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INTEREST RATE RISK AND LIQUIDITY OF COMMERCIAL BANKS IN KENYA: EVIDENCE FROM THE KENYAN BANKING SECTOR

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ABSTRACT

Liquidity management is very important for the stability and long-term existence of the commercial banks, especially in the developing countries with uncertain interest rate regime. Persistent fluctuations in interest rates, which influence banks' cost of capital, their lending activities and their total liquidity levels, constitute major threats to financial stability. The study focused on the effect of interest rate risk on liquidity of the Kenya's commercial banks. The study employed a quantitative explanatory research design. Primary data was collected from senior management staff of the 39 licensed commercial banks operating in Kenya as of 31st December 2023. A sample of ninety-one respondents was obtained using stratified random selection. Simple linear regression, Pearson correlation and descriptive statistics were analyzed using SPSS. Interest rate risk was operationalized by interest rate sensitivity, interest rate spread, interbank borrowing and loan to deposit ratio while liquidity was quantified by cash balances, cash to deposit ratio, liquid assets and dividend payout. The results indicate a high, significant positive association between interest rate risk and liquidity ($r = 0.704$, $p < 0.001$). The outcome of regression study shows that the interest rate risk has considerable impact on liquidity ($\beta = 0.714$, $p < 0.001$) and 67.0% ($R2 = 0.670$) of the volatility of the liquidity of commercial banks can be explained. These results attest to the benefits of efficient interest rate risk management on banks' abilities to preserve sufficient liquidity and meet their financial commitments. We recommend commercial banks to enhance their interest rate risk management framework, maximize interest rate spreads and strengthen interbank liquidity management to increase resistance to interest rate movements. This study adds to the growing body of knowledge on bank risk management by giving empirical evidence on the relationship between interest rate risk and liquidity in the Kenyan banking sector. It also offers valuable information to bank management, regulators and legislators who wish to strengthen the stability of the financial system.

KEYWORDS: Interest rate risk; Liquidity; Commercial banks; Interest rate spread; Interbank borrowing; Kenya; Risk management.

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1. INTRODUCTION

Liquidity is an important component that supports the stability, resilience and profitability of commercial banks all over the world. The basic role of banks is financial intermediation. It means that banks mobilize deposits of surplus economic units and lend them to productive units as loans and advances. In order for banks to serve this intermediary function, they need to have enough liquidity to meet withdrawal requests of consumers and other financial obligations, without suffering excessive losses. But volatile financial markets, fluctuating macroeconomic conditions and interest rate changes are making it increasingly difficult to keep an optimal liquidity position. Interest rate risk can impact funding costs, a measure of banks' assets and liabilities, and the availability of liquid resources in the end. Thus, effective interest rate risk control is now embedded in prudential banking regulation and financial risk management worldwide (Basel Committee on Banking Supervision, 2023). The recent episodes of the global financial instability have demonstrated the need of managing interest rate risk in bank liquidity. The COVID-19 epidemic has led to a significant tightening of monetary policy in advanced and emerging economies, putting banks at major danger of repricing and liquidity concerns. Weak management of interest rate risk can rapidly erode liquidity and jeopardize the health of a financial institution, as was the case with the collapse of a number of U.S. financial institutions in 2023, notably Silicon Valley Bank. Therefore, central banks and financial regulators have tightened the Basel III monitoring criteria by focusing on strong interest rate risk management techniques, net stable funding ratios, and liquidity coverage ratios (BCBS, 2023). These developments have generated additional academic interest in the impact of interest rate risk on bank liquidity in different monetary systems.

The banking sector in Africa still has serious liquidity problems despite major regulatory improvements. Shallow financial markets, erratic exchange rates, varying inflation, changeable policy interest rates, and limited access to long-term financing are common characteristics of African economies. These macroeconomic variables increase the interest rate risk for commercial banks, which has an impact on their liquidity and lending capabilities. Regulatory organizations in Africa have put in place a variety of monetary policy instruments to ensure adequate liquidity in commercial banks and stable monetary systems. However, empirical evidence in African countries is contradictory. The relationship between changes in interest rates and bank liquidity has been the subject of conflicting research in Nigeria, Ghana, South Africa, and Botswana. These results imply that the interaction of market structures, regulatory frameworks, and institutional settings is crucial (Rahman & Harun, 2025; Akuaku, 2021; Qudah, 2023). The contradictory results highlight the need for country-specific studies that take the local banking system into account.

