



NEXUS BETWEEN INTEREST RATE RISK AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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Article DOI: <https://doi.org/10.36713/epra30306>

DOI No: 10.36713/epra30306

ABSTRACT

Commercial banks play a critical role in promoting economic growth through financial intermediation, credit creation, and efficient allocation of financial resources. However, fluctuations in interest rates continue to pose significant challenges to bank profitability and financial sustainability. Interest rate risk affects the value of bank assets and liabilities, influences net interest income, and may ultimately impact overall financial performance. This study examined the nexus between interest rate risk and the financial performance of commercial banks in Kenya. The study was anchored on the Interest Rate Expectations Theory, which posits that current interest rates reflect market expectations of future rates and consequently influence financial decisions and performance outcomes. A longitudinal research design was adopted, targeting all 38 commercial banks licensed by the Central Bank of Kenya. Secondary data were collected from audited annual reports and financial statements for the period 2020–2024. Descriptive statistics were used to summarize the characteristics of the study variables, while panel multiple regression analysis was employed to establish the relationship between interest rate risk and financial performance. The findings revealed that interest rate risk exhibited moderate variability across commercial banks during the study period. Regression results indicated that interest rate risk had a positive but statistically insignificant effect on financial performance ($\beta = 0.0147, p > 0.05$), suggesting that fluctuations in interest rates did not significantly influence the profitability of Kenyan commercial banks. The study concludes that effective interest rate risk management practices may have moderated the potential adverse effects of interest rate movements on bank performance. The study recommends strengthening asset-liability management frameworks, enhancing interest rate forecasting capabilities, and adopting advanced risk management technologies to improve financial performance and resilience within the banking sector.

KEYWORDS: Interest Rate Risk, Financial Performance, Commercial Banks, Interest Rate Expectations Theory, Asset-Liability Management, Kenya.

1. INTRODUCTION

The banking sector plays a critical role in economic growth through financial intermediation, capital mobilization, and the provision of credit to households and businesses. In Kenya, the financial services sector contributes significantly to economic development, accounting for approximately 8.4 percent of Gross Domestic Product (GDP), with commercial banks serving as the primary channel for credit creation and financial intermediation (Central Bank of Kenya [CBK], 2023). According to Muhabie (2015), the performance of commercial banks is an important indicator of economic progress because banks influence the flow of money and investment within an economy. Consequently, financial performance remains a key concern for regulators, investors, shareholders, and bank managers due to its implications for financial stability and sustainable economic growth.

Financial performance reflects the extent to which an organization achieves its financial objectives and generates returns from its resources (Andrija & Filip, 2017). In the banking sector, performance is commonly assessed using profitability indicators such as Return on Equity (ROE), which measures the efficiency with which a bank utilizes shareholders' funds to generate profits (Kamwaro, 2013). According to Myskova and Hajek (2017), financial ratios such as ROE provide valuable insights into a firm's financial health and its ability to create value for investors. Consequently, ROE has become one of the most widely used indicators for evaluating the financial performance of commercial banks.

Despite their importance to economic development, commercial banks operate in an environment characterized by various financial risks that may adversely affect profitability. Among these risks, interest rate risk remains one of the most significant because commercial banks derive a substantial proportion of their income from interest-earning assets. Interest rate risk refers to the possibility that changes in market interest rates may adversely affect a bank's earnings, asset values, and overall financial performance (Chen, 2020). Fluctuations in interest rates influence borrowing and lending



rates, net interest margins, and the valuation of financial assets and liabilities, thereby affecting bank profitability (Djebali & Zaghoudi, 2020).

Empirical evidence regarding the relationship between interest rate risk and financial performance remains inconclusive. Kolapo and Fapetu (2015) found that interest rate risk had an insignificant effect on the performance of deposit money banks in Nigeria. Conversely, Odeke and Odongo (2014) established that interest rate risk explained a significant proportion of performance variation among commercial banks in Uganda. In Kenya, studies by Ngalawa and Ngare (2013), Maigua and Mouni (2016), and Wambari and Mwangi (2017) reported significant relationships between interest rate fluctuations and bank performance. These mixed findings suggest that the effect of interest rate risk may vary across countries and banking environments.

