

MONEY SUPPLY AND FINANCIAL PERFORMANCE OF DEPOSIT TAKING SACCOS IN KENYA

David Irungu Thugu^{1*}, Gordon Opuodho²

^{1,2}Jomo Kenyatta University of Agriculture and Technology, Kenya

Corresponding Author:

davidthugu@gmail.com

Abstract

The Savings and Credit Cooperative Societies (SACCOs) are among the most prominent cooperative societies in Kenya, distinguished by unique traits compared to other cooperatives. In Kenya, Deposit-Taking (DT)-SACCOs have experienced a decline in growth rates concerning key performance parameters such as total assets, total deposits, and gross loans. Firms make various operational and strategic decisions—including financing, investing, and operational decisions that are typically moderated by the macroeconomic environment. However, many SACCOs operate without understanding the effect of macroeconomic variables, such as money supply, on their financial performance. This study aimed to establish the effect of money supply on the financial performance of savings and cooperative societies in Kenya. A causal research design was utilized, targeting all 184 deposit-taking SACCOs in Kenya. The study relied on secondary data for a ten-year period (2015-2024) and employed a panel data analytical model. The findings revealed a significant positive relationship between money supply and financial performance of DT-SACCOs in Kenya. Based on these findings, the study concludes that money supply has a statistically significant positive effect on the financial performance of DT-SACCOs in Kenya. Therefore, it is recommended that all SACCOs in Kenya should consider the impact of macroeconomic predictors to enhance financial performance. Additionally, policymakers and the Central Bank of Kenya should maintain stable and adequate liquidity to support the financial performance growth of DT-SACCOs.

Keywords: Money Supply, Macro-economic Factors, Financial Performance

1. Introduction

The economic performance of a country is judged by the stability in macroeconomic variables which include money supply, foreign exchange rate, rate of inflation, consumer price index, stock market index and interest rates (Mwaniki, 2018). It is the expectation of policymakers at both the macro and micro levels in an economy that these variables would remain stable and favourable to sustain business growth. Moreover, it is the wish of potential and existing investors that these macroeconomic elements remain favourable so as not to threaten the returns of their securities (Romer, 2012). Changes in monetary policy variables such as interest rate and money supply may end up affecting the financial performance of sectors in the economy dealing with finances, including savings and credit cooperative organizations (SACCOs). The state of a country's economy affects the performance of its organizations (Ouyang & Li, 2018).

Financial institutions contribute greatly to growth and development of the economy in many parts of the world (Ouyang & Li, 2018). They provide financial intermediation services by collecting and mobilizing resources for investors and businesses, which enhances economic development (Were & Wambua, 2014). Therefore, financial stability

for financial institutions such as deposit-taking savings and credit cooperative societies is of importance since it determines the financial wellness of these institutions and gives investors and customers confidence and trust. When SACCOs maintain a strong financial position, it provides assurance that they are capable of meeting their obligations, thereby attracting more investment and customer deposits. Asatiani, Basuki and Setiawan (2020) emphasize the role of financial stability in building public trust, indicating that a stable financial status encourages customers to engage in more transactions and investments with these institutions. Moreover, financial stability ensures the longevity and growth of SACCOs. A stable institution is better equipped to weather economic downturns and offer competitive interest rates to its members (Mwangi & Ombui, 2018).

Macroeconomics is the study of the economy as a whole (Romer, 2012). It focuses on the behaviour of an entire economy, which can be regional, national or international. Macroeconomic variables are variables pertinent to a broad economy at regional or national level and affect a large population (Khalid et al., 2012). These variables include interest rates, economic output, employment and unemployment, population, inflation, foreign exchange rates, money supply, government budget balances and finance, international trade balances and finance, and productivity (Muchiri, 2012). These macroeconomic variables play a major role in determining the financial performance of various players in the economy. These variables are controlled by the Central Bank of Kenya through the Monetary Policy Committee which meets at least once every two months.

