

**EXCHANGE RATE RISK AND FINANCIAL PERFORMANCE OF DEPOSIT TAKING SAVINGS
AND CREDIT COOPERATIVE SOCIETIES IN KENYA**

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Accepted: June 4, 2026

ABSTRACT

In Kenya's financial system, Deposit-Taking Savings and Credit Cooperative Societies (DT-Saccos), are of key importance because they offer their members essential financial services. This study looked at how DT-Saccos' financial performance is affected by exchange rate risk. The study is anchored on deflation theory. A sample of 122 DT-Saccos was chosen from the target population, which consisted of 175 DT-Saccos. The study made use of secondary data that was gathered using a data extraction tool from DT-Saccos's annual audited financial reports for the years 2020 to 2024. Panel multiple regression analysis was used to analyse the collected data with the help of SPSS Version 30. The findings revealed that DT-Saccos's financial performance in Kenya was significantly affected by exchange rate risk. Therefore, the study suggests that in order to reduce exchange rate risk, the government should implement appropriate fiscal and monetary policies nationwide. The DT-Saccos CEOs should employ mechanisms of identifying exchange rate risk to enable them to put necessary measures to mitigate them. This study contributes to the growing body of literature on financial risk management and provides actionable insights for DT-Sacco managers, and Stakeholders seeking to improve the sustainability and profitability of financial cooperatives in developing economies

Keywords: Exchange Rate Risk, Financial Performance, Deposit Taking Savings and Credit Cooperative Societies in Kenya

CITATION: Nyaga C. K., Ochieng', I. L., & Roche. C. (2026). Exchange rate risk and financial performance of deposit taking savings and credit cooperative societies in Kenya. *Reviewed Journal International of Financial Management*, 7 (1), 84 – 94.

BACKGROUND OF THE STUDY

Financial markets have suffered significant volatility in the last ten years because of changes like globalization and complicated business settings that need companies to consider factors other than profitability. This can be ascribed to challenges in the value chain, as well as changes in the political, economic, social, and technological environments, which forces businesses to set up robust risk management systems. Businesses are nevertheless susceptible to a variety of risks in the ever evolving and demanding business environment, particularly considering the unfavourable changes in the macroeconomic landscape and heightened competition.

Exchange rate risk refers to the potential for financial loss arising from fluctuations in foreign currency exchange rates, which can affect the value of a firm's foreign-denominated assets, liabilities, or transactions (Madura, 2015). For DT-Saccos that engage in foreign currency transactions, hold foreign-denominated investments, or have obligations in foreign currency, exchange rate movements can significantly impact profitability and financial performance. One widely used approach to quantify exchange rate risk is Value at Risk (VaR), which estimates the maximum potential loss over a specified time horizon at a given confidence level (Jorion, 2007).

VaR provides a probabilistic measure of risk, capturing both the magnitude and likelihood of potential losses due to adverse currency movements. Measuring exchange rate risk using VaR is important because it allows DT-Sacco managers and regulators to assess potential exposure under extreme market conditions, implement hedging strategies, and ensure sufficient liquidity buffers. By quantifying the potential impact of currency volatility on assets and liabilities, VaR helps in informed decision-making, portfolio management, and compliance with regulatory frameworks that emphasize prudent risk management (Jorion, 2007; Madura, 2015).

