

Interest rates drivers and financial performance of deposit-taking savings and credit cooperative societies in Kenya: The role of inflation rate

Shilaho Kennedy Shibeka¹

Maniagi Musiega²

Muli Maingi³

¹kshibekas9@gmail.com

²gmaniagi@mmust.ac.ke

³wmuli@mmust.ac.ke

^{1,2,3}Masinde Muliro University of Science and Technology, Kenya

<https://doi.org/10.51867/ajernet.6.2.50>

ABSTRACT

This study aimed to examine interest rates drivers and the financial performance of deposit taking Savings and Credit Co-operative Societies [SACCOs] in Kenya. The specific objectives were to establish the effect of inflation rate on financial performance of deposit-taking SACCOS in Kenya. The study was anchored on Irving Fisher's "Quantity Theory of Money." A descriptive research design and correlational research design was employed in this study. Stratified random sampling was applied on a population of 176 deposit taking SACCOS to select 121 Saccos. The study used secondary data which was obtained from audited annual financial reports and Sacco Society's Regulatory Authority (SASRA) reports. The population was classified into 3 strata representing three tier sizes of DT-SACCOS in Kenya. A total of 121 audited annual financial reports was sampled for a 7 years' period from 2016 to 2022. The collected data was analyzed using descriptive and inferential statistics. The results revealed that independent variables used in the research were able to account for about 30.68% ($R^2=0.3068$, $P<0.05$) of the variations that were noted in the financial performance of Deposit Taking SACCOS in Kenya. A unit increase in inflation rate leads to a 0.889 unit's reduction in the financial performance ($\beta_1=-0.889$, $t=-92.03$, $p<0.05$). The study concluded that there is significant effect of inflation rate on financial performance of deposit-taking SACCOS in Kenya. The research recommended that Saccos should develop strategies such as real-time inflation monitoring, flexible interest rate structure and risk-based pricing to adjust their loan interest rates more readily in response to inflation changes.

Keywords: Credit Co-Operative Societies, Deposit-taking Savings, Financial Performance, Interest Rates Drivers, Inflation Rate

1. INTRODUCTION

Financial performance is a critical aspect for deposit-taking Savings and Credit Co-operative Societies (SACCOS) as it determines their ability to achieve their set policies and financial and non-financial objectives (Otwoko, 2023). The background looks at the study in three perspectives namely; world view, African view and Kenyan perspective. The background also gives a brief history of Deposit Taking SACCOS. Interest rate dynamics, equilibrium prices and quantities in Brazil's capital markets are shaped by the dynamic interplay between supply and demand. The country's central bank officially adopts an inflation target system, with the sialic overnight rate serving as the key monetary policy tool. In traditional economic models in Brazil, the market interest rate is seen as a singular rate resulting from the interaction between demand and supply in the capital markets. However, a comprehensive micro-economic assessment of Brazil's capital markets should also consider other factors, such as the term structure and risk premium structure, which can influence the expectations of market participants regarding future movements in the Singapore dollar (Boamah, 2017).

The United States and Singapore have both experienced a prolonged period of low interest rates. This situation is attributed to shifting demographics, slower productivity and economic growth, as well as emerging markets seeking significant reserves of safe assets. The increase in international reserves leads to a rise in liquidity, making it challenging for interest rates to increase. Nevertheless, it is the forces of demand and supply in the US and Singapore markets that ultimately determine long-term interest rates. In Singapore, the central bank, through the monetary authority, controls the country's monetary policy (Durrani et al., 2020). However, Chow-Tan (2017) argued that the monetary authority of Singapore does not directly control domestic interest rates; rather, borrowing costs are largely influenced by US interest rates and investors' expectations regarding the future movement of the Singapore dollar.

Financial reforms in South Africa have led to a proliferation of banks and increased competition among various financial intermediaries (Bushe, 2019). The resurgence of numerous financial institutions has resulted in smaller profit margins, prompting many of these intermediaries to consolidate operations for improved efficiency. Consequently, the

banking sector in South Africa has experienced increased concentration, with the official interest rate being the Repo rate. Changes in the Repo rate indirectly influence the interest rates on overdrafts and other loans offered by banks. As a result, the South African Reserve Bank plays a crucial role in affecting interest rates in the economy. Alterations in the Reserve Bank's repo rate impact the cost at which Banks, Microfinance Institutions (MFIs), and deposit-taking Savings and Credit Cooperative Organizations (SACCOs) obtain funds in the money market.

In Ethiopia, the National Bank of Ethiopia determines interest rates. Decisions on interest rates are made by the Monetary Committee of the National Bank of Ethiopia, with the official rate being the bank's savings rate. The National Bank of Ethiopia (NBE) is responsible for regulating the supply of money and credit, including applicable interest rates and other charges (Tekalign, 2017). While the lending rate on loans and re-discount facilities issued by the NBE to commercial banks and other financial institutions is determined by the NBE from time to time, individual banks have the freedom to set their lending rates on loans and advances.

The commitment of the Kenyan Government to a free-market economy is evident in the Sessional Paper No.1 of 1986 on economic management for renewed Growth. However, the Central Bank of Kenya, as the financial regulator, occasionally intervenes to ensure sustainable economic growth and controlled inflation. The Central Bank of Kenya employs monetary policy decisions to ensure that the supply of money in the economy aligns with the growth and price objectives set by the government (Nathan & Jagongo, 2017). The legal framework guiding the supervision of DT-SACCOs is provided by the SACCO Societies Act, ensuring adherence to international standards. However, non-deposit taking SACCOs operate under Cooperative Societies Act guidelines and have a different supervisory framework (SASRA, 2021).