Money supply is the total amount of money in circulation in a certain economy over a specific duration of time. These include possessions held by both organizations and individuals such as money, coins and savings accounts that can be used for payments and momentary investments (Chen, Du, & Hu, 2020). Money supply is a vital monetary policy tool used by a nation's central bank, regarded as the total amount of money circulating over a specific period in an economy, spanning assets including coins, cash, and checking and savings accounts balances held by individuals and businesses which can be used as short-term investments and make payments (Waweru, 2013).

Globally, the financial performance of SACCOs varies widely across countries. Recent trends underscore that well-governed SACCOs with robust financial management systems perform better financially compared to those with weak governance and limited capital bases. For example, SACCOs in Asia and Latin America have adopted digital financial services to improve operational efficiency and outreach (Kariuki et al., 2022). Nevertheless, challenges persist, including inadequate risk management practices and external shocks such as the COVID-19 pandemic, which exposed vulnerabilities in SACCOs' operational frameworks and financial stability (Ahmad & Javed, 2021).

In Africa, Savings and Credit Co-operative Societies (SACCOS) are among the Micro Finance Institutions (MFIs) which are owned and managed by their own members using co-operative principles. They are autonomous associations of persons who are united together voluntarily for the purpose of meeting their common economic and social needs through jointly owned and democratically controlled enterprises (Goodluck A. Mmari, 2019). African SACCOs are characterized by their community-focused approach, fostering savings mobilization and credit access among members. Research indicates that firm characteristics such as membership size, financial innovation, governance practices and other macro-economic variables significantly influence their financial performance (Njeru et al., 2021). For instance, SACCOs with larger membership bases often enjoy economies of scale, which enhance their profitability and sustainability.

The Savings and Credit Cooperative Societies (SACCOs) are among the most visible and important cooperative societies in Kenya. They are distinct and have unique traits as compared to other cooperatives. In Kenya, it is noticeable that there has been a decline in the rates of growth of Deposit Taking (DT)-SACCOs with respect to key performance parameters of total assets, total deposits and gross loans. The total assets of DT SACCOs grew at 10.10% in 2021 compared to a growth rate of 12.75% recorded in 2020. Prior to the regulatory reforms in Kenya of 2008, SACCOs were not prudentially regulated and the already existing deposit taking businesses (FOSAs) posed several risks to the safety of members' deposits and the stability of the financial sector (FSD, 2009).

The SACCO sector in Kenya has been described as a ticking bomb due to deteriorating liquidity and solvency levels. For the first time in seven years, the savings and credit cooperative societies' (SACCOs') returns have fallen below two percent of their assets, signaling the struggle to maximize member contributions. An analysis of data from the Sacco Societies Regulatory Authority (SASRA) shows the return on assets for the year ended December 2021 sank to 1.59 percent of SACCO assets, down from 2.65 percent the previous year. The last time SACCO return on assets (ROA) dipped below 2.0 percent was in 2015 when it stood at 1.89 percent (Emmy & Otinga, 2019). SACCOs' assets are primarily composed of net loans and advances, cash and cash equivalents, financial investments, prepayments and sundry receivables, and property and equipment. The societies mainly derive their incomes from loans to members, which increased by 9.67 percent in 2021 to reach Sh 608.75 billion from the Sh 555.05 billion reported in 2020. This was a slower growth than the 13.16 percent reported in 2020 and was blamed on the after-effects of the Covid-19 pandemic that are still being felt in the subsector and erratic weather patterns.

Firms make several operational and strategic decisions which are usually moderated by the macroeconomic environment; these include financing decisions, investing decisions and operational decisions (Owolabi, 2017). It is the hope of every business to make good advancements in financial performance and also grow. This has however not been the case as evidenced by corporate failures in the recent past. The falling of institutions is an indicator of the harshness of some conditions, most importantly the Gross Domestic Product (GDP) underlying factors. Examples of these factors include interest rates in the country and the coronavirus epidemic, which are factors beyond the control of any firm. SACCOs are created to build economic power for the community through mobilization of savings and empowering people by instilling good manners and behaviour in using savings and loans (OECD, 2017).