Statement of the Problem

Effective management of any business hinges on accurately assessing its financial performance (Franco-Santos, Lucianetti, and Bourne, 2012). Financial performance reflects how well an organization achieves its financial objectives (Harrison, 2015). For DT-Saccos to optimize member benefits, their management must focus on improving financial performance (Nkuru, 2015). Long-term gains in the performance and profitability of DT-Saccos not only ensure the profit of investors but also promote additional investment, stimulating economic growth. In Kenya, where more than 60% of the population, or 6.3% of Kenyans, rely on DT-Saccos for financial intermediation (FinAccess, 2022), these organizations are pivotal to the country's financial system. However, the financial performance of DT-Saccos in Kenya has been inconsistent over the past five years. According to the Sacco supervision annual reports (SASRA, 2024), key profitability indicators have been erratic, with Return on Assets (ROA) fluctuating significantly. ROA decreased to 2.40 percent in 2020 from 2.45 percent in 2019. It then increased slightly to 2.60 percent in 2021 and 2.65 percent in 2022 before falling to 1.59 percent in 2023 and 1.48 percent in 2024. This results in an average ROA of 2.14% over five years, below the recommended 5% threshold (Forbes, 2018). Although a number of studies have looked at market risks in various economic sectors, there is a dearth of research that focuses specifically on how market risks like inflation and equity risks affect DT-Saccos' financial performance. Odeke and Odongo (2014), for example, Parlak and Ilhan (2016) concentrated on how exchange rate risk affected the Turkish industrial and service sectors. Additionally, Muriithi, Muturi, and Waweru (2016) explored exchange rate risk in Kenyan commercial banks but did not include DT-Saccos in their analysis. There is a noticeable gap in the literature regarding the relationship between exchange rate risk and the financial performance of DT-Saccos in Kenya. The divergent conclusions of Yousif (2012) and Muriithi, Muturi, and Waweru (2016) further highlight this gap by expressing differing opinions about how well exchange rate risk management can improve financial performance. Despite abundant research on banks, microfinance institutions, insurance companies, and manufacturing sectors, limited studies have specifically addressed how exchange rate risk

influence the financial performance of DT-Saccos. Thus, the purpose of this study is to look into how exchange rate risk impact DT-Saccos' financial performance in Kenya.

Objectives of the Study

The general objective of this study was to determine the effect of exchange rate risk on financial performance of DT-Saccos in Kenya.

Research Hypothesis

H₀₁: Exchange rate risk has no significant effect on the financial performance of DT Saccos in Kenya.

LITERATURE REVIEW

The section provides an outline of the study's theoretical and empirical literature.

Theoretical Review

The theoretical justification for the relationship between exchange rate risk and DT-Saccos's financial performance in Kenya is examined in this section.

Deflation Theory

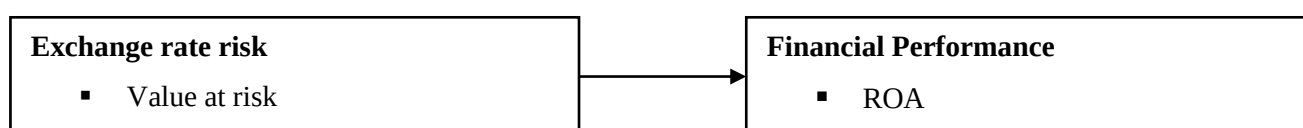
Fisher proposed the deflation theory in 1933. According to the theory, a decrease in inflation rates leads to a decrease in the general price level, which reduces the net value and profitability of the company. According to the theory, persistent price inflation is caused by an excessive increase in the amount of money in circulation. It explains how the relationship between the supply of money and the demand for money determines the overall price level. The theory explains how supply and demand, the two most basic economic processes, relate to inflationary trends. Because the classical theory of inflation permits an independent analysis of inflation without reference to unemployment rates or other macroeconomic factors, the neoclassical theory of inflation is incredibly helpful (Dvali & Gomez, 2014).

The theory of deflation is valuable as it demonstrates that the decrease in the purchasing power of money as a result of central bank policy actions leads to inflation. Baumann and McAllister (2015)'s research focuses on hyperinflation episodes that have occurred throughout history and at various periods in the world's economic history. Every scenario in which the yearly rate of inflation exceeds 100% is accompanied by a sharp increase in the money supply. Baumann and McAllister (2015) posit that the central bank's intervention to curb monetary expansion is the ultimate cause of hyperinflation.

This hypothesis guided the research, stating that fixed-income customers' purchasing power is diminished during high inflationary times because money loses value. Paul and Conroy (1998), on the other hand, argue that excessive inflation results in a devaluation of currency, which lowers the purchasing power of money and erodes its worth. Their argument challenges this approach. Furthermore, it lowers real revenues and raises operating expenses and interest rates, which in turn lowers demand for items in the economy. The price of production goes up as well as inflation. The DT-Saccos' performance can be impacted by this, and the conserving power is decreased. The theory is applicable to this study since it states that high inflation rates will result in high profits and revenues for DT-Saccos, which will improve their financial performance.

