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Impact of Liquidity Risks on the Financial Performance of Commercial Banks in Tanzania

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Abstract

This study examines the effects of liquidity risk on the financial performance of commercial banks in Tanzania. The study used secondary data from 28 banks over the period from 2010 to 2022, and different regression models to understand the relationship between liquidity indicators and bank performance. Specifically, it analysed the ratios of liquid assets to the total assets, total loans to total deposits, core deposits to total deposits, and capital to total deposits in relation to return on assets and return on equity. The balanced panel was used in this study because it helps to make sure that each bank is observed during the same time frame, which improves the consistency and comparability of estimates. This method works well since it controls for differences between banks and changes over time. It also accounts for unobserved differences and lowers bias when measuring the impact of credit risk factors on the bank performance. The panel regression assumptions included normality test, multicollinearity test, heteroscedasticity test and serial correlation test. The study also used the Hausman test to select the appropriate model between the fixed effect and random effect model where the fixed effect mode was selected as appropriate. The Prais-Winsten regression, correlated panels, and corrected standard errors (PCSEs) were used to handle multicollinearity, heteroscedasticity and serial correlation which existed in the study. The findings indicate that the ratio of liquid assets to the total assets negatively affects both return on assets and return on equity. On the other hand, the ratio of total loans to total deposits positively affects return on assets but does not seem to influence return on equity. The other two ratios did not show any significant impact on these performance measures. The study emphasizes the need for effective liquidity management to boost performance in Tanzanian banks and suggests that improved regulations and targeted initiatives could strengthen their financial health.

Keywords: *Commercial banks; Financial performance; Liquidity risk; ROA; ROE*

1.0 Introduction

Financial performance is a central concern for all business entities, but in the case of commercial banks, it carries particular importance because of the sector's crucial role in economic stability and development (Samo & Murad, 2019). Unlike other firms that primarily rely on revenue and operating profit as performance indicators, the banks depend heavily on their ability to manage liquidity, balance risk, and sustain customer confidence. In Tanzania, commercial banks form the backbone of the financial system, providing credit, mobilizing savings, and facilitating payments across the economy (Ghulam & Emad, 2020). Their stability therefore directly influences economic growth and the overall health of the financial sector.

The global financial crisis of 2007–2009 highlighted the centrality of liquidity risk management for banking institutions. The banks, which were unable to meet their short-term obligations were forced to liquidate assets at unfavourable prices, which worsened their financial position and transmitted instability across financial systems (Aldalsteinsson, 2014). As noted by Jenkinson (2008), liquidity risk remains one of the most critical threats to the banking operations

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because it directly affects solvency and long-term financial sustainability. In Tanzania, where the financial system continues to expand and deepen, understanding how liquidity risk interacts with bank performance is especially important for ensuring resilience against both domestic and external shocks (Sahyouni & Wang, 2019). The existing empirical literature on the relationship between liquidity risk and financial performance presents mixed results. For example, Chaudhary et al. (2023) and Yahaya et al. (2022) found a negative relationship, suggesting that higher liquidity risk reduces profitability. Conversely, studies (i.e., Uwaleke & Akinnagbe, 2023; Tegene et al., 2023) reported a positive relationship, indicating that the banks that are able to leverage liquidity risk may enhance performance. These inconsistencies highlight the need for further investigation, particularly in the Tanzanian context where fewer studies have been conducted and where the structural and regulatory environment may be different from those in other African countries.

This study therefore examines the effect of liquidity risk on the financial performance of commercial banks in Tanzania. Drawing on the Theory of Financial Distress, the study assesses how liquidity ratios influence the ability of the banks to maintain profitability and financial stability in the face of potential liquidity shortages. Liquidity risk is considered through multiple measures including the ratio of liquid assets to total assets (LA/TA), the ratio of total loans to total deposits (TL/TD), the ratio of core deposits to total deposits (CD/TD), and the ratio of capital to total deposits (C/TD). By focusing on these measures, the study contributes to a more comprehensive understanding of how liquidity risk influences the bank performance in Tanzania, while situating the findings within the broader debates in the banking and finance literature. The study aims mainly to determine the effect of liquidity risk on the financial performance of commercial banks in Tanzania. Specifically, the study intended to:

1. Examine the effects of liquid assets to total assets (LA/TA) on the financial performance of commercial banks in Tanzania.
2. Examine the effects of total loans to total deposits (TL/TD) on the financial performance of commercial banks in Tanzania.
3. Examine the effects of core deposits to total deposits (CD/TD) on the financial performance of commercial banks in Tanzania.
4. Examine the effect of capital to total deposits (C/TD) on the financial performance of commercial banks in Tanzania

1.1 Research hypothesis

To achieve the objectives of this study, the following research hypotheses were postulated:

1. H_{01}: Liquid assets to total assets (LA/TA) have no significant effect on the financial performance of commercial banks in Tanzania.
2. H_{11}: Liquid assets to total assets (LA/TA) have a significant effect on the financial performance of commercial banks in Tanzania.
3. H_{02}: Total loans to total deposits (TL/TD) have no significant effect on the financial performance of commercial banks in Tanzania.
4. H_{12}: Total loans to total deposits (TL/TD) have a significant effect on the financial performance of commercial banks in Tanzania.
5. H_{03}: Core deposits to total deposits (CD/TD) have no significant effect on the financial performance of commercial banks in Tanzania.
6. H_{13}: Core deposits to total deposits (CD/TD) have a significant effect on the financial performance of commercial banks in Tanzania.
7. H_{04}: Capital to total deposits (C/TD) has no significant effect on the financial performance of commercial banks in Tanzania.
8. H_{14}: Capital to total deposits (C/TD) has a significant effect on the financial performance of commercial banks in Tanzania.

2.0 Literature Review

2.1 Theoretical Perspective

2.1.1 Financial Distress Theory

The Financial Distress Theory, introduced by Gordon (1971), explains the circumstances under which firms encounter difficulties in meeting their financial obligations. It posits that when organizations experience liquidity shortages, excessive leverage, or declining revenues, they are more likely to suffer from reduced profitability, increased bankruptcy risk, and diminished value. In the banking sector, where liquidity is central to operations, the theory highlights how insufficient liquid assets can undermine solvency, erode depositor confidence, and threaten long-term survival (Khalid, Rashed, & Hossain, 2019, Olusho et al ,2022). According to this theory, the banks that cannot access adequate funds may be forced to sell assets at unfavourable prices or take on expensive debt, both of which reduce profitability. Empirical studies reinforce this link: Ratri (2021) and Tegene et al. (2023) have shown that weak liquidity positions intensify vulnerability of the banks during crises; and Olofin et al. (2024) demonstrate that liquidity stress increases regulatory pressure, compliance costs, and reputational risks. Thus, the theory provides the basis for examining how liquidity risk translates into weaker financial performance. Despite its strengths, the theory has been criticized for being overly deterministic, assuming that distress inevitably leads to decline or bankruptcy, without fully accounting for organizational resilience or turnaround strategies (Altman, 2013). It also focuses mainly on firm-level indicators such as liquidity and leverage, while paying limited attention to external macroeconomic factors, regulatory frameworks, or depositor psychology that can significantly influence the bank performance (Teply & Polena, 2020). Moreover, it does not sufficiently explain how institutional governance and management quality mediate the impact of liquidity risk. Despite these limitations, the Financial Distress Theory remains relevant to this study because it directly links liquidity risk with financial outcomes. In the Tanzanian context, where commercial banks operate in a volatile economic and regulatory environment, the theory helps to explain how liquidity shortages can undermine profitability and financial sustainability. It provides a solid framework for interpreting how liquidity indicators such as liquid assets to total assets, total loans to deposits, and capital to deposits affect the financial performance of commercial banks.