The urgency of this research is underscored by the persistent decline in the growth rates of DT-SACCOs in Kenya and the lack of understanding among many SACCOs regarding the effect of macroeconomic variables such as money supply on their financial performance. The capping of interest rates in Kenya in 2016 put SACCOs in stiff competition with banks since SACCO members are exposed to borrowing from banks at interest rates close to the rates offered by the SACCOs. The Kenyan Banking Amendment Bill (2016) became an act of parliament and therefore law in 2016. Amongst other provisions, the law states that the maximum interest rate chargeable for a credit facility in Kenya should not be more than four percent above the base rate set and published by the Central Bank of Kenya (Wasike, 2016). Without a clear understanding of how money supply influences financial performance, efforts by SACCOs to enhance their financial stability and competitiveness may remain unfocused and ineffective.

Previous studies have examined the relationship between macroeconomic factors and financial performance in various contexts. Desaro (2012) conducted a study on the effect of macroeconomic factors on the financial performance of commercial banks in Kenya and concluded that macroeconomic variables can influence the performance of commercial banks. Olweny and Omondi (2011) sought to find out the impact of macroeconomic factors on the performance of the stock market. The results showed evidence that foreign exchange rate, interest rate and inflation rate have a significant effect on stock market volatility. However, there is a notable gap in the literature regarding the specific effect of money supply on the financial performance of deposit-taking SACCOs in Kenya. Through SACCOs, there can be financial flows into the community, a safe place for people's savings, and battling poverty by improving the members' economic and social conditions. They empower powerless individuals from exploitation by powerful individuals or institutions. This is done by helping members of a given community to have access to various affordable financial services. It is in this context that this study seeks to establish the effect of money supply on the financial performance of deposit-taking savings and cooperative societies in Kenya.

Therefore, this study aims to establish the effect of money supply on the financial performance of deposit-taking saving and cooperative societies in Kenya. Specifically, the research seeks to determine the direction and magnitude of the relationship between money supply and financial performance indicators such as return on assets (ROA) and return on equity (ROE) among DT-SACCOs. By addressing this objective, the study aims to provide a more comprehensive understanding of how monetary policy influences the financial sustainability of SACCOs and to contribute to both academic literature and practical efforts to enhance the performance of these important financial institutions.

The findings of this research are expected to provide empirical evidence that will inform policy development, guide SACCO management in strategic decision-making, and offer practical insights for the Central Bank of Kenya and other regulators in formulating monetary policies that support the growth and stability of the SACCO sector. By achieving these objectives, the study aims to contribute to the stability of the financial sector and the enhancement of financial inclusion in Kenya. Ultimately, this research aspires to support the sustainable growth of SACCOs through improved understanding of the critical role of money supply in shaping their financial performance. The article is organized as follows. The next section discusses the theoretical background and hypothesis development, followed by the research methods. The results and discussion are then presented, and the final section concludes the study.

2. Theoretical Background

2.1 Modern Portfolio Theory

The modern portfolio theory (MPT) is attributed to Harry Markowitz (1952). MPT allows investors to analyze their returns vis-à-vis risk. The capital asset price model (CAPM) was developed one decade later based on his work to improve MPT. To describe the risks and returns of portfolios, the result of CAPM (and its extended versions) is widely used, also in measuring performance (Schulmerich, Leporcher & Eu, 2015). This theory of investments emphasizes minimization of risk by combining various proportions of several assets or maximizes expected returns from a given level of portfolio risk (Elton, Gruber, Brown & Goetzmann, 2009).

The theory encourages investors to diversify their assets in order to hedge against unsystematic risk (Shipway, 2009). The theory focuses on choosing a combination of

assets which has lower risk compared to an individual asset. In investment, this concept is referred to as diversification (Rani, 2012). The likelihood of this can be seen automatically since dissimilar kinds of assets frequently change in value in opposite ways. Through diversification, risk is lowered, even if the return of assets is not negatively correlated (Nzongang & Atemnkeng, 2006). The fundamental concept of MPT that makes it relevant to this study is that when selecting assets in an investment portfolio, it is vital to study how the price of each asset changes compared to how the prices of every other asset in the portfolio change (Omisore, Yusuf & Christopher, 2011).