Conceptual Framework

Figure 1 depicts the conceptual framework that explains the relationship between exchange rate risk and DT-Saccos' financial performance in Kenya.



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Empirical Literature Review

Currency swings are significant when businesses make cross-border transactions more frequently. The financial risk that a business assumes when conducting transactions on various fronts as a result of exchange rate variations is known as exchange rate risk. Reducing a company's risk requires careful measurement and management of exchange rate risk. Therefore, in order to decide how best to shield their companies from these risks, financial managers need to establish methods that can quantify the risks associated with exchange rate swings (Ahmed, 2015).

Hoque (2015) investigated how Bangladeshi Islamic banks handled exchange rate risk. Both primary and secondary data were used in the study. The findings demonstrated that banks' approaches to managing exchange rate risk, and their choice of hedging tools varied significantly. According to the study, transaction risk was the most frequently used exchange rate, whereas forwards and netting were the most widely used instruments. Hedging was occasionally used by businesses to control exchange rate risk. The procedure is highly costly.

Mbabazize, Daniel, and Ekise (2014) analyzed how managing foreign exchange risk affects corporate performance in Uganda. The study was based on cross-sectional and descriptive study designs and a target size of 51 companies in the export sector. SPSS was used to analyze the data, and tables and graphs were used to display the findings. The study also used Spearman's rank correlation coefficient to examine the relationship between exchange rate risk and companies' mitigation practices and performance. Regression analysis revealed a strong positive relationship between companies' performance and the exchange rate.

Nzioka (2017) investigated the connection between non-bank entities listed on the Nairobi Security Exchange (NSE) and their financial performance when it came to foreign exchange risk hedging. Using an open-ended and closed-ended questionnaire, the study gathered primary data from a sample of 49 non-banking enterprises listed on the NSE. After that, SPSS and a descriptive design were used to analyze the data. Multiple regression analysis was employed in the study to ascertain the degree to which hedging activities affected the financial performance of the organizations. The findings demonstrated that the financial performance of non-financial organizations was significantly impacted by interest rates, inflation, and internal and external hedging strategies. Of the performance, the independent variables accounted for 75.5%, while external influences accounted for the remaining 24.5%

METHODOLOGY

The study used a quantitative research approach and statistical analyses to evaluate the association between exchange rate risk and DT-Saccos' financial success in Kenya. The quantitative study design, as outlined by Cooper & Schindler (2018), directed data collection, measurement, and analysis. The target population for this study was 175 DT-Saccos that hold an SASRA license as of December 31, 2024. The study included gathering secondary data from SASRA-licensed DT-Saccos. It was done using a secondary data collection form. The annual reports and financial statements that each DT-Sacco submitted to SASRA were the source of secondary data. Statements of financial position, audited comprehensive income statements, and cash flow statements were among the financial documents used. The sample size of this study was determined by the proportional sampling technique formula of Taro Yamane (1967). The study employed a stratified random sampling by region to ensure that deposit-taking DT-Saccos from all geographic areas are proportionally represented. The dataset was analysed using SPSS Version 30. The study utilized a panel regression model. The model combined both cross sectional and time series and hence increase the number of data points, enhancing the degree of freedom and improving the efficiency of the estimates. (Baltagi, 2018). The study adopted the use of panel regression analytical model as shown.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \varepsilon_{it} \dots \dots \dots \text{Equation 1}$$

Where:

Y_{it} Represent Financial Performance

β_0 Represent the constant term

β_1 , Represent regression coefficient

X_{1it} , denotes exchange rate risk respectively at time t .

ε Represent error term consolidates

FINDINGS AND DISCUSSIONS

This section presents the results of the study on the relationship between exchange rate risk and financial performance of DT-Saccos in Kenya.

Descriptive Analysis

Descriptive statistics were applied to summarize the quantitative data collected on exchange rate risk and financial performance of DT-Sacco's in Kenya. Table 1 presents the summary of descriptive statistics derived from the dataset.