Kenya's financial system is based on the banking industry which is the largest provider of financial intermediation. The banks' creation of credit spurs economic growth. The Central Bank of Kenya

(CBK) has continued to implement prudential measures to safeguard liquidity and ensure the stability of the financial system. The banking industry as a whole has generally kept its liquidity ratios above the legal threshold, however several commercial banks have encountered periodic liquidity shortages during the last 10 years. The Central Bank of Kenya Banking Supervision Reports indicated that regulatory actions such as mergers, acquisitions, receiverships, and adjustments to monetary policy tools were taken to improve liquidity conditions when some banks did not achieve the required liquidity ratio between 2014 and 2023 (CBK, 2023). As the cases above illustrate, liquidity risk is a persistent issue, even in the presence of ongoing regulatory attention. As finance costs are directly affected by changes in market interest rates, loan pricing, deposit mobilization and asset valuations, understanding the impact of interest rate risk on liquidity is critical for the stability of Kenya's banking industry.

The empirical research that has been published thus far has shown contradictory results about the connection between interest rate risk and banking performance. According to Kick (2022), interest rate shocks have a positive effect on commercial banks' capacity to supply liquidity. In a similar vein, Onyango and Kalunda (2023) discovered that efficient interest rate risk management enhances the financial performance of Kenyan investment banks, while Jialu (2023) showed that interest rate liberalization significantly affects liquidity risk in Chinese commercial banks. However, Ronoh, Naibei, and Cheruiyot (2021) claim that rising interest rate spreads have a negative impact on the financial performance of Kenyan commercial banks. Since other research has mostly focused on the relationship between profitability and interest rate volatility rather than liquidity, there is little proof that interest rate risk directly affects commercial banks' liquidity levels (Nouman et al., 2022; Salman et al., 2024). Because of this, the corpus of recent research presents contradictory findings and emphasizes different facets of banking performance.

With the increasing quantity of studies on financial risk management, there are still several important knowledge gaps. First, although few research have investigated liquidity as the key outcome variable, many previous studies have focused mostly on financial performance variables like as profitability, return on assets or shareholder value. Second, most of the prior research has been conducted in industrialized countries or other developing markets, limiting the generalizability of its findings to Kenya's unique banking setting. Third, previous studies undertaken in Kenya have focused on specific aspects of interest rate risk such as lending rates or interest rate spreads rather than comprehensively analyzing multiple aspects of interest rate risk such as interest rate sensitivity, interest rate spread, interbank borrowing and loan to deposit ratio in relation to liquidity. Furthermore, the recent reforms in the financial sector in Kenya have been characterized by significant regulatory and monetary policy changes that require timely empirical studies to improve policy and banking practice. Filling these gaps will help to better understand the impact of interest rate risk on liquidity

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management in Kenya's commercial banking industry.

Therefore, this study's objective was to assess how interest rate risk affected the liquidity of Kenyan commercial banks. The examination's specific objectives were to determine how much interest rate risk influences liquidity in licensed commercial banks and to provide empirical data that bank managers, financial regulators, and policy makers can utilize to enhance liquidity risk management and promote stability in the financial sector.

STATEMENT OF THE PROBLEM

Liquidity is the bedrock of the stability and sustainability of commercial banks. It helps to meet short term commitments, to produce credit without drawing severe losses and to meet the withdrawal of deposits. Therefore, it is necessary to have sufficient liquidity not just for the survival of a single bank, but also for the general stability of the actual economy and the financial system. But the rapid change in interest rates, the shift in monetary policy and the dynamic macroeconomic environment which generate interest rate risk exposure of banks have made it more difficult to reach an optimal liquidity position.