SACCO Societies Regulatory Authority (SASRA) financial stability report of 2021 depicted an increase in credit risk shown by the increase in the ratio of non-performing loans (NPLs) to gross loans is from 8.39% in 2020 to 8.86% in 2021. The same report showed an overall average SACCOs performance in terms of return on assets (ROA) reduce from 2.65% in 2020 to 1.59% in 2021 indicating a negative correlation between credit risk and financial performance. Besides in CBK 2021 & 2022 annual supervision reports, showed an overall country's inflation rates with an upward movement trends from 5.4%, 6.1% and 7.7% in 2020, 2021 and 2022 respectively. This also means that when inflation rises it leads to general decrease in profitability of SACCOs. Report (SASRA, 2021) showed an average performance of SACCOs declined from 2.65% to 1.59% from 2020 to 2021 in terms of return on assets (ROA).

Furthermore, SACCOs face a unique challenge of asset/liability mismatch since depositors save in the short-term while borrowers repay loans in the long-term. This mismatch is exacerbated when financial institutions subjectively assess and disburse loans, leading to credit being extended to unqualified individuals who later default on their obligations (Otwoko & Maina, 2021). As a consequence of these challenges, SACCOs are exposed to liquidity risk (Shibutse et al., 2019), as well as credit risk by virtue of potentiality of non-performing loans (NPLs). Effective liquidity control becomes crucial to meet cash flow needs, especially given the fundamental uncertainty caused by external events and the actions of various stakeholders.

High interest rates occasioned by inflationary pressure may lead borrowers to fall behind on loan repayments, increasing the credit risk and resulting in poor financial performance (SASRA, 2021). DT-SACCOs mobilize deposits from their members and offer loans at affordable interest rates, making it crucial for them to maintain optimum levels of liquidity to cover operational costs and fulfill member's loan needs. However, in Kenya, SACCOs suffer from poor financial administration, non-remittance of deductions by employers, graft, and delinquent loans (Otwoko & Maina, 2021).

1.1 Statement of the Problem

According to the most recent SASRA report of 2022, SACCOs faced challenges with their financial performance due to the interplay of among others; credit risk, liquidity risk, and inflation rate. On average SACCOs experienced a decline in its financial performance during this period exhibited by the Sacco subsector return on assets reducing from 2.65% to 1.59% from 2020 to 2021, SACCO Report, 2021. For instance, Mwito SACCO Society Ltd posted a decline in performance in terms of Return on Assets (ROA) from 0.036 in 2017 down to 0.021 in 2022. The report attributes this drop in performance to an increase in credit risk faced by the SACCOs. As economic conditions changed, some of the SACCO's borrowers faced difficulties in repaying their loans, resulting in higher credit risk exposure for the institution. This situation adversely impacted the SACCO's profitability and ability to achieve its financial objectives.

Research on the relationship between the interest rate drivers and the financial performance of DT-SACCOs has resulted in contradictory findings. For instance, a study conducted by Otworko (2023) revealed that credit risk had a positive relationship with the performance of SACCOs. In contrast, another study by Mwanja (2021) found that credit risk had either no significant effect or had a negative impact on the performance of similar SACCOs. These conflicting findings underscore the complexity of the relationship between credit risk and financial performance, necessitating further investigation.

Kimutai (2022) examined liquidity management's impact on financial performance in Kericho County's deposit-taking SACCOs. Results revealed a positive influence of liquidity management on financial performance. However, the study suggested investigating additional factors like inflation rate, liquidity risk, and credit risk to further enhance understanding of SACCOs' performance drivers and bridge existing research gaps. Opala (2014) explored the impact of financial stability on DT-SACCOs' performance in Nairobi County. Results highlighted these factors' significance influence on financial performance. The researcher recommended further study to encompass all deposit-taking Savings and Credit Co-operative Societies for wider application in Kenya. Furthermore, the study proposed examining additional independent variables like inflation rate, liquidity risk, and credit risk to address research gaps and enhance understanding of DT-SACCOs' performance dynamics. Despite extensive literature on drivers influencing Kenyan SACCOs' financial performance, significant research gaps persist, inviting further investigation. This necessitates deeper exploration to unveil reasons for the limited impact. While studies on SACCOs' financial factors (Wangui & Muturi, 2016) and liquidity risk (Muriithi & Waweru, 2017) exist, a unique void remains in examining interest rates drivers' effects on deposit-taking SACCOs' financial performance, offering an unexplored avenue for further research.

1.2 Research Objective

To establish the effect of inflation rate on financial performance of deposit-taking SACCOS in Kenya.