The Kenyan banking sector has continued to experience fluctuations in financial performance despite regulatory reforms implemented by the Central Bank of Kenya to enhance stability and strengthen risk management. CBK reports indicate that sector Return on Equity declined from 24.4 percent in 2016 to 13.9 percent in 2020, while several commercial banks reported losses and weak profitability during the same period (CBK, 2021). Furthermore, eight banks recorded losses in 2022, while approximately 42 percent of the sector registered returns on assets of one percent or less (CBK, 2023). These trends raise concerns regarding the factors influencing profitability and the extent to which interest rate risk contributes to variations in financial performance.

Although previous studies have examined the relationship between interest rate risk and financial performance, their findings remain inconsistent, and much of the existing evidence was generated under different economic conditions. Moreover, recent changes in monetary policy and interest rate movements in Kenya necessitate updated empirical evidence. This study therefore sought to examine the nexus between interest rate risk and financial performance of commercial banks in Kenya, with financial performance measured using Return on Equity (ROE).

A profitable and stable banking sector is essential for sustainable economic growth and financial system resilience. Despite regulatory reforms implemented by the Central Bank of Kenya to strengthen risk management and enhance financial stability, the financial performance of commercial banks has exhibited fluctuations over recent years. Declining profitability among some banks, coupled with variations in Return on Equity (ROE), raises concerns regarding the factors influencing bank performance.

Interest rate risk remains one of the most important risks facing commercial banks because fluctuations in market interest rates directly affect lending rates, funding costs, net interest margins, and earnings. Although several studies have investigated the relationship between interest rate risk and financial performance, empirical findings remain mixed and inconclusive. While some studies report significant effects, others find weak or insignificant relationships. In addition, much of the existing evidence is based on different economic contexts and periods, limiting its applicability to the current Kenyan banking environment.

Consequently, there is insufficient consensus regarding the extent to which interest rate risk affects the financial performance of commercial banks in Kenya. This study addresses this gap by examining the effect of interest rate risk on the financial performance of commercial banks in Kenya during the period 2020–2024.

2. LITERATURE REVIEW

2.1 Theoretical Review

This study is anchored on the Interest Rate Expectations Theory, which originates from Keynes' expectations proposition and was later formalized in the Expectations Theory of the Term Structure of Interest Rates. The theory posits that long-term interest rates are determined by current and expected future short-term interest rates. According to Mankiw (2010), market participants form expectations regarding future interest rate movements, and these expectations are incorporated into current financial decisions and asset pricing. Consequently, anticipated changes in interest rates influence borrowing costs, lending rates, investment decisions, and the valuation of financial assets and liabilities.

The theory provides a useful framework for explaining the relationship between interest rate risk and financial performance in commercial banks. Since banks derive a substantial proportion of their income from interest-earning assets, changes in interest rate expectations affect net interest margins, funding costs, and profitability. When interest rates fluctuate unexpectedly, banks may experience mismatches between interest-sensitive assets and liabilities, leading to variations in earnings and shareholder returns. The theory therefore suggests that effective anticipation and management of interest rate movements can enhance financial performance, while adverse interest rate changes may reduce profitability. In this study, Interest Rate Expectations Theory explains how exposure to interest rate risk influences the financial performance of commercial banks in Kenya as measured by Return on Equity (ROE).



2.2 Interest rate risk and financial performance of commercial banks

Kolapo and Fapetu (2015) in their study used a sample of six tier 1 capital banks to investigate the impact of interest rate risk on the performance of DMBs in Nigeria between the years 2002 and 2011. Regression analysis using average lending ratio, risk of interest diversity, and loans to asset ratio were used as indexes of interest rate risk determines, to determine their effect on return on assets, which was used as the indicator of performance of banks. Each interest rate risk metric was shown to have no discernible impact on bank performance through the application of the fixed effect regression approach in the study. The study also established that interest rate risk had little influence on bank performance because it only occasionally influences changes in return on assets. The study found that interest rate risk had little effect on banks' financial performance. The study was conducted in Nigeria while the current study was conducted in Kenya so as to fill geographical research gap.