In Kenya, the CBK has continued to strengthen prudential regulations to improve liquidity and financial stability. Despite regulatory efforts, evidence from the CBK Banking Supervision Reports reveals that several commercial banks experienced liquidity constraints between 2014 and 2023, with some banks failing to meet the statutory minimum liquidity ratio. Such challenges led to regulatory interventions including cuts in the Cash Reserve Ratio to add more liquidity to the banking system and bank mergers, acquisitions and receiverships to protect depositors and maintain confidence in the financial system. "Overall, the banking sector has proved resilient but the repeated occurrences of liquidity strains indicate that commercial banks continue to encounter key challenges in managing the risks arising from evolving interest rate conditions.

Many empirical papers have extensively investigated interest rate risk's effects on many aspects of bank performance, but their results are inconclusive. For instance, Salman et al. (2024), Thomas (2022) and Nouman et al. (2022) reported that the volatility of the interest rate positively impacts the viability of commercial banks. On the other hand, Kenyan commercial banks' financial performance is negatively impacted by the interest rate spread (Ronoh, Naibei and Cheruiyot, 2021). Likewise, Kick (2022) discovered that the production of liquidity is positively impacted by interest rate shocks, whereas Jialu (2023) demonstrated that the liquidity risk in Chinese commercial banks is significantly impacted by interest rate liberalization. The mixed results imply that the association between interest rate risk and banking performance is situation-dependent and warrants additional empirical research. In addition, the current studies have important knowledge gaps. Firstly, most prior work has focused

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mainly on financial results indicators such as profitability, shareholder returns and return on assets with relatively little attention to liquidity as the main outcome variable. Secondly, a large part of the existing empirical evidence is from developed economies or other emerging markets with banking structures, regulatory structures, and monetary policy environments that are quite different from those of Kenya, thus limiting the generalization of their findings. Third, the prior studies in Kenya have tended to concentrate on particular elements of interest rate risk such as lending rates or interest margin without a comprehensive assessment of different measures such as interest rate sensitivity, interest rate spread, interbank borrowing and loan to deposit ratio and their combined effect on commercial banks' liquidity. The recent changes in monetary policy and the interest rate environment also mean that there is a need for updated empirical evidence to inform banking practice and regulatory decision making.

Thus, despite the increasing literature on bank risk management, there exists scanty empirical evidence on the effect of holistic measures of interest rate risk on the liquidity of commercial banks in Kenya. Bridging this gap is critical to guide the management strategies of the bank, to strengthen the regulatory policies and to improve the stability and tenacity of Kenya's banking industry. Therefore, the purpose of this study was to investigate how interest rate risk affected Kenyan commercial banks' liquidity.

OBJECTIVE OF THE STUDY

This study's objective was to examine how interest rate risk affected Kenyan commercial banks' liquidity.

Research Hypothesis

H_{01}: Interest rate risk has no significant effect on the liquidity of commercial banks in Kenya.

2. LITERATURE REVIEW

2.1 Theoretical Review

Expectation Theory

The Expectation Theory was developed by John Hicks and then improved by other economists to explain the connection between short-term and long-term interest rates. According to the theory, long-term rates are calculated by averaging present short-term rates and projected future short-term rates. Investors and financial institutions form expectations about future monetary policy and economic conditions. These expectations affect investment decisions, the pricing of financial assets and the allocation of portfolios. This leads to changes in the valuation of the banks' assets and liabilities in line with movements in market interest rates. Hence, commercial banks are exposed to interest rate risk. Commercial banks are in the business of converting short-term obligations into long-term

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investments. Therefore, unanticipated changes in market rate of interest affect the cost of capital, borrowing rates, yields on investments and ultimately the liquidity position of financial institutions. Some financial institutions may anticipate future increases in interest rates and may change their lending and investment practices to reduce the risk of repricing while maintaining adequate liquidity. Therefore, the theory of expectations offers an adequate theoretical framework to explain the impact of expected changes in rates of interest on the liquidity management practices of banks.

Liquidity Preference Theory

In 1936, John Maynard Keynes developed the theory of liquidity preference. It contends that because future interest rates are unknown, investors would rather maintain liquid assets than long-term investments. The idea states that people demand liquidity for speculative, transactional, and precautionary reasons. While lower interest rates encourage retaining liquid balances, the opportunity cost of retaining liquid assets increases with rising interest rates, which encourages investors to purchase interest-bearing instruments. Liquidity preference affects both the reserve management decisions made by commercial banks and the saving and borrowing habits of their clients. Commercial banks must keep enough liquid assets to meet any unplanned withdrawals so that they can optimize income from interest earning assets. This notion is consistent with the link studied in this study and explains why changes in the interest rate have a direct impact on the liquidity positions of banks.