1.3 Research Hypothesis

H_{01} : There is no significant effect of inflation rate on financial performance of deposit-taking SACCOS in Kenya.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Quantity Theory of Money

The Quantity Theory of Money, with Irving Fisher as one of its prominent adherents in 1911, posits a positive relationship between the supply of money and the long-term price of goods (Tobin, 2005). According to this theory, an increase in the quantity of money supply will lead to a proportionate percentage increase in the price of commodities. It asserts that changes in the amount of money in circulation are the primary drivers of general changes in prices (Aityan, 2013). The Quantity Theory of Money assumes that a 3% increase in money supply will result in an exactly 3% increase in the rate of inflation. However, its assumption that the velocity of money is constant and unresponsive to changes in price and the quantity of money is unrealistic. In practice, the velocity of money depends on factors such as; population, trade activities, habits of people, interest rates, and investment opportunities, which can influence the velocity of money in the economy. One of the key assumptions of the quantity theory of money is that the velocity of money remains constant and is unresponsive to changes in price and the quantity of money.

Variations in money supply directly influence the purchasing power of both SACCOs and their members, affecting the cost of credit in the economy. Consequently, rise or fall in demand for money affects the cost of credit in the economy and hence the cost borrowing especially for the deposit taking SACCOs who are unable to fully finance their operations from members' shares. Members' credit uptake may decline during periods of high money supply due to perceived reduced purchasing power (Munene et al., 2019). In conclusion, the Quantity Theory of Money plays a crucial role in understanding the impact of money supply on price levels and credit uptake by deposit-taking SACCOs and their members. Although it has its limitations, the theory provides valuable insights into the relationship between money circulation, inflation, and the cost of credit, making it relevant to the examination of financial performance in the context of deposit-taking SACCOs.

2.2 Conceptual Framework

The dependent variable is financial performance while the independent variable is interest rates drivers as measured by inflation rate.

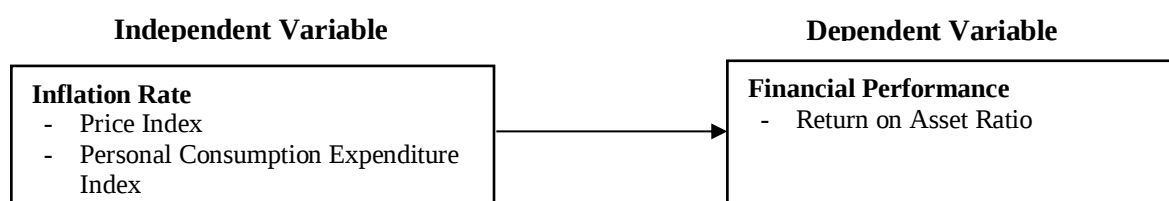


Figure 1
Conceptual Framework

2.3 Empirical Studies

The impact of inflation on the financial performance of various sectors and economies has been a subject of interest in several studies. Boyd et al. (2001) examined the relationship between inflation and financial performance in the United States of America. The results indicated that at low-to-moderate rates of inflation, there was a strong negative association between inflation and lending by the financial sector to the private sector, as well as the quantity of bank assets and volume of liabilities issued by banks.

Basnet and Upadhyaya (2015) analyzed the impact of oil price shocks on real output, inflation, and the real exchange rate in several ASEAN-5 countries (ASEAN-5” refers to Indonesia, Malaysia, the Philippines, Singapore, and Thailand) using a Structural VAR model. The study found that oil price fluctuations did not have a significant long-run impact on the ASEAN-5 economies, with much of the effect being absorbed within five to six quarters. The study also identified a threshold on the inflation-finance relationship, with a strong association between inflation and financial development at moderate inflation rates.

Ade-Tweneboah (2018) used causal research design to examine the impact of inflation rate and interest rate on financial sector development in Ghana from 1980 to 2015. The study found a negative and statistically insignificant relationship between inflation and financial sector development. Similarly, interest rates had a negative statistically significant relationship with financial sector development. The study recommended keeping inflation rates low and stable and maintaining low and stable interest rates to induce deposits at banks.

Tsaurai (2018) investigated the impact of inflation on financial sector performance in sub-Saharan African countries. The study utilized dynamic panel data covering 45 countries in the region between 1980 and 2011. Both anticipated and unanticipated inflation were found to have a negative effect on the financial sector performance in these countries. The study concluded that high inflation rates are detrimental to financial sector performance, and necessary measures should be taken to control inflation and improve the performance of the financial sector.

Irungu and Muturi (2015) examined the relationship between macroeconomic variables and financial performance of firms in the energy and allied sector listed in the Nairobi Securities Exchange. The study used descriptive correlation research design. The population of this study comprised of all firms quoted in the energy and allied sector in the Nairobi Securities Exchange. The study found significant influence of lagging macroeconomic indicators on the financial performance of these firms.

Oganga and Oyugi (2015) researched the effects of inflation volatility on the financial performance of SACCOs in Kisumu City, Kenya. The study used a descriptive survey research design. Stratified random sampling technique was applied on a population of 528 top managers in 176 deposit-taking SACCOs in Kenya. The study found a strong negative correlation between annualized inflation rates and the SACCOs’ financial performance, indicating that incremental inflationary forces had a diminishing effect on the SACCOs’ financial performance.

Mwaniki (2017) explored the effect of macroeconomic variables on the average financial performance of deposit-taking SACCOs in Nairobi, Kenya. The study used a descriptive design. Target population was 35 DTS registered by SASRA to operate up to December 2017 in Kenya. The sample size for this study comprised of 15 DTS operating in Nairobi Kenya, which were licenced to operate FOSA by SASRA. These are the DTSS whose data was available for the period of study. Quarterly data was collected for 20 years (1997-2016). Analysis was conducted using the vector error correction time series model. The study found no statistically significant relationship between return on assets and lagged values of inflation rate, interest rate, and money supply.