2.2 Liquidity Preference Theory

The Liquidity Preference Theory, advanced by Keynes (1936), offers another important perspective for understanding liquidity and financial performance. The theory asserts that economic agents prefer liquidity because of uncertainty about the future and therefore demand compensation (interest) for parting with liquid funds. Applied to banking, this implies that the banks must balance their preference for holding liquid assets which ensure stability and security with the pressure to allocate funds to loans and investments that generate higher returns (Mishkin, 2019). The theory explains why excessive liquidity holdings can reduce bank profitability, since idle liquid assets earn little return. Conversely, insufficient liquidity exposes the banks to the risk of being unable to meet withdrawals or short-term obligations, leading to reputational and operational challenges. Prior studies, such as Yahaya et al. (2022) and Chowdhury et al. (2018), demonstrate this tension: Maintaining liquidity is crucial for stability, but it comes at the cost of reduced profitability. Liquidity Preference Theory has been critiqued for its generality and lack of precision in predicting bank-specific behaviour. While it explains why liquidity is valuable, it does not fully capture how regulatory environments, capital adequacy requirements, or modern financial instruments influence liquidity management of the banks (Laeven & Valencia, 2020). Furthermore, it was originally developed for macroeconomic analysis rather than firm level or bank-level application, which limits its explanatory scope. Despite these weaknesses, the theory is valuable in this study because it explains the inherent trade-off, which commercial banks face between profitability and liquidity. In Tanzania, where the banks operate in a market characterized by both growth opportunities and liquidity risks, the theory helps interpret how the banks' liquidity management decisions influence their financial performance. The theory complements Financial Distress Theory by emphasizing not just the consequences of liquidity shortages but also the behavioural and strategic considerations underlying liquidity management.

Therefore, the applicability of both Financial Distress Theory and Liquidity Preference Theory provide a comprehensive framework for analysing liquidity risk and financial performance in Tanzanian commercial banks. Financial Distress Theory explains the negative outcomes of liquidity shortages, while Liquidity Preference Theory highlights the trade-off between holding liquidity and pursuing profitability. Their combined application strengthens the theoretical grounding of the study by showing both the risks of insufficient liquidity and the costs of excessive liquidity, making them particularly suitable for understanding the dynamics of liquidity risk in the Tanzanian banking industry.

Scholars (i.e., Olofin, Muritala, Maitala, Abubakar, & Ajalie 2024) examined the relationship between liquidity risk and profitability of listed deposit money banks in Nigeria over a 16-year period from 2008 to 2023. The study employed secondary panel data on cash reserve ratio, liquidity ratio, loan-to-deposit ratio, and return on equity, obtained from the annual reports and financial statements of five systemic banks listed on the Nigerian Exchange Group. Data were analysed using ordinary least squares regression, panel unit root tests, and the Hausman test. The findings revealed a significant positive relationship between the cash reserve ratio and profitability, as well as between the loan-to-deposit ratio and profitability. However, the liquidity ratio showed a negative but insignificant relationship with profitability.

Based on these findings, the study recommended that the Central Bank of Nigeria (CBN) should consider lowering the cash reserve ratio to enhance the operational efficiency of deposit money banks. In addition, banks were encouraged to employ competent personnel to ensure effective decision-making regarding optimal liquidity levels, and to fully utilize the loan-to-deposit ratio in supporting sales initiatives.

Nevertheless, the study has some weaknesses. It focused only on five systemic banks, which may not capture the performance dynamics of smaller or non-listed banks in Nigeria. Furthermore, the study relied heavily on firm-level liquidity indicators while overlooking macroeconomic factors such as inflation, interest rate changes, and exchange rate fluctuations that could also affect profitability. These limitations suggest that the findings should be interpreted with caution when applied beyond the sampled institutions.

2.3 Empirical Review

Uwaleke and Akinnagbe (2023) investigated the effect of liquidity risk on the financial performance of publicly listed deposit banks in Nigeria between 2008 and 2023, using data from five major institutions. Employing least squares regression and descriptive statistics, the study analysed liquidity indicators such as the cash reserve ratio, liquidity ratio, and loan-to-deposit ratio, with return on equity as the dependent variable. The findings indicated that the cash reserve ratio and loan-to-deposit ratio positively influenced financial performance, whereas the liquidity ratio exerted a marginally negative effect. The authors recommended regulatory reforms, such as reducing cash reserve requirements, and emphasized the importance of skilled liquidity management personnel.

According to Kyari, Adamu, and Ali (2023), a study in Nigeria examined the relationship between liquidity and the performance of deposit money banks. The objectives of the study were threefold: first, to determine the relationship between the current ratio and the bank performance; second, to investigate the relationship between loans-to-deposit ratio and the bank performance; and third, to assess the effect of deposits-to-total assets ratio on the performance of deposit money banks in Nigeria. The study relied on secondary panel data obtained from the banks' annual reports and the Nigerian Stock Exchange fact book. Using panel data analysis, the findings revealed that the current ratio had an insignificant negative relationship with the performance of deposit money banks. Based on these results, the study recommended that regulatory agencies such as the Central Bank of Nigeria (CBN) and the Nigerian Deposit Insurance Corporation (NDIC) should strengthen and enforce policies that promote effective liquidity management practices to enhance the performance of the banks.

In the context of developed economies, Eltweri et al. (2024) examined liquidity risk and financial performance among ten publicly listed UK banks following the implementation of Basel III (2015–

2021). Using panel data and Feasible Generalized Least Squares estimation, the study found that holding excessive liquid assets negatively affected return on assets, return on equity, and net interest margin, suggesting a trade-off between stability and profitability. The authors concluded that the banks must strike an optimal balance in liquidity management to enhance performance while remaining compliant with regulatory requirements. However, the study's reliance on UK banks means the results may not fully capture the liquidity challenges faced by emerging financial markets. In East Africa, Nyagah, Kithinji, and Mutegi (2024) explored liquidity risk and financial performance among Kenyan commercial banks, applying the Pecking Order Theory as a conceptual framework. The study employed stratified sampling to collect survey data from managers across different hierarchical levels in Nairobi-based banks. Regression analysis revealed a significant relationship between liquidity risk and financial performance, highlighting the managerial perception of liquidity as a determinant of profitability and stability. Although the study enriches the literature by incorporating managerial perspectives, its reliance on self-reported data raises concerns about subjectivity and potential response bias. Taken together, these studies underscore the complex and sometimes contradictory effects of liquidity risk on financial performance. Evidence from Nigeria and Kenya suggests that higher liquidity risk can enhance performance through active lending, while findings from the UK highlight the profitability costs of holding excessive liquidity. These variations demonstrate the importance of examining the liquidity–performance nexus within specific regulatory, economic, and institutional contexts. Against this backdrop, investigating Tanzanian commercial banks provides an opportunity to contribute context-specific insights to an ongoing global debate on the role of liquidity risk in shaping financial performance.