DT-SACCOs should consider diversifying their investment portfolio so as to optimize unsystematic risk. This theory underpins this study because the concept of revenue diversification follows the concept of portfolio theory. When DT-SACCOs diversify their investments, they stabilize hence their income becomes less volatile, which improves performance.

2.2 Keynesian Theory of Money

Keynes developed the theory by rejecting the notion that money supply and price level had a direct relationship as per the classicists. The assumptions made by classicists that output and velocity are fixed were also rejected. The proponents of the theory were Alfred Marshall, Arthur Cecil, and Irving Norton Fisher (Dimund, 1997). The alteration in money supply affects various macroeconomic variables such as interest rate, level of employment, output and income. There exists unemployment equilibrium. Production rises in response to an increase in the money supply. The aggregate demand and supply elasticity of the aggregate production will determine the equivalent influence on price level (Dimund, 1997).

Due to underemployment, an increment in money supply declines the interest rate. This leads to an increment in investment levels. Hence, via the multiplier effect, income, output and employment will rise. The existence of constant return to scale makes price remain constant despite the increment in output because of unemployment. Output, employment and effective demand rise equally which in turn makes money supply increase as well. Moreover, when full employment is attained, output is no longer affected by the variations in money supply. The theory shows the relationship between money supply and investment as illustrated above. This made it easier to comprehend how monetary policy and the financial health of domestic and international financial institutions relate to one another.

2.3 Quantity Theory of Money

The Quantity Theory of Money (QTM) was advanced by Milton Friedman and Irving Fisher (1929). The point of view argues that there is a connection between an economy's aggregate prices and the entire volume of money supply. The essence of QTM is that one unit change in supply of money results in a proportional alteration in the inflation rate (Sheposh, 2022). QTM is central to this research as it offers concepts on how a country's money circulation is determined by that country's fiscal authority. Money supply is also a tool employed by the Central Bank of Kenya (CBK) to manage the amount of money within the economy (Mulwa, 2015). For that reason, an increase in money supply enhances the financial institutions' capacity to grant loans to clients and vice versa, and so it affects their performance. This means that to lower the rate of inflation in the market, the government establishes policies to control the money supply.

2.4 Empirical Review: Money Supply and Financial Performance

Money supply is the entire stock of currency and other liquid instruments circulating in a country's economy at a particular time. Money supply is also known as money stock and includes safe assets like coins, cash and balances held in checking and savings accounts that businesses and individuals can use to make payments or hold cash in short-term investments. Money supply has an impact on price level, inflation and the business cycle. The money supply data is collected, recorded and published periodically by the central bank. Money supply is measured and classified as M0, M1, M2 and M3 according to the types and size of the account. M0 and M1, also known as narrow money, include coins and notes in circulation and other money equivalents that can be converted easily to cash. M2 includes M1 and in addition short-term time deposits in banks and certain money market funds. M3 includes M2 and in addition long-term deposits. M3 is a category of money supply which includes all funds in M2, individual holdings in accounts, savings, bonds, treasury bills with maturity of less than one year, commercial papers and bankers' acceptances.

Local studies on how money supply is related to the performance of stock prices are available. Ndunda (2016) studied money supply and the equity market using data between 2005 and 2014. Market capitalization was used to measure performance. Money supply and stock prices were noted to be related. This study was however confined to the equity market. An analysis of firms listed in the stock exchange may yield a better view of the market. Shrestha and Subedi (2015) researched the role of money supply on changes in prices of stocks in Nepal. They demonstrated that the performance of stock prices went in tandem with growth in money supply (Shrestha & Subedi, 2015). When money supply improves, prices of stocks improve over time. The study was however limited to Nepal and may thus limit generalizability to all markets, especially because of the different market dynamics.

Ouma and Miriu (2014) examined how money supply played a role in the performance of prices of stocks between 2003 and 2013. Using tests of Ordinary Least Square (OLS) and descriptive design, they noted that money supply and stock prices tend to be related (Ouma & Miriu, 2014). The study was however limited by its inability to be comparable with other studies due to their scope, the period reviewed and the methodology employed.