Abdellahi et al. (2017) in a study carried out in the Middle East and North Africa, sort to establish the potential effects of market risk, liquidity risk, and interest rate risk on financial performance metrics. The study included eight banks that were listed on the Tehran Stock Exchange (TSE). Verified stationary data from the panel dataset were used in the data analysis, and the panel data estimation approach was employed to estimate the research model using the E-views software. Based on the findings, it was established that interest rate risk significantly affected return on assets. This was not the case, though, when it came to the relationship between market risk and liquidity risk, and return on assets. It was also established that there was no significant correlation between liquidity risk and return on investment, while there was significant correlation between interest rate and market risk. Lastly, with 95% confidence, the ratio of net profit to total sales was significantly impacted by interest rate risk, liquidity risk, and market risk. Return on Investment served as a measure of financial performance. The current study is being undertaken in commercial banks in Kenya, due to difference in economic and social structure of Kenya with Middle East and North Africa. The researcher also measured financial performance using Return on Equity based on declining financial performance in commercial banks in Kenya.

A study on interest rate risk exposure and the financial performance of Ugandan commercial banks was conducted by Odeke and Odongo (2014). Financial ratios from DuPont analysis of commercial banks were utilized to analyze and evaluate data from a sample size of nine commercial banks in this cross-sectional survey study utilizing a descriptive research approach. The study discovered that the financial performance of commercial banks is impacted by interest rate risk. The study discovered that up to 14.5% of the variations in the bank's financial performance could be explained by the combined fluctuation of interest rate risk components, which are composed of maturity gaps, basis risk, and assets and liabilities margin. The financial performance is positively impacted by maturity gaps, assets, and liabilities, but basis risk has no discernible effect. The current study was done in Kenya and used longitudinal research design rather than cross-sectional research design because it examined the effect of time and between commercial banks.

Ndegwa et al. (2016) studied the influence of interest rate on financial performance of MFIs in Imenti North Sub County, Kenya. The study adopted a descriptive research design and its target population was 42 respondents which included all the branch managers, operational managers and credit managers of the 14 microfinance institutions operating in Imenti North Sub-County. This study utilized both primary and secondary data. Both descriptive and inferential methods were used in data analysis. Descriptive methods included measures of central tendency measures of dispersion. Inferential statistics included measures of relations and associations, correlation and egression. The study discovered that interest rate risk affects MFIs' financial performance because liquidity, a key indicator of financial performance, is impacted by interest rates. The current study was done in commercial banks in Kenya and used secondary data.

The impact of interest rates on the financial performance of Kenyan commercial banks was examined by Wambari and Mwangi (2017). The study utilized an explanatory research methodology, selecting all 43 of Kenya's commercial banks through a census. The study made use of secondary data, which were analyzed using SPSS version 20 and a multiple linear regression model. The study found that lending rate ratios have a positive impact on commercial banks' financial performance. Conversely, the deposit interest ratio has a detrimental effect on commercial banks' performance. Positive performance is influenced by liquidity management. The current study used 38 commercial banks which are stable and not under receivership which ensured complete records.

Researchers Ngalawa and Ngare (2013) examined interest rate risk management for Kenyan commercial banks by examining interest rate sensitivity gaps found in financial reports for ten banks that were listed between 2008 and 2012 on the Nairobi Securities Exchange. The research findings indicate that a bank's balance sheet structure is contingent upon its exposure to interest rate risk and/or income gap. They discovered, in particular, that commercial banks in Kenya usually maintain a significant exposure to interest rates, which are anticipated by the disparity in income. Additionally, they established, using treasury instruments, how sensitive income gaps were to market interest rates as defined by the CBK. Quantitatively, a 200 basis point shift in CBK rates would result in a change in net income equal to 0.4% of the bank's total assets. In order to draw definitive conclusions, the current study made use of secondary data from all of Kenya's commercial banks from 2020 to 2024.