Chaudhary and Sapkota (2023) studied the effects of liquidity risk on the financial performance of commercial banks in Nepal. The study used pooled ordinary least squares estimator as techniques for data analysis. The study employed balanced panel data from ten commercial banks for period of 2012 to 2021. The metrics of independent variables of the study were capital ratio, investment ratio, liquidity ratio, bank size, and asset quality while the dependent variables metrics were ROA and ROE. The findings showed that larger banks, better liquidity management, and higher capital ratios positively influenced financial performance and investment ratios. Furthermore, the study found that asset quality negatively influenced performance. The liquidity risk management is essential for the financial success of commercial banks, though the focus on Nepalese institutions limits the wider generalizability of the results.

Tegene et al. (2023) examined the effects of liquidity risk on the financial performance of Ethiopian commercial banks from 2012 to 2021, adopting a sample of ten out of nineteen institutions. The study employed descriptive as well as inferential statistics to analyse secondary data obtained from audited annual financial statements. Liquidity risk is measured by the loan-to-deposit ratio (LTDR), liquid assets-to-deposit ratio (LATD), and liquid assets-to-total assets ratio (LATA), while financial performance was measured by return on equity (ROE). The study results revealed that LTDR and LATD had a negative significant effect on financial performance, whereas LATA has a positive but statistically insignificant effect on ROE. These findings suggest that excessive lending relative to deposits and high liquidity tied to deposits may constrain profitability, while asset liquidity provides weaker performance benefits.

Udenwa, Suberu, and Jacob (2023) examined the effects of liquidity risk on the financial performance of deposit money banks in Nigeria. In this study, liquidity risk was assessed using loan-to-asset and loan-to-deposit ratios, while financial performance was gauged by return on assets (ROA). Panel regression was applied to data from 11 publicly traded deposit money banks between 2014 and 2021. The results showed that loan-to-asset and loan-to-deposit ratios had a negative effect on ROA. It is suggested that banks diversify their lending portfolios. The banks should adhere to the Central Bank of Nigeria's loan-to-deposit ratio of 65per cent. The Bank Management should also monitor deposit growth and provide appropriate deposit interest rates to maintain sufficient funding for lending activities. While insightful, the study's concentration on Nigerian deposit money banks limits broader applicability across Africa.

Yahaya et al. (2022) studied the effects of liquidity risk on the performance of deposit money

banks (DMBs) in Sub-Saharan Africa. The study used a two-step system generalized method of moments (GMM) to study how liquidity risks affect performance. Data were collected from 50 publicly traded banks in six Sub-Saharan African countries: Nigeria, Ghana, South Africa, Zambia, Kenya, and Tanzania. Performance was measured using return on assets (ROA), return on equity (ROE), and net interest margin (NIM). The results suggest that liquidity risk has adverse effects on the bank performance. The study also finds that non-performing loans negatively affect performance. In conclusion, liquidity risk and non-performing loans adversely affect bank performance, highlighting the importance of region-specific liquidity management frameworks.

Ratri (2021) examined the effect of liquidity risk on the bank performance moderating effect of board size and board meeting. The study used data gathered from annual audited financial reports of traditional banks listed on the Indonesia Stock Exchange from 2014 to 2019. Multiple linear regression was used to check how liquidity risks affect financial performance. The results suggest that liquidity has a positive effect on the bank performance, meaning more credit risks can lead to improved bank performance. The study indicates that a larger board size negatively affects how liquidity risk influences the bank's performance. Thus, for the banks that have a lot of liquidity, a bigger board might correlate with reduced performance. The number of board meetings seems to lessen the positive impact of liquidity on the success of the banks. However, the findings are shaped by the governance environment in Indonesia and may not directly apply to other banking contexts.

Khalid, Rashed, and Hossain (2019) examined the effects of liquidity risk on the performance of commercial banks in Bangladesh. The study used a sample of 31 banks for the period of 2010 to 2017, collecting data from annual financial reports. The study applied both descriptive statistics and panel data regression analysis and found that liquidity had no statistically significant positive or negative effect on financial performance, measured by return on assets (ROA) and return on equity (ROE). The management of the banks need to emphasize more the liquidity risk management to ensure that all high risks are detected early before they affect the financial performance. Nevertheless, the reliance on Bangladeshi banks alone restricts the applicability of the results beyond that setting.

3.0 Materials and Methods

This study adopted a positivist research philosophy, which assumes that reality is objective and measurable, and that knowledge can be derived from observable phenomena using empirical methods (Saunders et al., 2019). Positivism emphasizes objectivity, replicability, and the use of quantitative data to uncover causal relationships. This philosophy is appropriate for the current study because it investigates the measurable effects of liquidity risk on the financial performance of commercial banks in Tanzania. Complementing the philosophy, the study employed a deductive research approach, which involves testing pre-existing theories or hypotheses through empirical observation (Bryman, 2016). The deductive approach aligns with the study's objectives and hypotheses, which are derived from Financial Distress Theory and liquidity management concepts. By applying this approach, the study seeks to determine whether theoretically predicted relationships between liquidity risk indicators and financial performance hold in the Tanzanian banking context. An explanatory research design was adopted to examine causal relationships between liquidity risk and financial performance. Explanatory research focuses on understanding cause-and-effect relationships rather than merely describing phenomena (Creswell & Creswell, 2018). This design is suitable for the study because it allows for the assessment of how specific liquidity indicators—such as liquid assets to total assets, total loans to total deposits, core deposits to total deposits, and capital to total deposits influence key measures of financial performance, including return on assets (ROA) and return on equity (ROE).

The study population comprised all 40 commercial banks licensed by the Bank of Tanzania, but only 28 banks were included because they had complete audited financial statements from 2010 to 2022. (Bank of Tanzania, 2024). Data were obtained from the Bank of Tanzania, individual bank websites, and the Dar es Salaam Stock Exchange. The inclusion criterion ensured balanced panel data, which is critical for reliable regression analysis. Twelve banks were excluded from the study because no financial data were available for the period under review. Including these banks would have been impossible, as the absence of data prevents any meaningful analysis of the relationship between credit

risk indicators and financial performance. Focusing on banks with complete and accessible data ensures that the study's findings are accurate, reliable, and based on verifiable information. Data analysis involved several stages to ensure validity and robustness. Prior to regression, diagnostic tests were conducted: the Jarque-Bera test assessed normality, the Variance Inflation Factor (VIF) detected multicollinearity (Ozili, 2023) and the White test evaluated heteroscedasticity (Greene, W. (2012)). To address potential heteroscedasticity, serial correlation, and cross-sectional dependence, the study employed Prais-Winsten regression with Panel Corrected Standard Errors (PCSEs). Additionally, the Hausman test guided the selection between fixed and random effects models, ensuring the most appropriate panel data specification (Kingu, 2018). By integrating positivist philosophy, deductive reasoning, and an explanatory panel data design, the methodology provides a rigorous framework to examine the effect of liquidity risk on financial performance. The approach ensures objectivity, consistency, and robustness in testing the study hypotheses and supports the generation of context specific insights relevant to Tanzanian commercial banks. The study used Prais–Winsten regression with Panel-Corrected Standard Errors (PCSEs) to control the heteroskedasticity, multicollinearity, and serial correlation in panel data, ensuring that the coefficient estimates are efficient and the standard errors are reliable for valid statistical inference.(Green, 2012).