Table 1: Descriptive Statistics

Variable	Mean	SD	Min	Max	Coef. Vari	Skewness		Kurtosis	
	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	S. E	Stat.	S. E
Exchange Rate Risk	6.80%	1.25%	4.50%	9.50%	51.05	.507	.22	-.149	.437
Financial Performance	2.31%	2.1%	1.10%	4.15%	51.05	.507	.22	-.149	.437

Exchange Rate Risk

Exchange rate risk measures the potential impact of foreign exchange fluctuations on the financial performance of DT-Saccos (Adler & Dumas, 1984). The mean exchange rate risk was 6.80%, with a standard deviation of 1.25%, suggesting a moderate level of dispersion. The coefficient of variation (51.05%) indicates that exchange rate risk varies among DT-Saccos. The skewness value of 0.507 suggests a slight rightward skew, meaning that most DT-Saccos have exchange rate risk values close to the mean. The kurtosis value of -0.149 suggests a distribution that is slightly flatter than normal. This can be seen in the graph represented in figure 2.

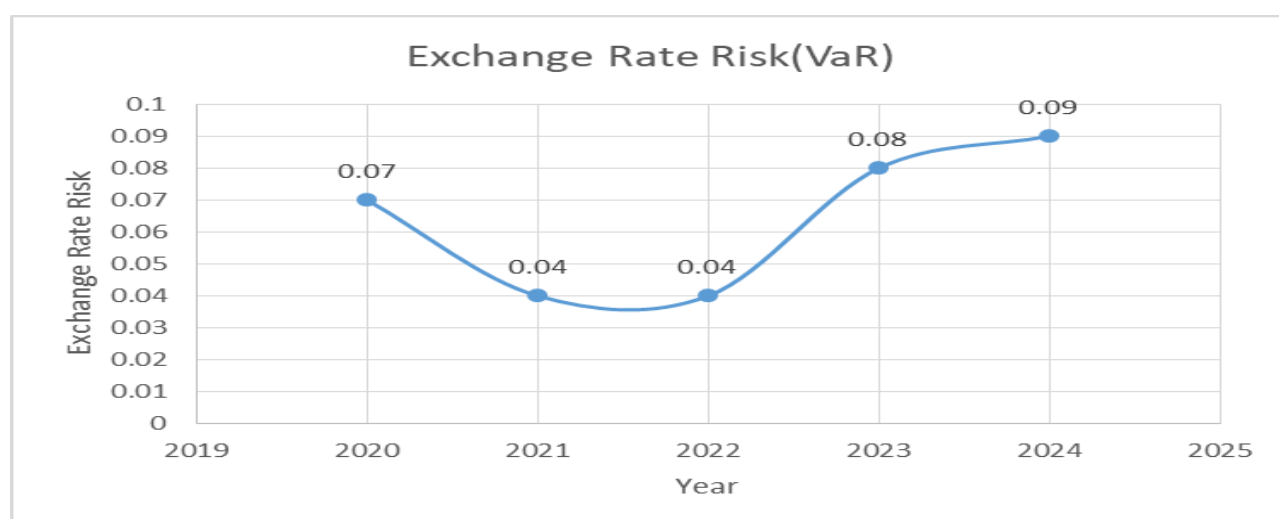


Figure 2: Trend Analysis for Exchange Rate Risk.

The figure shows that the annual average exchange rate risk for DT-Saccos under the study fluctuated. There was no clear trend that could be observed between 2020 to 2024. The study sought to determine whether exchange rate risk affected the financial performance of DT-Saccos in Kenya.

Financial Performance

Financial performance was measured as the return on assets (ROA) of DT-Saccos (Berger & Humphrey, 1997). The mean financial performance was 2.31%, with a standard deviation of 2.10%, indicating significant variation across institutions. The coefficient of variation (51.05%) suggests that financial performance is subject to fluctuations across different DT-Saccos. The skewness value of 0.507 indicates a slight positive skew, implying that most institutions have financial performance values close to the mean. The kurtosis value of -0.149 suggests a relatively flat distribution. This can be seen in the graph represented in figure 3.