Kiptoo et al. (2015) assessed the effect of cost-push inflation on the financial performance of SACCOs in Eldama Ravine Sub County, Kenya. Data was collected using a structured questionnaire and analyzed using descriptive and inferential statistics. The target population of the study comprised 150 Board members, SACCO unionizable staff and SACCO management staff. Stratified random sampling was used to obtain a sample size of 107 respondents. Data analysis was done using SPSS version 20. The study found a weak relationship between financial performance of SACCOs and cost-push inflation.

In conclusion, the empirical studies discussed above provide insights into the relationship between inflation and financial performance in different countries and economic sectors. The results show that the impact of inflation on financial performance varies across countries and industries, with low-to-moderate inflation rates having a stronger negative association with financial performance. Governments and monetary institutions should carefully manage inflation to support a healthy and stable financial sector. High inflation rates means high cost of borrowing hence decrease in borrowing and increase in loan defaults, thus credit risk as well.

III. METHODOLOGY

The research was carried out in Kenya focusing on 175 SASRA licensed DT-SACCO. Deposit-taking SACCOs have continued to expand their physical presence and operations to various parts of the country, with a total of 464 physical branches spread out in different parts of the country being recorded in 2017. Further to head office locations which are channels of delivery, DT-SACCOs account for almost 638 physical financial delivery channels spread across

the country. A descriptive research design and correlation research design were used in the study. Descriptive research is a type of research design that tries to explain the relationship between two or more variables without making any claims about cause and effect. It includes collecting and analyzing data on at least two variables to see if there is a link between them. Correlational research designs measure the magnitude and direction of the relationship between two or more variables, revealing their associations.

There are 176 deposit-taking SACCOs in Kenya. Therefore, the target population was 176 DT-Saccos from which a sample was drawn from. The study used secondary data that was collected from audited reports & financial statements over 7 (seven) years' period between 2016 and 2022 from the sampled DT-Saccos in Kenya. In addition, information was obtained from reputable journals, government sources, semi-autonomous government agencies (SAGAs) and Sacco Society's Regulatory Authority (SASRA). Krejcie and Morgan (1970) formula is commonly used in research to estimate sample size. Krejcie and Morgan form are used to determine the population sample size.

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where

S is the desired sample size

X^2 is the table value of chi-square for one degree of freedom at desired confidence level which is $1.96 \times 1.96 = 3.841$

N is the population size

P is the population proportion assumed to be 0.5 since this was provided maximum sample size and d is the degree of accuracy expressed as a proportion 0.05

$$S = \frac{3.8416 \times 176 \times 0.5 (1-0.5)}{0.05^2 (176-1) + 3.8416 \times 0.5 (1-0.5)} = 120.9$$

Respondents = 121 SACCOs.

A sample of 121 DT-Saccos was drawn from the target population of 176 DT-Saccos countrywide. The study adopted the stratified random sampling. Data was collected from each stratum. Secondary data was gathered from SASRA's annual reports which contain relevant information relating to SACCOs performance indicators in Kenya vis-a-vis interest rates drivers. Published annual reports and journals on the websites in relation to various sampled SACCOs formed a crucial interaction site and source for data collection. Data analysis was guided by the aims and objectives of the study and the measurement of the data that was collected to determine the patterns revealed in data collection regarding the collected variables. Descriptive statistical tools in the study were frequencies, percentages, means, variances and standard deviations. Inferential statistical tools to be used was panel regression analysis and Pearson Product Moment Correlation. All data that was collected was analyzed at 5% level of significance. Regression analysis and Pearson's correlation analyses comprised inferential statistics was employed. The results obtained from the analysis was presented in form of tables, graphs, and charts.

IV. FINDINGS & DISCUSSION

4.1 Descriptive Analysis

Inflation rate was measured by use Price Index and Personal Consumption Expenditure Index between 2016 and 2022. The results are presented in Table 1

Table 1

Descriptive Statistics- Inflation rate

Stats	N	Min	Max	Mean	Std Dev.
Personal Consumption Expenditure Index	847	57164	86627	73754	9661.97
Consumer Price Index	847	108.689	201.805	156.3894	36.30452

Between 2016 and 2022, the Personal Consumption Expenditure Index (PCE) experienced notable fluctuations, ranging from a minimum of Ksh 57,164 to a maximum of Ksh 86,627. This index serves as a key measure of the average expenses incurred by consumers on goods and services. The mean expenditure over this period stood at Ksh 73,754, indicating the typical spending pattern. However, the standard deviation of Ksh 9,661.97 reveals considerable variability in consumer spending habits around this average. This variability suggests shifts in consumer behavior and economic conditions, contributing to fluctuations in expenditure levels.

Similarly, the consumer price Index, reflecting changes in the prices of a basket of goods and services, exhibited significant movement during the same timeframe. Beginning at a minimum of 108.689 and reaching a peak of 201.805,

this index indicates a general increase in prices over the period. The mean price index of 156.3894 provides an average measure of inflationary trends, indicating a consistent upward pressure on prices. However, the standard deviation of 36.30452 highlights the variability in price changes around this average. This variability reflects the dynamic nature of price movements, influenced by factors such as supply and demand dynamics, economic policies, and external shocks.