Maigua and Mouni (2016), investigate the influence of interest rate determinants on the performance of commercial banks in Kenya. The interest rates determinants that were studied are Inflation Rates, discount rates, Exchange Rate and reserve requirement to determine the influence they have on performance of banks. The target population of the study was all 43 commercial banks operating in Kenya. The sample size was 26 commercial banks obtained from the population. The data analysis technique applied in this study was the multiple regression analysis. The findings demonstrated that reserve requirement ratio had a negative impact on commercial bank performance, while discount rates, inflation rates, and exchange rates had positive effects. Through the use of a longitudinal research design, the current study ascertained the relationship between interest rate risk and the financial performance over five years rather than determinants of interest rate.

Bengi and Njenje (2016) assessed the financial factors (viz. financial literacy and interest rates influence) affecting the growth of microfinance institutions (MFIs) in Bahati Sub-county, Kenya. The study was guided by stage theories of growth, models of organizational capabilities, and Greigner's growth model. The study adopted descriptive research design. The study targeted all the 117 employees working with the 20 MFIs in Bahati Sub-county. A sample of 54 respondents was drawn using stratified random sampling. Data collected through structured questionnaire was analyzed using SPSS employed descriptive and inferential statistics. According to study results, interest rates have an impact on banks' expansion. The demand for the credit facility that is issued is significantly influenced by the interest rate that banks charge. The development is negatively impacted by interest rates, according to the study. The current study adopted longitudinal research design rather than descriptive research design where cross-sectional design was incorporated.

Kariuki and Ngahu (2016) examined the effect of interest rates on loan performance of MFIs in Naivasha Sub-County. The study was limited to the five MFIs in Naivasha sub-County. The study adopted descriptive research design. The target population comprised of 36 employees. Census design was employed. The study used a structured questionnaire to collect data. Data analysis was facilitated by the use of SPSS. Both descriptive and inferential statistics were used. The study established that default risk premium and liquidity risk premium negatively affected loan performance. Interest rates were found to substantially influence loan performance. It was concluded that MFIs faced default on loans advanced which was attributed to risky borrowing. It was inferred that MFIs faced liquidity risk. The study however relied on the manager's responses only without subjecting the test to financial analyses causing a methodological gap. The study used financial risk measures of liquidity risk and default risk as a measure of interest rate risk which causes a conceptual gap.

3. METHODOLOGY

This study adopted a positivist research philosophy, which assumes that financial phenomena such as interest rate risk and financial performance can be objectively measured using quantitative data. The positivist approach supports hypothesis testing and statistical analysis of observable financial indicators. A correlational and longitudinal research design was employed to examine the relationship between interest rate risk and financial performance of commercial banks in Kenya over the period 2020–2024. The longitudinal design enabled the study to capture variations in interest rate risk exposure and corresponding changes in bank performance over time without manipulating the study variables.

The target population comprised all 38 licensed commercial banks in Kenya as at 2024, as regulated by the Central Bank of Kenya (2024). A census approach was adopted to ensure complete coverage of the banking sector, enhancing the reliability and generalizability of findings. The study utilized secondary data extracted from audited annual financial statements and Central Bank of Kenya reports. Interest rate risk was operationalized using financial ratio-based proxies derived from banks' interest-sensitive income and expense structures, while financial performance was measured using Return on Equity (ROE), which reflects the ability of banks to generate returns from shareholders' equity.

Panel data covering the 2020–2024 period were compiled by combining cross-sectional (banks) and time-series (annual) observations. The data were analyzed using descriptive statistics and panel regression analysis in STATA. The choice of panel estimation techniques allowed for controlling unobserved heterogeneity across banks while assessing the dynamic effect of interest rate risk on financial performance. The general econometric model specified financial performance as a function of interest rate risk, expressed as:

$$FP_{it} = \beta_0 + \beta_1 IRR_{it} + \varepsilon_{it}$$

where FP represents financial performance (ROE), IRR represents interest rate risk, β_0 is the intercept, β_1 is the slope coefficient, and ε_{it} is the error term.