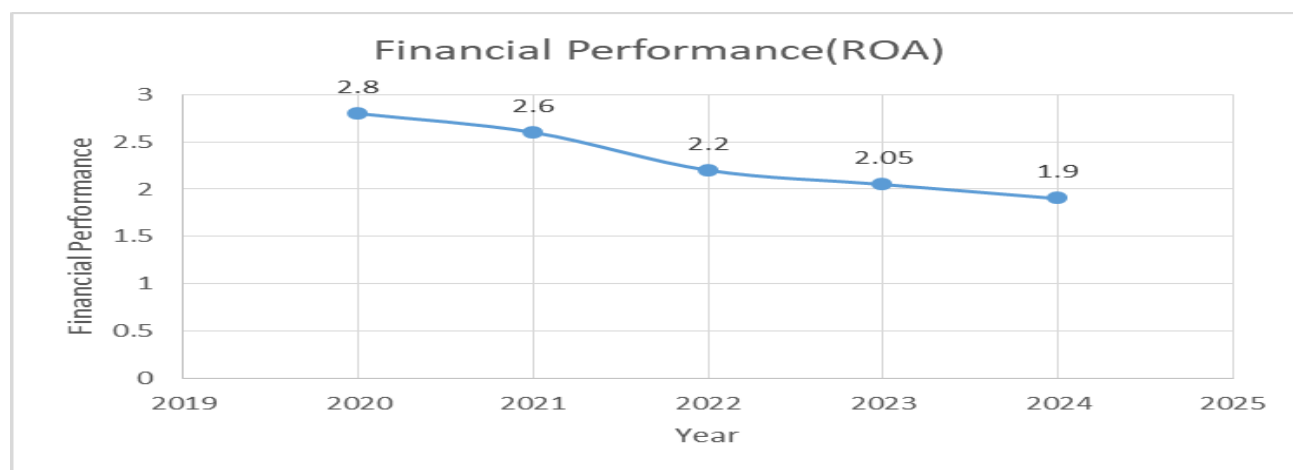


Figure 3: Trend Analysis for Financial Performance.

The financial performance of DT-SACCOs in Kenya, as measured by return on assets or a similar performance indicator, showed a general downward trend from 2020 to 2024. In 2020, the financial performance stood at 2.80%, but it declined slightly to 2.6% in 2021. This downward movement continued in the following years, dropping to 2.2% in 2022 and further to 2.05% in 2023. By 2024, financial performance had reached its lowest point in the period under review, at 1.9%.

Inferential Statistics

This section presents the findings from inferential analysis. The result of the inferential analysis includes correlation, and regression results inferential Statistics.

Correlation Analysis

The associations between DT-Saccos's financial performance (ROA) and the exchange rate risk were evaluated using correlation analysis.. The findings of the correlation analysis are presented below

Table 2: Correlation Matrix

		ROA	Exchange Rate Risk
ROA Exchange Risk N	Pearson Correlation	1.0000	
	Pearson Correlation	-0.727**	1.0000
	Sig.(2-tailed)	0.0000	122
		122	

In accordance with exchange rate risk as measured by the VaR and the financial performance of DT Sacco in Kenya was strongly negative. This is illustrated by the coefficient value of -0.727, which means that an increase in exchange rate risks would impair the financial performance of these Sacco's. The effect will significantly impact the financial performance of these Sacco as revealed by the P values ($p < 0.05$). The exchange rate risk will result in instability and uncertainties in the Sacco's cash flows leading to reduced revenues and reduced costs due to exchange rate fluctuations. Therefore, the null hypothesis in line with the fourth objective was rejected and the study observed that exchange rate risk significantly influences financial performance of DT Sacco's in Kenya. This finding is consistent with research by Kamau et al. (2023), who found that fluctuations in exchange rates can affect the financial stability and profitability of financial institutions, particularly those with exposure to international markets or foreign currencies. Exchange rate risk impacts financial performance through mechanisms such as foreign exchange losses, which can reduce asset values and profitability (Omondi & Olweny, 2021).

Regression Analysis

The study sought to establish the influence of exchange rate risk on financial performance of DT Sacco's in Kenya. Table 3 explains the model summary.