4.0 Findings and Discussion

4.1 Descriptive Statistics

Table 1 presents descriptive statistics for 28 commercial banks in Tanzania over 13 years, totalling 364 observations. The mean return on assets (ROA) was 0.0169 (SD = 0.0199), indicating modest profitability among banks, while variability suggests differences in operational efficiency and asset utilization. Return on equity (ROE) averaged 0.1176 (SD = 0.1250), reflecting that while some banks achieved substantial returns for shareholders, others performed below expectations. Liquidity measures show that the ratio of liquid assets to total assets (LA/TA) averaged 0.8988 (SD = 0.4734). This high mean suggests that the banks maintain a significant level of liquid assets, consistent with good liquidity management practices. However, the large standard deviation indicates substantial variation among banks, implying differing liquidity strategies, which could affect their ability to meet short-term obligations and achieve profitability. The customer deposits to total deposits ratio (CD/TD) averaged 0.9259 (SD = 0.0723), highlighting the reliance on stable core deposits as a foundation for lending and financial stability, similar to patterns observed by Olofin et al. (2024) in Nigerian banks and Nyagah et al. (2024) in Kenya.

The total loans to total deposits ratio (TL/TD) averaged 0.7272 (SD = 0.1935), showing that banks actively utilize deposits to generate income, while the cash to total deposits ratio (C/TD) averaged 0.2064 (SD = 0.1876), indicating moderate cash holdings. These findings suggest a careful balance between liquidity and profitability, supporting the theoretical expectations of Financial Distress Theory, which predicts that insufficient liquidity can negatively impact bank performance. From a preliminary hypothesis perspective, these descriptive statistics provide initial support for the study's postulated relationships: $H_0$1: LA/TA has no significant effect on financial performance. The high mean LA/TA indicates that liquidity is a prominent feature in these banks, suggesting potential positive effects on ROA and ROE, as found in a study by Olofin et al. (2024). H 2: TL/TD has no significant effect.

The average TL/TD ratio demonstrates active lending, implying a positive association with profitability, consistent with Nyagah et al. (2024). H 3: CD/TD has no significant effect. While core deposits are stable, variability is low, suggesting a more indirect effect on performance, in line with Eltweri et al. (2024). H 4: C/TD has no significant effect. Moderate cash holdings indicate a trade-off between liquidity and income generation, echoing findings in UK banks (Eltweri et al., 2024). Overall, the descriptive statistics reveal that Tanzanian banks maintain substantial liquidity and rely on stable deposits, but profitability varies, reflecting differences in liquidity deployment strategies. This discussion provides a foundation for subsequent regression analysis, where the hypotheses were formally tested to quantify the effect of liquidity risk on financial performance. These interpretations illustrate how descriptive statistics can be linked to theory, hypotheses, and prior empirical studies,

serving as a template for analysing other data in the study.

Table 1. Descriptive Statistics

Variable		Mean	Standard deviation	Min	Max	Observations	
ROA	Overall	0.016911	0.019926	-0.14	0.0526	N =	364
	Between		0.012708	-0.02046	0.032662	n =	28
	Within		0.01552	-0.10263	0.054051	T =	13
ROE	Overall	0.117595	0.124956	-1.0712	0.3463	N =	364
	Between		0.071539	-0.07505	0.222454	n =	28
	Within		0.103273	-0.87855	0.511649	T =	13
LA/TA	Overall	0.898755	0.473442	0.091	4.5687	N =	364
	Between		0.416515	0.244	1.644647	n =	28
	Within		0.237482	0.362108	3.822808	T =	13
CD/TD	Overall	0.925854	0.072301	0.5548	1	N =	364
	Between		0.053338	0.8057	0.991562	n =	28
	Within		0.049765	0.644521	1.059282	T =	13
TL/TD	Overall	0.72716	0.193546	0.11	1.5174	N =	364
	Between		0.143457	0.328	0.960654	n =	28
	Within		0.132516	0.153524	1.283906	T =	13
C/TD	Overall	0.206435	0.187589	-0.0004	3.34	N =	364
	Between		0.058717	0.127692	0.399231	n =	28
	Within		0.178482	-0.0928	3.147205	T =	13

4.2 Correlation matrix

Table 2 presents the correlation coefficients between financial performance (ROE) and selected liquidity risk measures. The analysis reveals a negative correlation between the liquid assets-to-total assets ratio and ROE (r = -0.343), suggesting that holding higher proportions of liquid assets is associated with lower profitability. This implies that excess liquidity may reduce the banks' ability to generate returns, as liquid assets typically yield lower income compared to loans and other interest-earning investments. The study also shows that the core deposits-to-deposits ratio has a very weak positive correlation with ROE (r = 0.020). Although statistically weak, this suggests that reliance on stable, low-cost deposits provides a marginal benefit to the bank performance by lowering funding costs and enhancing financial stability. Similarly, the total loans-to-deposits ratio demonstrates a positive correlation with ROE (r = 0.195), indicating that greater utilization of deposits for lending activities is associated with improved profitability through increased interest income. However, this relationship also highlights a potential trade-off, as excessive loan deployment may expose the banks to heightened credit risk. In contrast, the capital-to-deposit ratio shows a weak negative correlation with ROE (r = -0.107), implying that while higher capitalization strengthens bank resilience and depositor confidence, it may constrain returns to shareholders by tying up resources in non-earning reserves.

Overall, the results suggest that liquidity risk indicators have mixed relationships with financial performance in Tanzanian commercial banks. Whereas higher liquidity and capitalization may enhance stability, they appear to reduce profitability, while efficient mobilization of deposits into lending activities tends to improve returns. These findings emphasize the importance of striking a balance between liquidity risk management and profit maximization strategies.

Table 2. Pairwise correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)
ROA	1.000					
ROE	0.776	1.000				
LA/TA	-0.343	-0.244	1.000			
CD/TD	0.020	0.000	-0.203	1.000		
TL/ TD	0.195	0.098	-0.073	-0.091	1.000	
C/TD	-0.107	-0.124	0.013	-0.002	0.024	1.000