Diagnostic tests including stationarity, normality, multicollinearity, heteroscedasticity, and autocorrelation were conducted to ensure robustness of the regression estimates. Based on the Hausman specification test, the random effects model was found appropriate for estimating the relationship between interest rate risk and financial performance, as it efficiently captures both within- and between-bank variations over time.

4. RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics for Interest Rate Risk and Financial Performance

This section presents the descriptive statistics for the key study variables, namely interest rate risk (IRR) and financial performance (FP). The analysis is based on a balanced panel dataset comprising 38 commercial banks observed over a five-year period (2020–2024), yielding 190 observations. The statistics reported include measures of central tendency (mean), dispersion (standard deviation), and distributional characteristics.

Table 1: Descriptive Statistics for IRR and FP

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
IRR	1.808	0.745	0.991	5.640	3.082	13.101
FP	0.000	0.793	-5.886	1.277	-3.677	22.674

The results indicate that interest rate risk (IRR) has a mean value of 1.808, suggesting a moderate level of exposure to interest rate fluctuations across commercial banks in Kenya. The standard deviation of 0.745 implies noticeable variation in interest rate risk among banks and over time, reflecting differences in asset-liability structures and sensitivity to interest rate movements. The minimum value of 0.991 and maximum value of 5.640 indicate substantial heterogeneity in exposure levels, with some banks experiencing significantly higher sensitivity to interest rate changes than others.

The skewness coefficient of 3.082 shows that IRR is positively skewed, implying that most banks exhibit relatively lower levels of interest rate risk, while a few institutions record exceptionally high exposure. The kurtosis value of 13.101 indicates a leptokurtic distribution, characterized by heavy tails and the presence of extreme values. This suggests that interest rate risk is unevenly distributed across the banking sector, with occasional extreme exposure levels that may significantly influence overall risk patterns.

Financial performance (FP), measured as a composite index derived from standardized Return on Equity (ROE) and Return on Assets (ROA), records a mean of 0.000 due to normalization. The standard deviation of 0.793 indicates considerable variability in financial performance across banks and over time, reflecting differences in profitability, efficiency, and operational outcomes within the sector. The minimum value of -5.886 indicates that some banks experienced severe underperformance or losses during the study period, while the maximum value of 1.277 reflects periods of strong financial performance among top-performing institutions.

The skewness value of -3.677 indicates a strongly negatively skewed distribution, implying that financial performance is concentrated toward higher values, with a small number of banks experiencing extreme negative outcomes. The kurtosis value of 22.674 confirms a highly leptokurtic distribution, indicating extreme outliers and significant dispersion in performance outcomes. This suggests that while a number of banks maintain stable or positive financial performance, a few institutions experience substantial instability, which significantly affects the overall distribution of financial performance in the Kenyan banking sector.

Overall, the descriptive results reveal that both interest rate risk and financial performance exhibit significant variability and non-normal distributional characteristics. Interest rate risk is characterized by concentration at lower levels with occasional extreme exposures, while financial performance shows pronounced disparities driven by extreme underperformance in some banks. These distributional properties indicate heterogeneity in both risk exposure and profitability across commercial banks in Kenya, providing a strong justification for the application of robust panel data econometric techniques in subsequent analysis.

4.2 Inferential Statistics

Inferential analysis was conducted to examine the relationship between interest rate risk (IRR) and financial performance (FP) of commercial banks in Kenya. The analysis is based on panel regression techniques, allowing inference from the sampled banks to the wider population of commercial banks over the study period (2020–2024). The section focuses on hypothesis testing using a simple random-effects GLS regression model.

A simple linear regression model was estimated to determine the effect of interest rate risk on financial performance of commercial banks in Kenya.