Table 3: Model Summary Table

Model 1	Multiple R	R Squared	Adjusted R Square	S.E Regression	N
ROA	0.6427	0.4126	0.3983	0.0735	122

a. Predictors: (Constant), Exchange Rate risk

The model summary results indicate that the Random Effects Model (REM) provides a strong fit for analyzing the effect of exchange rate risk on the financial performance of DT-Saccos in Kenya. The Multiple R of 0.6427 shows a strong positive correlation between the predicted Return on Assets (ROA) and the actual ROA, suggesting that the model's predicted values closely follow observed outcomes. The R^2 of 0.4126 implies that approximately 41.26% of the variation in DT-Sacco financial performance is explained by the effect of exchange rate risk, highlighting the substantial influence of exchange rate risk on profitability.

The Adjusted R^2 of 0.3983, which accounts for the number of predictors and the sample size, confirms the robustness of the model while correcting for potential overestimation of explanatory power. Additionally, the standard error of regression (0.0735) indicates that, on average, the predicted ROA deviates minimally from actual values, reflecting good predictive accuracy.

Analysis of Variance (ANOVA)

The study further evaluated the model's significance through the Analysis of Variance (ANOVA) technique. The results are presented in the table below.

Table 4: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.8467	1	2.8467	18.7325	0.0003
1 Residual	18.2374	120	0.1520		
Total	21.0841	121			

The ANOVA results confirm that the regression model is statistically significant in explaining the variation in DT-Sacco financial performance. The F-statistic of 18.7325 ($p < 0.001$) indicates that the effect of exchange rate risk is significantly different from zero. This demonstrates that the model as a whole is meaningful and that exchange rate risk have a substantial impact on DT-Saccos' Return on Assets (ROA).

Regression Coefficient Results

The panel regression among dependent and the independent was carried out to establish the effect of exchange rate risk and financial performance of DT Sacco's in Kenya. The coefficient results are shown in Table 5.

Table 5: Random Effects Model (REM) Regression Result

Variable	Coefficient(β)	Std.Error	t-Statistic	P-value
Exchange Rate Risk	-0.0314	0.0091	-3.4432	0.0062
(Constant)	0.0412	0.0143	2.9301	0.0021

The output of the model is as presented

$$Y_{it} = 0.0412 - 0.0314 \text{ ERR}_{it}$$

Hypotheses Test Results

By testing hypotheses, statistical inferences about a population can be drawn from sample data.

H₀₁: Exchange Rate Risk has no Significant Effect on Financial Performance of DT Sacco's in Kenya

The study sought to establish the effects of foreign exchange risk and financial performance of DT Sacco's in Kenya. Exchange rate risk was measured by Value at Risk (VaR) and the financial performance of DT-Sacco's in Kenya. In view of the fourth objective, the null hypothesis (H₀₄) foreign exchange risk has no significant effect on financial performance of DT Sacco's in Kenya was tested. Panel regression results revealed the coefficient value of -0.0314 and a P value of 0.0062 ($P < 0.05$). This means that, for every unit increase in foreign exchange risk, the financial performance of DT Sacco's in Kenya is expected to decrease by 0.0314 units. The P value of 0.0062 which is less than the significance threshold of 0.05 is an indication that the inverse relationship between foreign exchange risk and financial performance of DT Sacco's in Kenya is significant.

Therefore, the null hypothesis was rejected and the study concluded that foreign exchange risk has a statistically significant effect on the financial performance of DT Sacco's in Kenya. The finding is in line with the expectation that exchange rate risk can have adverse effects on financial performance, particularly for DT-Sacco's that are involved in cross-border transactions or investments in foreign currencies. Exchange rate fluctuations can lead to increased costs and reduced profitability, particularly when the local currency depreciates against major currencies, making imports more expensive.