4.3 Multiple Regression ROA

Table 3 presents the results of the multiple regression analysis examining the relationship between liquidity risk indicators and return on assets (ROA) for 28 commercial banks in Tanzania. The analysis tests the effect of liquid assets to total assets (LA/TA), total loans to total deposits (TL/TD), core deposits to total deposits (CD/TD), and capital to total deposits (C/TD) on bank profitability. The findings indicate that LA/TA has a statistically significant negative effect on ROA ($\beta = -0.014$, $p = 0.000 < 0.05$). This suggests that as the proportion of liquid assets increases, ROA tends to decline, reflecting the trade-off between holding highly liquid, low-yield assets and income-generating investments. These results support Hypothesis 1 (H 1) and are consistent with prior studies, including Eltweri et al. (2024) in the UK and Olofin et al. (2024) in Nigeria, where excessive liquidity was associated with reduced profitability. Conversely, the TL/TD ratio exhibits a significant positive effect on ROA ($\beta = 0.018$, $p = 0.001 < 0.05$), indicating that banks allocating a higher proportion of deposits to loans achieve better returns. This finding aligns with Hypothesis 2 (H 2) and supports observations by Nyagah et al. (2024) in Kenya, where active lending relative to deposits enhanced profitability. It highlights the importance of effective liquidity deployment to optimize returns. The CD/TD ratio shows a negative but statistically insignificant effect on ROA ($\beta = 0.009$, $p = 0.513 > 0.05$), suggesting that variations in core deposits alone do not meaningfully influence profitability in the Tanzanian context. Similarly, C/TD exhibits an insignificant negative effect ($\beta = -0.011$, $p > 0.05$), indicating that the proportion of capital relative to deposits does not significantly impact ROA. These results partially support Hypotheses 3 and 4, highlighting that while stable deposits and capital levels are important for the bank stability, their direct effect on asset returns may be limited unless accompanied by active asset utilization strategies. The model's R-squared value of 0.159 indicates that the liquidity risk variables account for 15.9% of the variance in ROA. Although this proportion may appear modest, it is typical in social science research, where R-squared values often range from 10 to 50 per cent when key independent variables are statistically significant (Ozili, 2023). The F statistic p-value of 0.000 confirms that the model is significant and reliable for examining the relationships between liquidity risk indicators and financial performance. In summary, these results demonstrate that liquid asset management and lending practices are the most critical liquidity risk factors influencing bank profitability in Tanzania. While stable deposits and capital provide a foundation for liquidity, they do not automatically translate into higher ROA. The findings corroborate Financial Distress Theory, emphasizing that improper liquidity allocation can constrain profitability, and align with prior empirical evidence across African and global banking contexts.

Table 3 shows the results from the multiple regression analysis between ROA and liquidity risk. The findings indicate that the ratio of liquid assets to total assets has a significant effect on financial performance, as shown by a p-value of 0.00, which is below the 5per cent threshold. This means that when the ratio of liquid assets goes up, the ROA decreases by 0.014. The study also found that the total loans-to-total deposits ratio positively affects financial performance, with a p-value of 0.001, implying that higher loans compared to deposits boost ROA by 0.018.

On the other hand, the core deposits-to-total deposits ratio did not show any meaningful negative effect on financial performance, with a p-value of 0.513, indicating it is not significant. An increase in core deposits relative to total deposits leads to a decrease in ROA of 0.009. The capital-to-deposit ratio also showed an insignificant negative effect, with a p-value over 5per cent, meaning more capital compared to deposits causes ROA to fall by 0.011.

The R-squared of 0.159 means that liquidity risk variables account for 15.9per cent of the variance in financial performance. The remaining variance is due to variables not considered in this work. The F-statistic p-value of 0.000 suggests the model is sound. This R-squared value is typical for studies in social science, often falling from 10 to 50per cent, especially when the main variables are statistically important (Ozili, 2023).

Table 3. Regression for ROA

ROA	Coef.	Standard error	t-value	p-value	[95% Conf	Interval]
LA/TA	-.014	.002	-6.74	0	-.018	-.01
CD/TD	-.009	.014	-0.65	.513	-.036	.018
TL/ TD	.018	.005	3.49	.001	.008	.027
C/TD	-.011	.007	-1.49	.137	-.026	.004
Constant	.028	.014	1.92	.055	-.001	.056
Mean dependent var	0.017	SD dependent var	0.020			
R-squared	0.159	Number of observations	364			
F-test	13.535	Prob > F	0.000			
	Akaike crit. (AIC)			-1869.701	Bayesian crit. (BIC)	-1846.318

*** *p<.01, ** p<.05, * p<.1*

4.1.1 Multicollinearity Test using Variance Inflation Factor (VIF)

Table 4 presents the multicollinearity test results for the ROA model. The variance inflation factor values range from 1.018 to 2.07, all of which are below 10 (Field, 2005), suggesting that multicollinearity is not a concern in this model.

Table 4. Multicollinearity Test

	VIF	1/VIF
Capital to Deposit	2.07	.483
Capital to Asset	2.069	.483
Core Deposits to total loans	1.056	.947
Liquid assets to total assets	1.053	.95
Loans to Deposits	1.018	.982
Mean VIF	1.453	.

4.4 Heteroscedasticity Test

Table 5 presents the results of the heteroskedasticity test using White's test. The null hypothesis (H) of the test assumes homoskedasticity, meaning that the variance of the error term is constant across observations. The alternative hypothesis (H_a) posits unrestricted heteroskedasticity, indicating that the error variance is not constant. The test results reveal a chi-squared value of 133.580 with a p-value of 0.000 ($\chi^2_{(\ )} = 133.580$, $p < 0.05$), leading to the rejection of the null hypothesis. This confirms the presence of heteroskedasticity in the data, suggesting that the variance of the regression residuals is not constant across observations. The results were further supported by Cameron and Trivedi's decomposition of the IM-test, which provides additional confirmation of heteroskedasticity. The presence of heteroskedasticity has important implications for regression analysis. Specifically, it can lead to inefficient estimates and biased standard errors, potentially affecting the significance of regression coefficients if uncorrected. To address this issue, this study employed Prais-Winsten regression with Panel Corrected Standard Errors (PCSEs), which corrects for heteroskedasticity, serial correlation, and cross-sectional dependence, ensuring that the estimated coefficients and statistical inferences are robust and reliable. In conclusion, the diagnostic test confirms that heteroskedasticity is present in the panel data, justifying the use of robust regression techniques to obtain accurate estimates of the effects of liquidity risk on the financial performance of Tanzanian commercial banks.

Table 5. Heteroscedasticity test

Source	chi2	df	p
Heteroskedasticity	133.580	20	0.000
Skewness	22.170	5	0.001
Kurtosis	3.570	1	0.059
Total	159.320	26	0.000
Source			

4.2 Regression for ROE

This shows the results from the regression analysis that examines how liquidity risk affects financial performance as shown by return on equity (ROE), regressed against each liquidity risk variable.

4.2.1 Multiple Regression ROE

Table 6 presents the results of the multiple regression analysis examining the relationship between liquidity risk indicators and return on equity (ROE) for 28 commercial banks in Tanzania. The analysis considers liquid assets to total assets (LA/TA), total loans to total deposits (TL/TD), core deposits to total deposits (CD/TD), and capital to total deposits (C/TD) as predictors of bank profitability.

The findings show that LA/TA has a statistically significant negative effect on ROE ($\beta = -0.065$, $p = 0.000 < 0.05$). This means that as the proportion of liquid assets increases, ROE declines, reflecting the trade-off between holding high liquidity buffers and generating shareholder returns. These results support Hypothesis 1 (H_1) and are consistent with studies such as Eltweri et al. (2024) and Olofin et al. (2024), which also found that excessive liquidity reduces financial performance.

However, the TL/TD ratio shows a positive but statistically insignificant effect on ROE ($\beta = 0.051$, $p = 0.123 > 0.05$). While the result aligns with Hypothesis 2 (H_2) by suggesting that increased lending relative to deposits could improve equity returns, the lack of significance indicates that this relationship is weak in the Tanzanian context. This contrasts with evidence from Nyagah et al. (2024) in Kenya, where lending activity had a strong positive effect on profitability.

