing repayment delays and fostering high liquidity levels, ultimately leading to enhanced performance (Hacini, 2021).

The research conducted by Mishkin & Eakins (2015) supported this observation, indicating that a higher loan-to-deposit ratio implies that a bank is extending a higher percentage of its deposit base in loans, potentially boosting profitability but also elevating liquidity risk. Conversely, a lower ratio proposes a more conventional borrowing approach by the bank, possibly with a higher proportion of credits apprehended in liquid assets, thus mitigating liquidity risk. Noraini (2012) highlighted that insufficient liquidity could lead to increased borrowing costs or difficulty in accessing funding, adversely affecting profitability. This study's outcomes align with those of Alim et al (2021), Alalade et al (2020), and Salim and Bilal (2016), Hakimi and Zaghdoudi (2017) whereas they contrast with the conclusions drawn by

Adegoke and Oyedeko (2018), Hacini et al. (2021), and Laminfoday (2018), all of whom identified a adverse and notable correlation between LRM and PROF. Additionally, Saifullah, Rashed, & Alamgir (2019); Takon and Mgbado (2020) found no notable impact of LIQ on PROF.

Further, CAR established a notable favorable correlation with ROA. This suggests that a higher CAR corresponds to higher ROA, and vice versa, as the CAR reflects the inner strength of the bank to undergo losses throughout crises (Mwangi, 2014). Maintaining a healthy CAR is imperative for banks. This result aligned with the discoveries of Hakimi and Zaghdoudi (2017); Otekunrin et al (2019), who identified a favorable and noteworthy connection between LIQR and PROF. On the other hand, Chowdhury and Zaman (2018) found a adverse and significant association between PROF and LIQR. Larger banks often make more money than smaller banks, according to the control variable's positive relationship with ROA. This discovery runs counter to the findings of Moslemany et al (2021) and Hakimi and Zaghdoudi (2017), who discovered a noteworthy and adverse impact of bank size (BSZ) on profitability. Thus, the outcomes of this study stipulate that LIQR has a noteworthy impact on the PROF of Nigerian listed DMBs.

5. Conclusion and Recommendations

Balancing a suitable combination of liquid and illiquid assets enables Nigerian banks to boost profitability while mitigating LRK. Given the intimate linking between LIQ and bank creditworthiness, effective liquidity management decreases the probability of banks facing insolvency, thereby mitigating the risk of bankruptcy (Noraini, 2012). The discoveries of this study offer compelling evidences to support the inferences that LRM notable influences the PROF of banks in Nigeria. Consequently, bank risk management committees need to enhance their oversight of LRK management practices. In this light, the study proposes the following recommendations: bank management should prioritize maintaining an appropriate loan-to-total-deposit ratio to evade possible liquidity deficit risks resulting from over-lending. Additionally, implementing a robust funding policy that encompasses effective divergence in funding sources and mode is essential. Identifying and closely monitoring the key factors influencing the bank's capability to upsurge resources is crucial to ensure the continued validity of assessed fundraising capacity.

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