2.2 Empirical Literature Review

Interest Rate Sensitivity and Liquidity

The degree to which a bank's profits and financial worth are affected by changes in market interest rates is known as interest rate sensitivity. Financial institutions that have a significant disparity in the maturity of their obligations and assets are more vulnerable to interest rate fluctuations, which can either strengthen or weaken their liquidity position based on the direction and size of the shift. Empirical data suggests that one of the key components of the financial stability assessment is interest rate sensitivity. Ondari, Maina, and Roche (2024) used panel regression analysis to examine the relationship between interest rate risk and the financial performance of Kenya's commercial banks between 2018 and 2022. The study found interest rate sensitivity as a critical factor in determining financial performance and emphasized the importance of effective asset-liability management. In a similar vein, Jomo, Oluoch, and Nasieku (2025) investigated the interest rate risk exposure of publicly traded commercial banks at the Nairobi Securities Exchange and discovered that, despite a slight improvement in operational efficiency, higher interest rate volatility increased liquidity pressures and decreased market valuation. Outside of Kenya, Rahman and Harun (2025) found that corporate finance choices and liquidity management in Bangladeshi manufacturing firms were significantly impacted by interest rate reforms, suggesting that stable interest rate conditions result in improved institutional liquidity strategies. Kick (2022), on the other hand, demonstrates how European

commercial banks had to deftly rearrange their balance sheets in reaction to changes in interest rates, which increased the production of liquidity. The study's findings show that interest rate sensitivity has a big impact on the banking industry's performance, but it also depends on the overall institutional and regulatory framework.

Interest Rate Spread and Liquidity

The gap between lending and deposit rates is known as the interest rate spread. A large spread affects banks' liquidity situation by discouraging borrowing and deposit mobilization. Kenyan commercial banks' financial performance was severely harmed by wider interest rate spreads brought on by a slowdown in deposit growth and a drop in credit demand (Ronoh, Naibei, and Cheruiyot, 2021). Similarly, Ndiritu, Iraya, Okiro, and Nyandemo (2024) discovered that while interest rate differential had a significant impact on commercial bank performance, liquidity creation had no moderating influence on this relationship. These conclusions are supported by evidence from all throughout the world. As deposit growth slowed and borrowers sought out other sources of funding, wider loan spreads also decreased Bangladeshi commercial banks' liquidity (Sakib, 2020). However, other research indicates that modest interest rate spreads enhance liquidity since they boost banks' net interest income and enable them to accumulate liquid assets. The conflicting data indicates that current market conditions and regulatory frameworks have an impact on the conventional distribution of interest rates and liquidity.

Interbank Borrowing and Liquidity

An essential instrument for controlling liquidity is interbank borrowing, which allows banks that are momentarily short on cash to get funds from surplus institutions. According to Mihia (2023), efficient interbank markets reduce liquidity shocks and improve financial stability by facilitating rapid money redistribution within the banking sector. In a similar vein, the Central Bank of Kenya stated that after monetary policy changes, reserve requirements were lowered and interbank market efficiency increased, improving liquidity distribution across Kenyan commercial banks. The CBK recent loosening of monetary policy serves as another example of how reserve requirements and policy rates are used to promote liquidity in the banking industry. Globally, Qudah (2023) found that by enhancing short-term funding flexibility, interbank borrowing considerably decreased liquidity risk among Middle Eastern commercial banks. However, when interbank markets become illiquid during financial crises, an excessive reliance on interbank borrowing could expose banks to systemic liquidity risk.

Loan-to-Deposit Ratio and Liquidity

The percentage of client deposits used to advance loans is determined by the loan-to-deposit ratio. Increased loan activity but decreased liquidity buffers are typically indicated by higher LDRs. Higher loan-to-deposit ratios considerably decreased banks' liquidity despite increasing profits, according to

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Olaleri et al. (2019). Similarly, Waweru and Oribu (2023) found that judicious credit expansion thru balanced loan-to-deposit ratios enhances liquidity sustainability. Excessive lending in comparison to deposits exposes banks to liquidity challenges, particularly during times of monetary tightening and dwindling client deposits, according to recent Kenyan data.