Overall, the statistics underscore a period of economic expansion and inflation between 2016 and 2022. The increase in both the Personal Consumption Expenditure Index and the Price Index signifies growing consumer demand and upward pressure on prices. However, the variability observed in both indices suggests the presence of underlying factors shaping consumer behavior and price dynamics, contributing to fluctuations in expenditure levels and price movements.

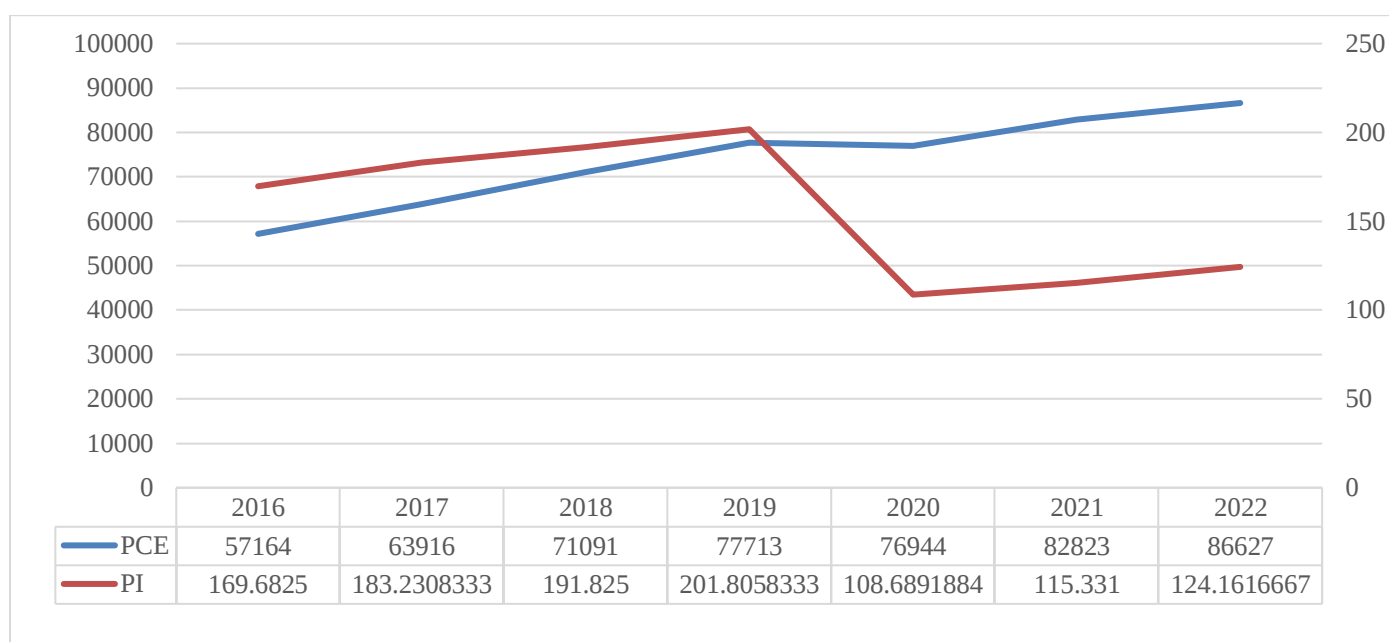


Figure 1

Inflation Rate Trend Chart between 2016 and 2022

Personal Consumption Expenditure starts at 57,164 in 2016, gradually increasing annually to reach 63,916 in 2017, 71,091 in 2018, and 77,713 in 2019. However, the numbers experience a sudden decline in 2020 to 76,944. Subsequently, Personal Consumption Expenditure bounces back strongly in 2021, registering a new high of 82,823. Finally, in 2022, Personal Consumption Expenditure rises marginally to settle at 86,627. Price Index follows an irregular path, making it difficult to pinpoint clear triggers for the movements. Nevertheless, the general trend sees a slow climb from 169.68 in 2016 to 183.23 in 2017. After plateauing briefly, the Price Index jumps considerably in 2018 to 191.83. The Price Index continues its rise in 2019, reaching 201.81. Interestingly, the Price Index collapses dramatically in 2020, falling to 108.69. Prices begin to normalize in 2021, pushing the Price Index to 115.33, and continuing in 2022 as the Price Index reaches 124.16. Financial performance which is the dependent variable was determined using returns on Assets. The results are indicated in Table 2.

Table 2

Financial Performance

Variable	N	Min	Max	Mean	Std Dev.
ROA	847	1.59%	2.69%	2.43%	0.003839

The dataset provides insights into the Return on Assets (ROA), a fundamental financial metric used to assess a company's profitability relative to its asset base. The ROA figures range from a minimum of 1.59% to a maximum of 2.69%, with an average of 2.43% and a narrow standard deviation of 0.003839. At the lowest point, the company achieved a ROA of 1.59%, implying it generated approximately 1.59 cents of profit for every shilling of assets. Conversely, at the highest point, the ROA reached 2.69%, suggesting a more efficient utilization of assets with around 2.69 cents of profit generated per shillings of assets. The mean ROA of 2.43% signifies the average profitability observed across the dataset. Moreover, the narrow standard deviation indicates limited variability in ROA values, suggesting consistent profitability performance across the dataset.