H₀: There is no statistically significant relationship between interest rate risk and financial performance of commercial banks in Kenya.

Table 2: Regression Results for IRR and Financial Performance

Variable	Coefficient (β)	Std. Error	z-value	p-value	95% CI
IRR	0.0147	0.0967	0.15	0.879	[-0.1748, 0.2042]
Constant	-0.0266	0.2133	-0.12	0.901	[-0.4446, 0.3914]



The regression results indicate that interest rate risk has a positive but statistically insignificant effect on financial performance ($\beta = 0.0147$, $p = 0.879$). This suggests that although an increase in interest rate risk is associated with a marginal increase in financial performance, the relationship is not statistically different from zero at the 5% significance level. The confidence interval further confirms this outcome, as it includes zero, indicating uncertainty in the direction and magnitude of the effect.

Based on these results, the null hypothesis (H_{01}) is not rejected. Therefore, interest rate risk does not have a statistically significant influence on the financial performance of commercial banks in Kenya over the period 2020–2024.

The insignificance of interest rate risk suggests that commercial banks in Kenya may have developed effective mechanisms for managing exposure to interest rate fluctuations. These may include asset-liability matching strategies, repricing structures, and internal hedging practices that reduce sensitivity of earnings to interest rate movements. Additionally, regulatory oversight by the Central Bank of Kenya may have contributed to stabilizing interest rate conditions, thereby limiting the transmission of interest rate volatility into bank profitability.

From a theoretical standpoint, the finding is consistent with the Expectations Theory of Interest Rates, which posits that current interest rates already incorporate market expectations of future rates. This implies that rational financial institutions anticipate interest rate movements and adjust pricing and portfolio structures accordingly, thereby neutralizing their impact on financial performance.

Empirically, the results align with studies such as Kolapo and Fapetu (2015), who found no significant relationship between interest rate risk and bank performance in Nigeria, and Ngalawa and Ngare (2013), who reported minimal impact of interest rate sensitivity on Kenyan commercial banks. These findings suggest that in well-regulated banking systems, interest rate risk may be partially absorbed through internal risk management frameworks.

However, the results contrast with studies such as Abdellahi et al. (2017) and Odeke and Odongo (2014), which reported significant effects of interest rate risk on bank performance in other regions. These differences may be attributed to variations in financial market structures, regulatory environments, and risk management sophistication across jurisdictions.

Overall, the results indicate that interest rate risk is not a key determinant of financial performance among commercial banks in Kenya during the study period, suggesting a relatively muted transmission channel between interest rate fluctuations and profitability outcomes.

5. CONCLUSION AND DISCUSSION

5.1 Conclusions of the Study

The study concludes that interest rate risk does not have a statistically significant relationship with the financial performance of commercial banks in Kenya. Although banks exhibit varying levels of exposure to interest rate fluctuations, these variations do not translate into measurable differences in profitability over the study period. This implies that interest rate movements are largely absorbed within the banking system without materially affecting financial outcomes.

The absence of a significant relationship further suggests that commercial banks in Kenya have developed effective mechanisms to manage interest rate exposure. Practices such as asset–liability matching, repricing strategies, and use of interest rate risk management tools, together with regulatory oversight by the Central Bank of Kenya, appear to mitigate the transmission of interest rate volatility into financial performance. Overall, the findings point to a relatively resilient banking sector in managing interest rate risk.

5.2 Recommendations of the Study

The study recommends that commercial banks should continue strengthening their interest rate risk management frameworks to sustain resilience against future interest rate fluctuations. This includes enhancing asset–liability management systems, improving duration gap monitoring, and adopting more sophisticated risk measurement techniques to better anticipate interest rate movements.

In addition, banks should expand the use of hedging instruments such as interest rate swaps and other derivatives where appropriate, to further reduce exposure to unexpected rate changes. Continuous compliance with regulatory guidelines and proactive risk governance structures should also be maintained to ensure long-term financial stability and consistent performance across varying interest rate environments.



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