Borio et al. (2015) in their study focused on monetary policy and its implications on banks' profitability. It was done using a non-linear method where for the years 1995 to 2012, 109 intercontinental banks across fourteen developed countries were used. The outcome shows that money supply has a momentous positive association with bank profitability. Nonetheless, it was centered on ROA to point to performance. This study is different as it looked at financial performance in terms of ROE. Also, the study was on developed countries unlike Kenya which is a developing country.

Ndugbu and Okere (2015) carried out research on fiscal policy and its consequence on the performance of Nigerian banks. Data collected covered the period 1993 to 2013. They focused on CBR, CRR, money supply and liquidity ratio and bank performance. Results from multiple regression scrutiny prove that supply of money has a positive and inconsequential influence on performance. However, the research concentrated on banks in Nigeria; therefore, such results may not be applicable to Kenya. This is accredited to the reality that each country is unique with a different economy size, market size and concentration. This research focused on banks situated in Kenya.

Zhang (2021) examined the macroeconomic factors and their effect on the Kenyan bond market. Money supply was identified as the independent variable while the bond

market performance was the dependent variable. The study's results demonstrated a considerable favorable link between money supply and bond market performance. Further, the findings demonstrated that money supply showed dual causality with bond market performance. The major conceptual constraint from the study is that it did not examine other key macro-economic variables like exchange rate volatility, hence this study helped in addressing this gap.

A study by Schrank (2023) assessed monetary policy impact on Thailand's financial markets during the Covid-19 epidemic. The monetary policy was measured based on money supply while financial markets were assessed from the standpoint of the performance of the bond markets and stock markets. A period of fifteen years was considered, divided into the time prior to the Covid-19 epidemic and the time after the pandemic. The findings indicated a major association between money supply and government bond yields, meaning that as the supply of money increases, the yields on government bonds also increase. The study also found that during the pandemic, money supply changes had a larger impact on the bond yields in comparison to the time when the pandemic was non-existent.

2.5 Conceptual Framework

The conceptual framework illustrates the relationship between the independent variable (money supply) and the dependent variable (financial performance of DT-SACCOs). Money supply, measured through monetary aggregates (M1, M2, M3), is expected to influence the financial performance of DT-SACCOs, measured through indicators such as return on assets (ROA) and return on equity (ROE). The framework posits that an increase in money supply enhances the liquidity position of financial institutions, enabling them to extend more credit to members, thereby improving their interest income and overall financial performance.



Figure 1. Conceptual Framework

3. Methods

3.1 Research Design

This study adopted the causal research design. Cause and effect between variables can be achieved through causal research design (Mugenda & Mugenda, 2011). Causal research design is suitable in determining the relationship between two or more variables in a study and helps answer the where, how, why and what questions in a study population. This design was deemed appropriate because it allows the researcher to establish the causal relationship between money supply (independent variable) and financial performance (dependent variable) of deposit-taking SACCOs in Kenya.

3.2 Population and Sample

The target population for this research project was all the 184 deposit-taking SACCOs in Kenya (SASRA, 2025). The study period was eleven years, starting from 2014 to 2024. The sample frame was received from the registered DT-SACCOs and a census was deemed suitable. Sampling technique is considered essential as the methodology utilized

determines whether the sample is representative of the entire population (Cooper & Schindler, 2014). According to Saunders et al. (2016), a census is the complete enumeration of a population or groups at a point in time with respect to well-defined characteristics. Therefore, all 184 DT-SACCOs were included in the study to ensure comprehensive representation and to avoid sampling bias.

3.3 Data Collection Techniques

The study relied on secondary data for a period of 10 years from 2014 to 2024. Secondary data is data which was originally collected for another purpose but can be analysed to provide different conclusions (Kaneza, 2016). The secondary data was optimal as it was readily available. Data on money supply was obtained from the Central Bank of Kenya website. Data on financial performance was extracted from the financial statements of the respective SACCOs, as well as from SASRA (Sacco Societies Regulatory Authority) annual reports and the CBK database.