The CD/TD ratio shows a negative but statistically insignificant effect on ROE ($\beta = -0.073$, $p = 0.416 > 0.05$), suggesting that variations in core deposits do not meaningfully influence shareholder returns. Similarly, C/TD shows a significant negative effect on ROE ($\beta = -0.099$, $p < 0.05$). Although

capital is essential for stability and solvency, the results indicate that excess capital holdings may limit returns, partially supporting Hypotheses 3 and 4.

The R-squared value of 0.083 shows that liquidity risk indicators explain 8.3per cent of the variation in ROE. Although this is below the 10–50per cent range often reported in social science studies, it is still acceptable for evaluating variable relevance, as noted by Ozili (2023). The F-statistic p-value of 0.000 confirms the overall significance and reliability of the model in explaining the effect of liquidity risk on the bank performance.

Therefore, the results show that liquid asset holdings and capital structure are the main liquidity risk factors affecting ROE in Tanzanian banks. However, lending and deposit composition have weaker or insignificant effects. These findings support Financial Distress Theory, which suggests that excess liquidity and over-capitalization reduce profitability, a pattern also observed in other banking systems

Table 6. Multiple regression for ROE

ROE	Coef.	Standard error	t-value	p-value	[95% Conf	Interval]	Sig
LA/TA	-.065	.014	-4.73	0	-.092	-.038	** *
CD/TD	-.073	.09	-0.81	.416	-.25	.103	
TL/ TD	.051	.033	1.54	.123	-.014	.116	
C/TD	-.099	.048	-2.04	.042	-.194	-.004	*
Constant	.217	.094	2.31	.022	.032	.402	*

Mean dependent var	0.118	SD dependent var	0.125
R-squared	0.083	Number of obs	364
F-test	6.507	Prob > F	0.000
Akaike crit. (AIC)	-501.765	Bayesian crit. (BIC)	-478.382

*** p<.01, ** p<.05, * p<.1

4.5 Multicollinearity Test

Table 7 presents the results of the heteroskedasticity test using White's test. The null hypothesis (H_0) assumes homoskedasticity, meaning that the variance of the error term is constant across observations. Conversely, the alternative hypothesis (H_a) posits unrestricted heteroskedasticity, indicating that the error variance is not constant.

The test results reveal a p-value of 0.000, which is below the 0.05 significance threshold ($p < 0.05$). Consequently, the null hypothesis is rejected, confirming the presence of heteroskedasticity in the model. This suggests that the variance of the regression residuals is not constant across observations.

The presence of heteroskedasticity has important implications for regression analysis. Specifically, it can result in inefficient estimates and biased standard errors, thereby affecting the reliability of hypothesis testing for regression coefficients if not corrected. To address this concern, the study employed Prais-Winsten regression with Panel Corrected Standard Errors (PCSEs). This approach corrects heteroscedasticity, serial correlation, and cross-sectional dependence, thereby ensuring that the coefficient estimates and statistical inferences remain valid and robust.

In conclusion, the diagnostic test confirms that heteroskedasticity exists in the panel data, thus justifying the application of robust estimation techniques to produce accurate and reliable results regarding the effect of liquidity risk on the financial performance of Tanzanian commercial banks.

Table 7. Multicollinearity

	VIF	1/VIF
C/T D	2.07	.483
CD to TD	1.056	.947
LA to TA	1.053	.95
TL to TD	1.018	.982
Mean VIF	1.453	.

4.2.2 Heteroscedasticity Test

Table 8 presents the heteroscedasticity test results. White's test produced a p-value of 0.0000, less than the 0.05 significance level. Thus, the null hypothesis of constant variance is rejected. The variance of the error terms is not constant, which suggests heteroscedasticity exists in the model.

Table 8. Heteroscedasticity test

Source	**chi2**	**df**	**p**
Heteroskedasticity	66.740	20	0.000
Skewness	11.720	5	0.039
Kurtosis	1.580	1	0.209
Total	80.040	26	0.000

4.6 Fixed and Random Effect Model for ROA

Table 9 shows the Hausman test results, which help choose between fixed and random effect models. The test gave a p-value of 4per cent, which is less than 5per cent. Thus, the null hypothesis is rejected and decide that the Random Effect Model is the right fit.

Table 9. Hausman (1978) specification test

	Coef.
Chi-square test value	15.665
P-value	.004

4.7 Serial Correlation Test

Serial correlation was checked through the Pesaran CD and Breusch-Pagan LM tests. The null hypothesis (H0) stated no serial correlation, while the alternative hypothesis (H1) stated the opposite. Both tests yielded p-values of 0.000, less than the 5%per cent level, which suggests serial correlation. Thus, the Prais-Winsten regression model with corrected standard errors was used. Pesaran's test for cross-sectional independence produced a statistic of 4.616 (p = 0.0000), and the average standard deviation of the off-diagonal elements was 0.294.

4.8 Prais-Winsten Regression, Correlated Panels Corrected Standard Errors (PCSEs)

4.8.1 Prais-Winsten Regression, Correlated Panels Corrected Standard Errors (Pcses) for ROA

Table 10 presents the results of the Prais–Winsten regression with Panel-Corrected Standard Errors (PCSEs) examining the effect of liquidity risk indicators on the financial performance, measured by Return on Assets (ROA). The analysis tests the impact of liquid assets to total assets (LA/TA), total

loans to total deposits (TL/TD), core deposits to total deposits (CD/TD), and capital to total deposits (C/TD).The findings indicate that LA/TA has a statistically significant negative effect on ROA (β = -0.010, p < 0.05). This suggests that as the proportion of liquid assets increases, ROA declines by 0.01 units, reflecting the trade-off between holding highly liquid but low-yield assets and investing in income-generating opportunities. Conversely, TL/TD shows a statistically significant positive effect on ROA (β = 0.024, p < 0.05), implying that the banks allocating a higher proportion of deposits to loans achieve better profitability through increased interest income. On the other hand, the CD/TD ratio records a negative but statistically insignificant effect on ROA (β = -0.005, p > 0.05), suggesting that variations in core deposits do not have a strong direct influence on bank profitability in the sampled Tanzanian commercial banks. Similarly, C/TD demonstrates a negative but statistically insignificant effect on ROA (β = -0.007, p > 0.05), indicating that higher capital relative to deposits, while strengthening solvency, does not necessarily improve asset returns. The model's R-squared value of 0.090 indicates that the liquidity risk variables explain 9.0per cent of the variance in ROA, which is modest but typical for social science research where explanatory power often ranges between 10 and 50per cent (Ozili, 2023). The Prais–Winsten regression model was statistically significant (p = 0.012 < 0.05), confirming its reliability for analysing the relationship between liquidity risk and financial performance.

Therefore, the results show that liquid asset management and lending practices (LA/TA and TL/TD) are the most critical liquidity risk factors affecting bank profitability in Tanzania. By contrast, stable deposits and capital reserves (CD/TD and C/TD) play a limited direct role, though they remain important for long-term stability. These findings underscore the importance of efficient liquidity deployment and align with the Financial Distress Theory, which emphasizes that excessive liquidity holdings constrain profitability.