Similar findings include studies of Tadesse (2019) in Ethiopia, Hoque (2015) in Bangladesh, Nzioka (2017), Wambua et al. (2023) and Mugi (2015) in Kenya all who concluded that exchange rate risk has a detrimental effect on financial performance of firms in diverse sectors of the economy. Contradictory findings include research by Muriithi (2016) and Hossin and Mondol (2020) indicated no significance while Mbabazize, Daniel, and Ekise (2014) in Uganda finding revealed a strong positive relationship between companies' performance and the exchange rate.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This section offers an overview of the main conclusions drawn from the investigation into the connection between exchange rate risk and DT-Sacco's financial performance in Kenya.

According to the study, exchange rate risk, as determined by Value at Risk (VaR), has a significant negative correlation with financial performance. This suggests that DT-Sacco's profitability may be greatly impacted by exchange rate fluctuations. The regression analysis further confirmed that exchange rate risk has a notable impact on ROA, suggesting that DT-Sacco's exposed to foreign currency transactions or international market dynamics may experience financial gains or losses depending on currency volatility. These findings are consistent with previous studies, which indicate that exchange rate movements affect financial institutions through foreign exchange gains or losses, impacting overall financial performance. Effective exchange rate

risk management strategies, such as currency hedging and diversification, are necessary to mitigate potential adverse effects and enhance financial stability

Exchange rate risk, measured by the value at risk, has been identified as an important factor affecting DT-Sacco's financial stability. The study showed that exchange rate risk had a significant negative impact on the financial performance of DT Sacco in Kenya. The null hypothesis was therefore rejected, and it was concluded that Foreign Exchange risk had a statistically significant impact on the financial performance of DT Sacco in Kenya. The findings indicate that if DT Sacco's assets are mainly held in local currency, fluctuations in the exchange rate of the dollar can have a significant impact. In such a scenario, DT Sacco's would be more exposed to foreign exchange risk because their assets and liabilities are denominated in the local currency, mitigating the potential negative effects on their financial performance.

Based on the study's findings, it is crucial for DT Sacco's to mitigate exchange rate risk, DT-Saccos particularly those engaged in foreign currency transactions, diaspora products, or international partnerships should adopt currency risk management tools such as forward contracts, currency-matched borrowing, and foreign-currency-based asset allocation. Finally, policymakers and regulators such as SASRA should enhance exchange rate risk-based supervision guidelines, requiring DT-Saccos to adopt modern risk measurement tools, stress-testing mechanisms, and periodic reporting frameworks. Strengthening regulatory oversight will help DT-Saccos build resilience against macroeconomic volatility and sustain long-term financial performance.

Areas for Further Studies

While this study provides valuable insights into the relationship between exchange rate risk and the financial performance of DT-Sacco's in Kenya, several areas remain unexplored that could further enrich the understanding of this topic. Future research could explore the broader effect of macroeconomic factors, such as GDP growth, unemployment rates, and political stability, on the financial performance of DT-Sacco's in Kenya. A more comprehensive analysis of these external economic conditions could provide deeper insights into how macroeconomic fluctuations influence risk exposure and SACCO profitability, helping policymakers and financial managers make informed decisions.

It would also be valuable to conduct comparative studies across different sectors of the economy to examine whether DT-Sacco's operating in specific industries, such as agriculture, retail, or manufacturing, experience different levels of market risk and financial performance outcomes. Understanding sectoral differences in risk exposure could help tailor risk management strategies to the unique characteristics of DT-Sacco's in various industries, ensuring that risk mitigation approaches align with sector-specific challenges?

A longitudinal study extending beyond five years could provide deeper insights into the long-term effects of exchange rate risk on the performance of DT-Sacco's. Such studies could identify trends and shifts in risk exposures over time, particularly during economic downturns or financial crises, which would offer valuable information for refining risk management frameworks. Long-term analyses could also help DT-Sacco's anticipate potential risks and develop strategies to mitigate their impact more effectively.

Finally, the study found that exchange rate risk accounted for a combined 41.26% of DT Sacco's financial performance in Kenya. Yet a significant 58.74% risk is still not explained. Future research should explore more aspects of market risk and financial performance to gain a more comprehensive view. This more extensive investigation will lead to a more thorough and nuanced understanding of the factors affecting the financial performance of these Sacco's in this specific area, helping them to make better decisions about market risks.

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