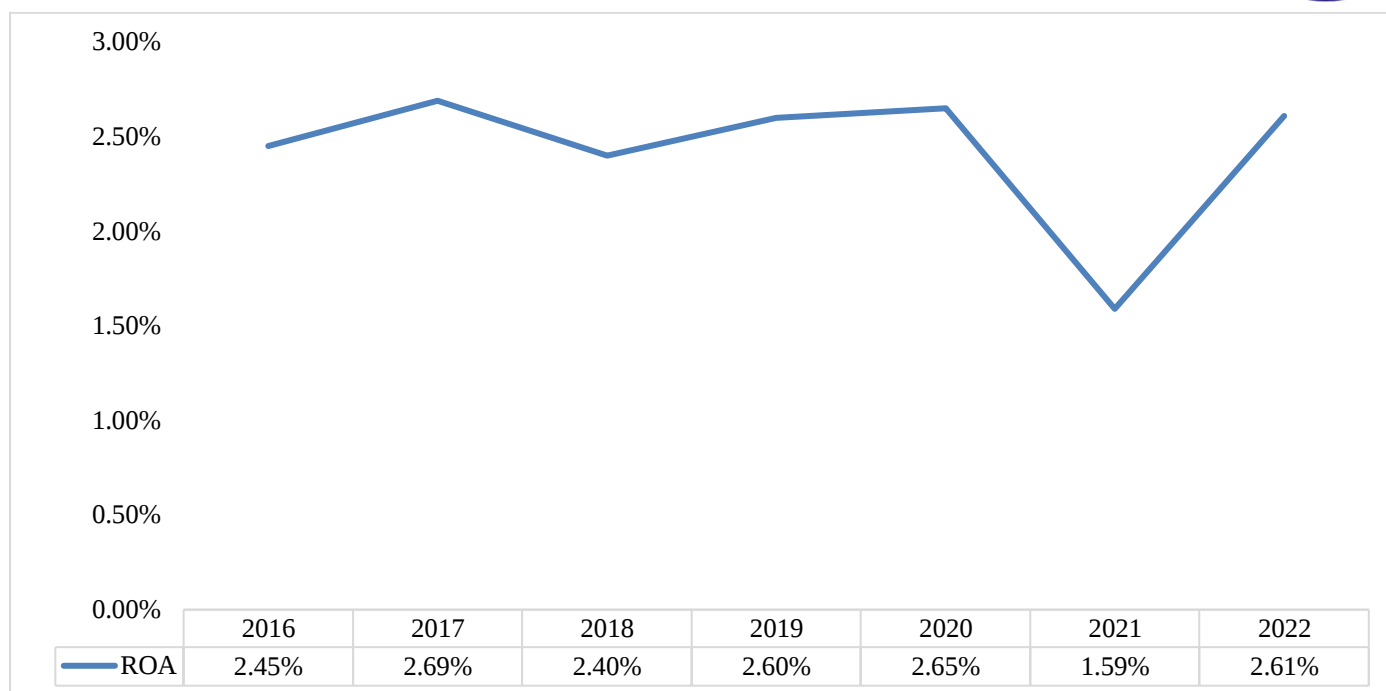


Figure 2
Financial Performance Trend Chart between 2016 and 2022

The Return on Asset (RoA) ratio exhibits some variability over the years from 2016 to 2022. Starting in 2016, RoA begins at 2.45%, then experiences an increase in 2017 to reach 2.69%, showing strong performance in asset utilization. However, the RoA subsequently drops in 2018 to 2.40%. Following the drop, RoA recovers in 2019, climbing back up to 2.60%, surpassing the previous high achieved in 2017. There is another increase in 2020, with RoA hitting 2.65%. Unfortunately, the trend reverses sharply in 2021, with RoA dropping significantly to just 1.59%. Lastly, RoA manages to recover partially in 2022, closing the period at 2.61%, almost matching the record high seen in 2020.

4.2 Inferential Analysis

The null hypothesis of the study was that there is no significant effect of inflation rate on financial performance of deposit-taking SACCOS in Kenya. This was achieved using Pearson Correlation and Regression analysis.

4.2.1 Pearson Correlation

A strong negative correlation between Financial Performance and Inflation Rate ($r = 0.5539$, $p < 0.05$) suggests that companies' financial performance tends to decline as inflation rates rise. This result aligns with economic theory, as high inflation erodes purchasing power and increases costs for businesses, leading to lower profitability. These results are supported by Hossain et al. (2020) who examined the impact of inflation on the financial performance of firms in Bangladesh. The findings corroborated the negative correlation observed in your analysis, indicating that firms' profitability tends to decrease during periods of high inflation. Abbas et al. (2021) investigated the relationship between inflation and financial performance in the Pakistani manufacturing sector. The results supported the notion that higher inflation rates adversely affect firms' financial performance, particularly in industries with limited pricing power. Contrary to the negative correlation found in your analysis, a study by Liu et al. (2020) conducted in China suggested that the relationship between inflation and financial performance may be nonlinear and vary across different economic sectors. The study found that moderate levels of inflation were associated with improved financial performance in certain industries due to increased consumer spending. Similarly, research by Song et al. (2021) examined the impact of inflation on the financial performance of firms in the United States. The study found mixed results, with some sectors experiencing declines in profitability during periods of high inflation, while others benefited from increased pricing power and demand.