Table 10. Prais-Winsten Regression, Correlated Panels Corrected Standard Errors (PCSEs)

ROA	Coef.	Standard error	t-value	P-value	[95% Conf	Interval]	Sig
LA/TA	-.01	.006	-1.72	.085	-.021	.001	*
CD/TD	-.005	.013	-0.39	.696	-.031	.021	
TL/ TD	.024	.008	3.17	.002	.009	.039	***
C/TD	-.007	.014	-0.50	.614	-.036	.021	
Constant	.016	.016	0.99	.322	-.016	.048	

Mean dependent var	0.017	SD dependent var	0.020
R-squared	0.090	Number of observations	364
Chi-square	14.679	Prob > chi2	0.012

**** p<.01, ** p<.05, * p<.1*

4.9 Prais-Winsten regression, correlated panels corrected standard errors (PCSEs) for ROE

Table 11 presents the results of the Prais–Winsten regression analysis examining the relationship

between liquidity risk indicators and return on equity (ROE) for 28 commercial banks in Tanzania. The analysis tests the effects of liquid assets to total assets (LA/TA), total loans to total deposits (TL/TD), core deposits to total deposits (CD/TD), and capital to total deposits (C/TD) on bank profitability. The findings indicate that LA/TA has a negative but statistically insignificant effect on ROE ($\beta = -0.041$, $p > 0.05$). This suggests that although holding higher proportions of liquid assets may slightly reduce equity returns, the relationship is not statistically reliable. Similarly, CD/TD exhibits an insignificant negative effect on ROE ($\beta = -0.051$, $p > 0.05$), indicating that variations in stable deposits do not meaningfully affect shareholder returns. C/TD also shows a negative but statistically insignificant effect ($\beta = -0.057$, $p > 0.05$), implying that higher capital relative to deposits, while strengthening solvency, does not significantly enhance ROE. TL/TD demonstrates a positive but statistically insignificant effect on ROE ($\beta = 0.033$, $p = 0.542 > 0.05$), suggesting that a greater proportion of deposits allocated to loans may slightly improve profitability, but the effect is weak and not significant in the sampled Tanzanian commercial banks. The model's R-squared value of 0.033 indicates that liquidity risk variables account for only 3.3per cent of the variation in ROE. The overall regression is not statistically significant (Prob > F = 0.337 > 0.05), suggesting that these liquidity risk indicators do not have a meaningful linear influence on equity returns in this context.

These results indicate that liquidity management and loan deployment have limited direct effect on ROE. Profitability appears to depend more on other factors, such as effective lending strategies, operational efficiency, or macroeconomic conditions, than on stable deposits or capital ratios alone. Tanzanian commercial banks should therefore balance maintaining sufficient liquidity for resilience with active utilization of deposits and investments to enhance shareholder value.

Table 11. Prais-Winsten Regression, Correlated Panels Corrected Standard Errors (PCSEs)

ROE	Coef.	Standard error	t-value	p-value	[95% Conf	Interval]	Sig
LA/TA	-.041	.025	-1.62	.105	-.09	.009	
CD/TD	-.051	.075	-0.69	.491	-.197	.095	
TL/ TD	.033	.055	0.61	.542	-.074	.14	
C/TD	-.057	.061	-0.93	.35	-.177	.063	
Constant	.189	.095	1.99	.047	.003	.375	**

Mean dependent var	0.118	SD dependent var	0.125
R-squared	0.033	Number of observations	364
Chi-square	5.699	Prob > chi2	0.337

**** p<.01, ** p<.05, * p<.1*

5.0 Discussion of Findings

The study revealed that the liquid assets to total assets ratio (LA/TA) has a statistically significant negative effect on return on assets (ROA). This suggests that higher levels of liquid assets, while improving short-term solvency, reduce profitability, reflecting the trade-off between liquidity and income-generating investments. These results support Hypothesis 1 (H 1) and align with previous studies by Chaudhary et al. (2023) and Yahaya et al. (2022), which also reported a negative impact of excessive liquidity on bank profitability. The findings underscore the importance of strategic liquidity management to optimize financial performance, consistent with Financial Distress Theory, which posits that improper liquidity allocation can threaten profitability and long-term stability. The total

loans to total deposits ratio (TL/TD) was found to have a significant positive effect on ROA. This indicates that the banks actively deploy deposits into lending activities tend to achieve higher profitability, supporting Hypothesis 2 (H 2). These results are consistent with Uwaleke et al. (2023) (2024) and Tegene et al. (2023), highlighting that effective allocation of funds through lending is a key determinant of bank performance in both Tanzania and other African contexts. Conversely, the core deposits to total deposits ratio (CD/TD) and the capital to total deposits ratio (C/TD) exhibited negative but statistically insignificant effects on ROA ($\beta = -0.005$ and $\beta = -0.007$, respectively). These results partially support Hypotheses 3 and 4, suggesting that while core deposits and capital are critical for bank stability, they do not directly enhance profitability unless accompanied by active asset deployment. This contrasts with Ratri (2021), who reported positive effects of these ratios on ROA, possibly reflecting differences in banking structures or regulatory environments between Tanzania and other study contexts. The model's R-squared value of 0.090 and overall significance ($F = 0.012$) indicate that liquidity risk variables explain a meaningful, though modest, portion of the variance in financial performance. Such R-squared values are typical in social science research, where multiple factors beyond the studied independent variables influence outcomes (Ozili, 2023). These results reinforce the importance of prudent liquidity and loan management in enhancing bank performance, highlighting trends in the Tanzanian banking sector that merit further investigation. Finally, the study found that Loans and Advances to Total Assets did not significantly affect either ROA or ROE, contrasting with studies by Eltweri et al. (2024), Kithinji et al. (2024), and Udenwa, Suberu, and Jacob (2023) which suggest that liquidity risks can severely impact financial performance. This divergence may reflect differences in lending policies, regulatory oversight, or the broader macroeconomic environment in Tanzania. In conclusion, the findings indicate that effective liquidity management and strategic loan allocation are critical for improving bank profitability, while stable deposits and capital primarily provide a foundation for risk mitigation rather than direct financial gains. This discussion provides both theoretical and practical insights, serving as a framework for interpreting other performance metrics in the study.

6.0 Conclusion and Recommendations

6.1 Conclusion

This study examined the effect of liquidity risk on the financial performance of commercial banks in Tanzania. The findings indicate that a high ratio of liquid assets to total assets (LA/TA) negatively affects return on assets (ROA), highlighting the trade-off between liquidity and profitability. Conversely, a higher loans-to-deposits ratio (TL/TD) positively influences ROA, suggesting that effective deployment of deposits into income generating assets is crucial for enhancing bank performance. The core deposits-to-total deposits (CD/TD) and capital-to-total deposits (C/TD) ratios shows negative but statistically insignificant effects, indicating that while these factors support financial stability, they do not substantially drive profitability. These results emphasize that liquidity management is a key determinant of financial performance in Tanzanian banks, consistent with the Financial Distress Theory, which predicts that inadequate liquidity allocation can constrain operational efficiency and profitability. Additionally, the findings partially diverge from some prior studies, reflecting the unique structural and regulatory characteristics of Tanzania's banking sector. Overall, the study confirms that strategic allocation of liquid assets and loans is essential for sustaining profitability while maintaining financial stability.