Interest Rate Risk and Liquidity

An increasing amount of empirical research has looked at the more general connection between banking outcomes and interest rate risk. According to Jialu (2023), interest rate liberalization exposed Chinese commercial banks to market-based interest rate volatility, which considerably raised liquidity risk. Ondari et al. (2024) discovered that the risk of interest rates had a substantial impact on Kenyan commercial banks' financial output and suggested bolstering asset-liability management systems. Additionally, Musani, Ogada, and Bwire (2026) found a strong negative correlation between Kenyan commercial banks' financial outcome and interest rate risk, highlighting how ongoing interest rate volatility reduces earnings and increases balance-sheet risk. In a similar vein, Mutinda, Opuodho, and Ochieng (2026) discovered that risk of interest rate had a substantial impact on Kenyan listed commercial banks' financial performance between 2013 and 2023, highlighting the significance of efficient asset-liability management.

Despite offering insightful information, the majority of these studies assess financial performance rather than liquidity, leaving little proof of the direct impact of interest rate risk on the liquidity of commercial banks.

2.3 Systematic Comparison of Previous Studies

Author(s)	**Country**	**Variable Studied**	**Methodology**	**Findings**	**Research Gap**
Kick (2022)	Europe	Interest rate shocks and liquidity creation	Panel regression	Positive effect	Focused on developed economies.
Jialu (2023)	China	Interest rate liberalization and liquidity risk	Descriptive analysis	Significant positive relationship	Different regulatory environment from Kenya.
Ondari et al. (2024)	Kenya	Interest rate risk and financial performance	Panel regression	Significant relationship	Examined performance rather than liquidity.

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Ndiritu et al. (2024)	Kenya	Interest rate spread and performance	Panel regression	Significant relationship	Liquidity examined only as an intervening variable.
Jomo et al. (2025)	Kenya	Interest rate risk and market value	Longitudinal design	Positive relationship	Focused on market value instead of liquidity.
Musani et al. (2026)	Kenya	Interest rate risk and financial performance	Explanatory design	Significant negative effect	Did not investigate liquidity as the dependent variable.

2.4 Critical Discussion of Literature

There is a broad consensus in the studied literature that interest rate risk has a considerable influence on banking operations. However, previous studies have largely focused on financial performance, profitability, market value and business sustainability rather than liquidity management. Research in Africa has concentrated on profitability and operational efficiency, with little evidence on liquidity outcomes, whereas studies in Europe and Asia reveal that interest rate swings impact liquidity through changes in finance costs and asset valuation.

Moreover, the empirical evidence is still mixed. Some investigations discover negative or insignificant effects while some show a favorable association between interest rate risk and banking performance. Such differences may be due to differences in sample characteristics, macroeconomic conditions, regulatory environment, research methodology and interest rate risk quantification. Most of the existing Kenyan research has also focused on single variables such as loan rates or interest rate spreads rather than a multidimensional measure of interest rate risk.

Methodologically, a few of studies have employed panel-data analyzes relying only on secondary financial statements. Relatively few studies have accounted for numerous dimensions of interest rate risk in a single construct. Also, changes in the operational environment due to recent developments in Kenya's monetary policy and banking rules necessitate new empirical evidence. Using recent data, this paper discusses the joint influence of interest rate sensitivity, interest rate spread, interbank borrowing and loan to deposit ratio on the liquidity of commercial banks in Kenya. This study examines these restrictions.

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2.5 Summary of the Research Gap

Research Gap	**Evidence from Previous Studies**	**How the Current Study Addresses the Gap**
Conceptual gap	Most studies focused on profitability, financial performance, or market value rather than liquidity.	Examines liquidity as the primary dependent variable.
Contextual gap	Much empirical evidence originates from Europe and Asia or focuses on listed Kenyan banks.	Investigates all licensed commercial banks operating in Kenya.
Methodological gap	Previous studies often relied on single indicators of interest rate risk and secondary panel data.	Employs a multidimensional construct comprising interest rate sensitivity, interest rate spread, interbank borrowing, and loan-to-deposit ratio using survey data.
Empirical gap	Existing findings are mixed, with positive, negative, and insignificant relationships reported across settings.	