Table 3
Correlation Analysis

Inflation rate	Financial Performance	
	Pearson Correlation	- 0.5539
	Sig. (2-tailed)	0.000
	N	847

4.2.2 Regression Analysis

Simple linear regression analysis was done to determine the influence of inflation rate on the financial performance of deposit taking Saccos. Results were presented in Table 4.

Table 4

Linear Regression Analysis

Fixed-effects (within) regression			Number of obs =		847	
Group variable: DTS			Number of groups =		121	
R-sq:			Obs per group:			
within = 0.3427			min =		7	
between = 0.2836			avg =		7	
overall = 0.3068			max =		7	
			F(1,846)=		2958.81	
			Prob > F=		0.000	
Financial Performance	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]	
Inflation Rate	-0.88890	0.009659	-92.03	0.000	-1.169939	0.707866
_cons	-0.61335	0.047096	-13.02	0.000	-0.70581	-0.52089

The analysis shows that the panels were strongly balanced for this multivariate analysis as shown by the number of observations per group. There was a total of 847 observations used in this analysis considering 121 groups of entities implying strongly balance panels. The minimum, maximum and average numbers of observations per groups were all equal to 7. The result obtained from fixed effect model indicated that the interest rate drivers accounted for 30.68% (Overall R square=0.3068) of the variation in financial performance of deposit-taking SACCOS in Kenya. The F (1,846) to the model shows is 2958.81 which is greater than 0 implying that the estimated parameters in the model are at least not equal to zero. This implies that interest rate driver (Inflation Rate) has an effect on financial performance of deposit-taking SACCOS in Kenya. This effect is significant (P=0.000).

Regression coefficients are estimates of the unknown population parameters and describe the relationship between a predictor variable and the response. In linear regression, coefficients are the values that multiply the predictor values. P-values and coefficients in regression analysis work together to tell which effects in the model are statistically significant and the nature of those effects. The coefficients describe the mathematical relationship between each independent variable (inflation rate) and the dependent variable (Financial performance). The p-values for the coefficients indicate whether these effects are statistically significant. The study regression model as obtained from table above is as shown below.

$$Y = -0.61335 - 0.88890X_1$$

Where:

Y = Financial performance

X_1 = Inflation rate

As shown in Table 4, in the absence of three interest rates drivers constructs, financial performance of deposit-taking SACCOS in Kenya will be -0.61335 at 0.05 significance level. From the findings, inflation rate had a regression co-efficient (β_1) of -0.88890, $p=0.001$ implying that a unit increase in inflation rate across time and among deposit-taking SACCOS in Kenya would result in a significant decrease of 0.88890 units in financial performance. Since the P value is less than 0, the first null hypothesis was rejected as there is significant effect of inflation rate on financial performance of deposit-taking SACCOS in Kenya. The results are supported by Ade-Tweneboah (2018) who used causal research design to examine the impact of inflation rate and interest rate on financial sector development in Ghana from 1980 to 2015. The study found a negative and statistically insignificant relationship between inflation and financial sector development. Similarly, interest rates had a negative statistically significant relationship with financial sector development. Tsaurai (2018) investigated the impact of inflation on financial sector performance in sub-Saharan African countries. The study concluded that high inflation rates are detrimental to financial sector performance. However, Mwaniki (2017) explored the effect of macroeconomic variables on the average financial performance of deposit-taking SACCOs in Nairobi, Kenya. The study found no statistically significant relationship between return on assets and lagged values of inflation rate, interest rate, and money supply. Similarly, research by Song et al. (2021) examined the impact of inflation on the financial performance of firms in the United States. The study found mixed results, with some sectors experiencing declines in profitability during periods of high inflation, while others benefited from increased pricing power and demand.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concluded that inflation rate has significant negative effect on financial performance of deposit taking Saccos. An increase in inflation rate would result to significant decrease in financial performance. The first null hypothesis was rejected. When inflation rates rise, lenders typically adjust interest rates upwards to maintain the real value of their returns. In this context, a significant negative effect of inflation on financial performance suggests that higher inflation rates lead to higher interest rates, which can reduce the demand for loans and decrease interest income for Saccos.

5.2 Recommendations

Saccos should develop strategies such as real-time inflation monitoring, flexible interest rate structure and risk-based pricing to adjust their loan interest rates more readily in response to inflation changes. This can help maintain profitability by ensuring interest income keeps pace with inflation. Besides, Deposit-taking Saccos should introduce inflation-indexed loan products where the interest rates are tied to an inflation index, such as the Consumer Price Index. As inflation rates rise, the interest rates on these loans would automatically adjust upwards, ensuring that borrowers are not disadvantaged by the erosion of purchasing power caused by inflation.