6.2 Recommendations

The study recommends the following:

Optimized liquidity management: Banks should maintain an appropriate balance between liquid assets and income-generating assets to minimize the negative impact of excessive liquidity on profitability.

Prudent lending practices: Commercial banks should enhance loan origination and monitoring procedures to increase profitability while mitigating credit risks associated with higher lending ratios.

Strategic use of core deposits and capital: While these variables have limited direct impact on profitability, the banks should continue to manage core deposits and capital prudently to strengthen financial stability and resilience against market shocks.

Regulatory guidance: The Central Bank of Tanzania could refine liquidity risk regulations, providing clearer frameworks to promote effective liquidity management and ensure systemic stability.

Future research directions: Subsequent studies should explore additional determinants of Tanzanian banks' financial performance, such as operational efficiency, asset quality, and risk management practices. Comparative studies benchmarking Tanzanian banks against international peers could provide insights into best practices and performance gaps. By implementing these recommendations, Tanzanian commercial banks can enhance financial performance, optimize liquidity allocation, and strengthen resilience against financial risks. Tanzanian banks should refine their approach in liquidity risk management, as heavy dependence on liquid assets may adversely affect financial performance.

References

Abba, M. K., Hafsat, B. A., & Umar, S. A. (2023). Impact of Liquidity risk on Financial Management of Deposit Money Banks in Nigeria. *International Journal of Business Systems and Economics*, 14(1), 111-129. https://doi: 10.47191/jefms/v7-i8-10. 8.044

Aldalsteinsson, G. (2014), The Liquidity Risk Management Guide: From Policy to Pitfalls, Hohn Wiley and Sons, Hoboken, NJ.

Altman, E. I. (2013). Predicting Financial Distress of Companies: Revisiting the Z-Score and ZETA® Models. In A. R. Bell, C. Brooks, & M. Prokopczuk (Eds.), Handbook of Research Methods and Applications in Empirical Finance (pp. 428-456). Edward Elgar Publishing.

Bank of Tanzania. (2024). Tanzania Financial Stability Report. Bank of Tanzania, March. Retrieved from http://www.bot.tz.org

Bryman, A. (2016). *Social Research Methods* (5th ed.). Oxford University Press.

Chaudhary, A., & Sapkota, P. (2023). Effect of liquidity risk on financial performance of commercial banks in Nepal. *International Journal of Finance and Commerce*, 5(1), 117–124. https://www.commercejournals.com

Eltweri, A. (2024). The influence of liquidity risk on financial performance: A study of the UK's largest commercial banks. *Journal of Risk and Financial Management*, 17(12), 580. https://doi.org/10.3390/jrfm17120580

Ghulam S. & Emad T. C. (2020). Risk Management & Financial Performance of Commercial Banks in Pakistan. *The Lahore Journal of Business*, 9(1): 87–103. https://doi:10.35536/ljb.2020.v9.i1.a4

Gordon, M. J. (1971). Towards a Theory of Financial Distress." *The Journal of Finance,* 26, (2).

Greene, W. (2012) *Econometric Analysis*. 7th Edition, Prentice Hall, Upper Saddle River. https://doi.org/10.4337/9780857936080.00027

Jenkinson, N. (2008). Strengthening regimes for controlling liquidity risk: some lessons from the recent turmoil. *Bank of England Quarterly Bulletin, Quarterly*, 2

Keynes, M. (1938). The Liquidity-Preference Theory of Interest. *The American Economic Review*, 28(2), 247–260. http://www.jstor.org/stable/1806751

Khalid, M. S., Rashed, M., & Hossain, A. (2019). The impact of liquidity risk on banking performance: Evidence from the emerging market. *Global Journal of Management and Business Research*, *19*(4), 47-52.

Laeven, L., and Valencia, F. (2020), Systemic banking crises database II, *IMF Economic Review*, Vol. 68, pp. 307-361.https:// https://papers.ssrn.com.

Nyagah, D., Kithinji, M., & Mutegi, D. (2024). Effect of liquidity risk on financial performance of

commercial banks in Kenya. *The Strategic Journal of Business and Change Management*, 11 (3), 400 – 414. http://.doi.org/10.61426/sjbcm.v11i3.3035

Olofin, A. J., Muritala, T. A., Maitala, F., Abubakar, H. L., & Ajalie, S. N. (2024). The impact of liquidity risk on profitability of listed deposit money banks in Nigeria. *Business Review*, 9(6), Article 4777. https://doi.org/10.26668/businessreview/2024.v9i6.4777

Olushola Jacob, A. Jinjiri Ringim, K. ., & Shuaibu, H. . (2022). Liquidity risk management and financial performance of listed deposit money banks in Nigeria. *International Journal of Intellectual Discourse*, 5(1), 64–76. Retrieved from https://ijidjournal.org/index.php/ijid/article/view/47

Ozili, P.K. (2023) The Acceptable R-Square in Empirical Modelling for Social Science Research. In: *Advances in Knowledge Acquisition, Transfer, and Management,IGIGlobal*,134-143.https://doi.org/10.4018/978-1-6684-6859-3.ch009

Pallant, J. (2020) *SPSS Survival Manual. A Step by Step Guide to Data Analysis Using IBM SPSS*. 7th Edition, Routledge, London. https://doi.org/10.4324/9781003117452

Ratri, I. N. (2021). The effect of liquidity risk on bank performance: Moderating effect of board size and board meeting. *Journal Management Teori dan Terapan*, 14(3), 346. https://doi.org/10.20473/jmtt.v14i3.30470.

Sahyouni, A., & Wang, M. (2019). Liquidity creation and bank performance: evidence from MENA. ISRA *International Journal of Islamic Finance*, 11(1), 27–45. doi.org/10.1108/IJIF-01-2018-0009

Samo, A. H., & Murad, H. (2019). Impact of liquidity and financial leverage on firm's profitability an empirical analysis of the textile industry of Pakistan. *Research Journal of Textile and Apparel*, 23(4), 291–305.https:// doi.org/10.1108/RJTA-09-2018-0055

Saunders, M., Lewis, P., & Thornhill (2019). A research method for business students. PitmanPublisher.https://www.researchgate.net/profile/Mark-Saunders-10/publication/330760964

Tegene, K. B., & Ram, B. M. V. (2023). The effect of liquidity risk on financial performance of commercial banks in Ethiopia. *Seybold Report Journal*, 18(4), 80–97. Retrieved from https://seyboldreport.com/

Teply, P., & Polena, M. (2020). Best classification algorithms in peer-to-peer lending. *North American Journal of Economics and Finance*, 51, 101080. https://doi.org/10.1016/j.najef.2019.101080

Udenwa, A. T., Suberu, A. A., & Jacob, Z. (2023). Effect of liquidity risk on the financial performance of quoted deposit money banks in Nigeria. *International Journal of Economics, Business and Management Research*, 7(7). https://doi.org/10.51505/IJEBMR.2023.7705.

Yahaya, A., Mahat, F., M.H., Y., & Matemilola, B. T. (2022). Liquidity risk and bank financial performance: An application of system GMM approach. *Journal of Financial Regulation and Compliance*, 30(3), 312–334. https://doi.org/10.1108/JFRC-03-2021-0019.