3. METHODOLOGY

For the research, a quantitative approach was taken, and the positivist research philosophy was utilized to examine how interest rate risk affected Kenyan commercial banks' liquidity. The positivist paradigm was appropriate since it placed a strong emphasis on objective measurement, the testing of hypotheses, and statistical analysis in order to identify the correlations between variables (Saunders et al., 2019). The causal association between interest rate risk and liquidity was ascertained using a cross-sectional explanatory research approach based on data collected at a specific point in time. Studies looking at the causal relationships between financial variables are frequently advised to use this design (Creswell & Creswell, 2018).

As of December 31, 2023, 39 commercial banks with CBK licenses made up the target population. Three senior managers (Branch Manager, Operations Manager, and Credit Manager) were chosen from each bank, resulting in a target population of 117 responders. The sample size of 91 respondents was determined using the sampling formula of Yamane (1967) and the respondents were picked using stratified random selection in an effort to guarantee proportional representation of the banks throughout the three tiers of CBK market. Primary data was collected thru structured questionnaire

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based on five-point Likert scale, interest rate risk was measured using interest rate sensitivity, interest rate spread, interbank borrowing and loan to deposit ratio while liquidity was measured using cash balances, cash to deposit ratio, liquid assets and dividend payout. The questionnaire was verified by specialists for content validity before administration.

With the help of the Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity, the construct validity was validated through the utilization of Exploratory Factor Analysis (EFA). In order to determine whether the data are sufficient for factor analysis, it was determined that a minimum KMO value of.50 and a statistically significant Bartlett's test ($p < .05$) were selected as certain indicators (Hair et al., 2022). Cronbach's alpha coefficient was utilized in order to evaluate the degree of internal consistency exhibited by the measurement scales. According to Hair et al.'s research from 2022, values of 0.70 or higher were determined to present an adequate level of reliability.

IBM SPSS Statistics was used to code and analyze the data. To summarize respondents' opinions of interest rate risk and liquidity, Calculations were made to determine descriptive statistics such as the frequency distribution, percentage breakdown, average, and standard deviation. Inferential analysis used simple linear regression analysis to ascertain the impact of interest rate risk on liquidity and Pearson's correlation analysis to evaluate the direction and strength of the link between variables. The study used a 5% significance level to test the null hypothesis. To make sure the assumptions that are crucial to the ordinary least squares regression method were satisfied, diagnostic tests for normality, multicollinearity, homoscedasticity, and independence of errors were performed prior to regression analysis (Field, 2018).

The following regression model was used to estimate the connection between the variables:

$$\text{Liquidity} = \beta_0 + \beta_1(\text{Interest Rate Risk}) + \varepsilon$$

where β_0 is the intercept, β_1 is the regression coefficient, ε is the random error term, and Liquidity is the dependent variable. Interest Rate Risk is the independent variable, measured as a composite index of its four indicators.

4. RESULTS

4.1 Preliminary Analysis

In order to determine whether or not the data were suitable for multivariate analysis, the KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity were utilized. All of this was done before the hypothesis was tested. The observed variables have enough shared variance for factor analysis when KMO values greater than 0.50 and statistically significant Bartlett's tests are present

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(Hair et al., 2022).

Table 4.1 Kaiser–Meyer–Olkin and Bartlett's Test Results

Variable	KMO	Bartlett's χ^2	df	p
Interest Rate Risk	.585	501.011	66	< .001
Liquidity	.719	1418.093	66	< .001

Note. KMO = Kaiser–Meyer–Olkin Measure of Sampling Adequacy.
Bartlett's tests were statistically significant (p <.001), indicating that the data were suitable for factor analysis and subsequent multivariate analysis, and the KMO values of.585 for interest rate risk and.719 for liquidity above the suggested threshold of.50.

4.2 Descriptive Statistics

To summarize respondents' opinions about interest rate risk and liquidity in commercial banks, descriptive statistics were calculated.