REFERENCES

- Abbas, B., Shafi, S., Rahman, A., Javed, S., & Taj, M. (2021). The causal nexus between financial development and manufacturing sector: Empirical study for Pakistan. *Bulletin of Business and Economics (BBE)*, 13(3), 109–114.
- Ade-Tweneboah, M. (2018). The impact of inflation rate and interest rate on financial sector development in Ghana: Time series approach (Doctoral dissertation). University of Cape Coast.
- Aityan, S. K. (2013). The notion of general value in economics. *International Journal of Economics and Finance*, 5(5), 1–14.
- Basnet, H. C., & Upadhyaya, K. P. (2015). Impact of oil price shocks on output, inflation and the real exchange rate: Evidence from selected ASEAN countries. *Applied Economics*, 47(29), 3078–3091.
- Boamah, N. A. (2017). The global financial market integration of selected emerging markets. *International Journal of Emerging Markets*, 12(4), 683–707.
- Boyd, J. H., Levine, R., & Smith, B. D. (2001). The impact of inflation on financial sector performance. *Journal of Monetary Economics*, 47(2), 221–248.
- Bushe, B. (2019). The causes and impact of business failure among small to micro and medium enterprises in South Africa. *Africa's Public Service Delivery and Performance Review*, 7(1), 1–26.
- Chow-Tan, H. K. (2017). Domestic liquidity conditions and monetary policy in Singapore. In *Cash in East Asia* (pp. 65–76). SMU Economics Research. https://ink.library.smu.edu.sg/soe_research/2135
- Durrani, A., Rosmin, M., & Volz, U. (2020). The role of central banks in scaling up sustainable finance—what do monetary authorities in the Asia-Pacific region think? *Journal of Sustainable Finance & Investment*, 10(2), 92–112.
- Hossain, M. A. I., Nahiduzzaman, M., Harymawan, I., Masud, A. A., & Dhar, B. K. (2020). Impact of COVID-19 on financial performance and profitability of banking sector in special reference to private commercial banks: Empirical evidence from Bangladesh. *Sustainability*, 14(10), 6260.
- Irungu, S. M., & Muturi, W. (2015). Impact of macroeconomic variables on performance of firms quoted in the energy and allied sector in the Nairobi securities exchange. *International Journal of Education and Research*, 3(10), 321–336.
- Kimutai, D. (2022). Liquidity management and financial performance of deposit-taking Saccos in Kericho County, Kenya (Doctoral dissertation). University of Nairobi.
- Kiptoo, G. K., Wanyoike, D. M., & Gathogo, G. M. (2015). Influence of cross-borrowing on financial performance of savings and credit cooperative societies in Eldama Ravine Sub-County, Kenya. *Journal of Economics and International Finance*, 11(1), 1–14.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607–610.
- Liu, F., Xu, J., & Xie, J. (2020). Is too much a good thing? The non-linear relationship between intellectual capital and financial competitiveness in the Chinese automotive industry. *Journal of Business Economics and Management*, 23(4), 773–796.



- Munene, E. N., Ndambiri, J. M., & Wanjohi, S. M. (2019). Effect of unsecured commercial bank loans on financial performance of savings and credit cooperative societies in Kenya. *International Journal of Accounting, Finance and Credit Risk*, 4(1), 12–19.
- Muriithi, J. G., & Waweru, K. M. (2017). Performance of commercial banks in Kenya. *International Journal of Finance & Banking Studies*, 6(3), 39–50.
- Mwaniki, S. (2017). Effect of macroeconomic variables on average financial performance of deposit-taking savings and credit cooperative societies in Nairobi, Kenya (Doctoral dissertation). KCA University.
- Mwanja, S. K. (2021). Effect of operational and market risk exposures on financial performance of DT-Saccos in Kenya. *International Journal of Research in Business and Social Science*, 10(5), 107–118.
- Nathan, M. M., & Jagongo, A. (2017). Monetary policy tools and inflation in Kenya. *Money*, 7(1), 86–97.
- Oganga, U., & Oyugi, P. (2015). Effect of commercial bank loans on financial performance of savings and credit cooperative societies in Kisumu, Kenya. *Greener Journal of Commerce and Accountancy*, 3(1), 9–19.
- Opala, I. T. (2014). Financial reporting quality among deposit-taking Saccos: What unties the ties? *Journal of Business & Management*, 1(1), 69–103.
- Otwoko, B. E. (2023). Interest rate drivers and financial performance of deposit-taking savings and credit cooperative societies in Kenya (Doctoral dissertation). JKUAT-COHRED.
- Otwoko, B., & Maina, K. (2021). Effect of liquidity risk on the financial performance of deposit-taking savings and credit cooperative organizations (SACCOs) in Kenya. *International Journal of Research in Business and Social Science*, 10(2), 203–211.
- SASRA. (2021). *The annual statutory report on the operations and performance of regulated SACCO societies in Kenya*. The SACCO Societies Regulatory Authority, Nairobi.
- Shibutse, R. L., Kalunda, E., & Achoki, G. (2019). Effect of liquidity and dividend payout on financial performance of deposit-taking SACCOs in Kenya. *International Journal of Commerce and Finance*, 5(2), 128–139.
- Song, H. J., Yeon, J., Lee, S., & Li, Z. (2021). The effect of an increase in federal minimum wage on the US hotel industry: A difference-in-differences approach. *Current Issues in Tourism*, 25(6), 887–900.
- Tekalign, M. (2017). The effect of national bank regulation on banks' profitability: Evidence from the private banks in Ethiopia (Doctoral dissertation). St. Mary's University.
- Tobin, J. (2005). Irving Fisher (1867–1947). *American Journal of Economics and Sociology*, 64(1), 19–42.
- Tsaurai, K. (2018). Investigating the impact of inflation on foreign direct investment in Southern Africa. *Acta Universitatis Danubius. Economica*, 14(4), 597–611.
- Wangui, M. M., & Muturi, W. (2016). Financial factors affecting performance of deposit-taking savings and credit cooperative societies in Kenya: A case of Kiambu County. *International Journal of Social Sciences and Information Technology*, 2(9), 1163–1179.