Table 4.2 Descriptive Statistics

Variable	Mean	SD	Interpretation
Interest Rate Risk	3.60	0.40	Agree
Liquidity	4.00	0.42	Agree

Note. Responses were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

The findings show that most respondents believed that interest rate risk affects commercial banks' liquidity (M = 3.60, SD = 0.40). Additionally, respondents strongly agreed that keeping sufficient liquidity was important (M = 4.00, SD = 0.42). A respectable level of agreement among respondents is suggested by the comparatively low standard deviations, which show little variation in responses.

4.3 Correlation Analysis

To ascertain the degree and direction of the relationship between interest rate risk and liquidity, Pearson's product-moment correlation analysis was performed.

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Table 4.3 Pearson Correlation Matrix

Variable	1	2
1. Interest Rate Risk	—	
2. Liquidity	.704***	—

Note. $N = 78$. $^{**}p < .001$.

Interest rate risk and liquidity were shown to be strongly positively correlated (r =.704, p <.001). This suggests that among Kenyan commercial banks, better levels of effective interest rate risk management were linked to higher levels of liquidity. A significant linear relationship between the two variables is suggested by the correlation's size.

4.4 Regression Analysis

The impact of interest rate risk on liquidity was examined using a straightforward linear regression analysis.

Model Summary

Table 4.4 Regression Model Summary

Model	*R*	R^2	Adjusted R^2	SE
1	.819	.670	.652	.249

Note. Dependent variable: Liquidity.

Interest rate risk is a significant predictor of liquidity among commercial banks, as evidenced by the regression model's explanation of 67.0% of the variation in liquidity (R^2 =.670). After accounting for sample size, the adjusted coefficient of determination (Adjusted R^2 =.652) indicates that the model's explanatory power is still high.

Model Significance

Table 4.5 Analysis of Variance (ANOVA)

Source	SS	df	MS	*F*	*p*
Regression	9.156	4	2.289	37.049	< .001
Residual	4.510	73	0.062		
Total	13.667	77			

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Note. Dependent variable: Liquidity.
Interest rate risk strongly explained variance in liquidity, according to the statistically significant regression model ($F(4, 73) = 37.05$, $p < .001$). These results show that the regression model fits the observed data well.

Regression Coefficients

Table 4.6 Regression Coefficients

Predictor	B	SE	β	*t*	*p*
Constant	0.676	0.366	—	1.846	.069
Interest Rate Risk	0.714	0.091	.718	7.884	< .001

Note. Dependent variable: Liquidity.
Liquidity was positively impacted by interest rate risk in a statistically significant way ($\beta = .718$, $B = 0.714$, $t = 7.884$, $p < .001$). Higher levels of liquidity among commercial banks are linked to improvements in interest rate risk management, according to the positive regression coefficient. In particular, the liquidity score increased by 0.714 units for every unit increase in the composite measure of interest rate risk.

4.5 Hypothesis Testing
The following null hypothesis was examined in the study:
H_0: Interest rate risk has no significant effect on the liquidity of commercial banks in Kenya.

Table 4.7 Hypothesis Testing Results

Hypothesis	β	*p*	Decision
H_0: Interest rate risk has no significant effect on liquidity.	.714	< .001	Rejected

Interest rate risk had a significant impact on liquidity, according to the regression results ($\beta = .714$, $p < .001$). The null hypothesis was rejected because the probability value was less than the significance level of 0.05. Thus, the results corroborate the idea that interest rate risk positively and statistically significantly affects Kenyan commercial banks' liquidity.

5. DISCUSSION, CONCLUSION AND IMPLICATIONS

5.1 Discussion

The goal of the study was to determine how interest rate risk affected Kenyan commercial banks'

liquidity. The empirical findings indicate that interest rate risk has a positive and statistically significant impact on liquidity, indicating that banks are better able to retain sufficient liquidity when interest rate swings are effectively managed. Interest rate risk and liquidity had a significant positive link, according to the correlation study ($r = .704$, $p < .001$). According to the regression results, interest rate risk explained 67.0% of the variance in liquidity ($R2 = .670$) and was a significant predictor of liquidity ($\beta = .714$, $p < .001$). These findings imply that commercial banks are better positioned to fulfilll short-term obligations and preserve financial stability if they are adept at controlling interest rate sensitivity, interest rate spreads, interbank borrowing, and loan-to-deposit ratios.

The results support the expectation theory, which holds that anticipated shifts in interest rates have an impact on financing and investment choices. In order to sustain liquidity, commercial banks modify their lending, deposit mobilization, and asset-liability management strategies in response to expected fluctuations in interest rates. Banks can optimize funding structures and reduce liquidity constraints brought on by unfavorable market conditions by effectively managing interest rate risk.

Additionally, the outcomes align with earlier empirical research. Kick (2022) discovered that commercial banks used more efficient balance sheet modifications to increase liquidity in response to interest rate shocks. The liquidity risk of Chinese commercial banks was also significantly impacted by interest rate liberalization (Jialu, 2023). Effective interest rate risk management has been linked to improved banking performance in Kenya (Ondari et al., 2024). When taken as a whole, this research supports the notion that rigorous interest rate risk management improves banks' resilience and liquidity position.

However, the findings go counter to research that suggested widening interest rate spreads had a detrimental impact on banking performance. High interest rate spreads deterred borrowing and had a detrimental effect on Kenyan commercial banks' financial performance, according to Ronoh et al. (2021). The variances can be attributed to the regulatory structure, the macroeconomic conditions, the time periods considered, and the indicators used to assess interest rate risk. This study provides more comprehensive evidence of the connection between interest rate risk and bank liquidity by using liquidity as the main dependent variable and a multidimensional measure of interest rate risk. Prior research has mostly examined market worth or profitability.

5.2 Conclusion

The study concludes that interest rate risk is one of the factors that affect liquidity of commercial banks in Kenya. The positive regression coefficient shows that banks' liquidity situations and their ability to meet financial obligations grow for a good management of interest rate sensitivity, interest rate spread, interbank borrowing and loan-to-deposit ratios. The results also indicate that careful

interest rate risk management increases the stability of the banking sector as a whole through the accumulation of liquidity buffers and reduced exposure to market fluctuations. Commercial banks should embed strong interest rate risk management practices into their strategic decision-making to enable long-term liquidity management and financial resilience.

5.3 Practical Implications

The findings have important implications for bank management and regulators. Commercial banks should strengthen asset-liability management frameworks, adopt proactive pricing strategies that balance profitability and liquidity objectives, and closely monitor interest rate risks. Maintaining a reasonable loan-to-deposit ratio and an optimal interest rate spread can boost liquidity while lowering exposure to interest rate volatility. Additionally, the findings provide empirical information that could assist the Central Bank of Kenya in developing monetary policies and regulatory frameworks that enhance liquidity management and support the stability of the financial system.

5.4 Theoretical Contribution

The study broadens the application of the Expectation Theory in the context of commercial banking by demonstrating that expectations about future interest rate variations have a significant impact on banks' liquidity management measures. It contributes to the growing corpus of research on financial risk management by providing empirical evidence that interest rate risk is a substantial predictor of liquidity in commercial banks operating in emerging economies as well as a factor of financial performance.

5.5 Policy Implications

The results emphasize the need for lawmakers and banks regulators to continue enforcing stricter prudential rules for interest rate risk management. The Kenyan Central Bank should support commercial banks in creating interest rate risk monitoring systems, conducting regular stress tests, and maintaining sufficient liquidity buffers that can survive adverse monetary policy shocks. Such actions would reduce systemic liquidity risk and strengthen the banking industry's resilience.

5.6 Limitations of the Study

The study's dependence on cross-sectional primary data collected from commercial banks operating in Kenya at a particular point in time hampered its ability to capture dynamic changes in interest rate risk and liquidity throughout numerous economic cycles. Furthermore, because the findings are specific to the Kenyan banking sector, they might not be instantly transferable to other financial systems with different institutional and regulatory frameworks.

5.7 Recommendations for Future Research

Future studies should examine the long-term effects of interest rate risk on liquidity during different economic cycles using longitudinal or panel data approaches. Researchers may also look at the moderating effects of macroeconomic variables like inflation, monetary policy rate, exchange rate volatility, or bank size on the relationship between interest rate risk and liquidity. Research comparing East African countries would enhance understanding of how institutional and regulatory differences impact liquidity management in the banking industry.

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