3.4 Operational Definitions of Research Variables

Table 1. Operational Definitions of Research Variables

Variable	Definition	Measurement	Scale	Source
Financial Performance (Y)	The financial health and profitability of DT-SACCOs measured through key performance indicators	Return on Assets (ROA) = Net Income / Total Assets; Return on Equity (ROE) = Net Income / Total Equity	Ratio	SASRA Reports, Financial Statements
Money Supply (X)	The total amount of currency and other liquid instruments circulating in Kenya's economy at a particular time	Monetary aggregates (M1, M2, M3) measured quarterly or annually	Ratio	Central Bank of Kenya (CBK)

Source: Author's construction (2025)

3.5 Data Analysis Techniques

The data was analyzed using a time series analytical model. Given that the data involved multiple entities (184 DT-SACCOs) over multiple time periods (11 years), panel data regression analysis was employed. Panel data analysis combines cross-sectional and time-series data, allowing for more efficient estimation and control for unobserved heterogeneity across entities.

The study adopted the following panel data regression model:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \hat{\epsilon}_{it}$$

Where:

Y_{it} = Financial performance of DT-SACCO i at time t (measured by ROA or ROE)

α = Constant (intercept)

β_1 = Regression coefficient for money supply

X_{1it} = Money supply at time t

$\hat{\epsilon}_{it}$ = Error term

Prior to regression analysis, diagnostic tests were conducted to ensure the robustness of the model, including tests for normality, multicollinearity, heteroscedasticity, and autocorrelation. Model selection tests such as the Chow test, Hausman test, and Lagrange Multiplier test were employed to determine the most appropriate panel data regression model (Common Effect Model, Fixed Effect Model, or Random Effect Model). Hypothesis testing was conducted at a significance level of $\alpha = 0.05$ (95% confidence level). All statistical analyses were performed using appropriate econometric software (STATA).

4. Results and Discussion

4.1 Descriptive Statistics

Table 2. Descriptive Statistics Results

Statistic	Money Supply (Billions)	Financial Performance (%)
Mean	3,526,578	14.91869
Median	3,415,324	14.58446
Maximum	5,488,700	70.42185
Minimum	2,291,820	0.000000
Std. Dev.	785,203	4.766397
Skewness	-0.002242	1.749981
Kurtosis	1.547059	18.43086
Jarque-Bera	141.3529	16763.77
Probability	0.000000	0.000000

Source: Data processed by the author (2025)

From Table 1, money supply in billions of Kenya shillings had a mean of 3,526,578 billion. The median value was registered to be 3,415,324 billion. The associated maximum value was found to be 5,488,700 and the minimum value was 2,291,820. The skewness was -0.002242, indicating that money supply was not normally distributed. Negative skewness meant asymmetrical distribution for money supply with a long tail to the right. The kurtosis value of 1.547059 indicated that the data for money supply was not normally distributed. The standard deviation, which is the square root of the variance, was found to be 785,203.0 billion Kenya shillings. The standard deviation is useful when measuring the distribution of variables before using them in regression analysis. The Jarque-Bera test indicates reject normality was found to be 141.3529 with a p-value of 0.000000, which is less than 0.05, indicating the absence of a normal distribution for money supply.

Financial performance (ROA) of DT-SACCOs had a mean of 14.71437 percent, indicating an average return on assets of 14.71437 percent for all DT-SACCOs. From Table 1, skewness was 0.434033, indicating asymmetrical distribution for financial performance (ROA) with a long tail to the left, meaning an increase in performance in the observed periods. The median value was found to be 14.58446 percent returns. The associated maximum value was found to be 70.42185 and the minimum value was 0.000000. The kurtosis value of 18.43086 indicated that the data for financial performance (ROA) was not normally distributed. The Jarque-Bera test indicates reject normality at 5% significance level. The standard deviation of financial performance was 4.766397. The Jarque-Bera test indicates reject normality was found to be 16763.77 with a p-value less than 0.05, which indicates the absence of a normal distribution.

4.2 Normality Test

Table 3. Shapiro-Wilk W Test for Normal Data

Variable	W	V	z	Prob>z
Financial Performance	0.89547	101.587	11.659	0.74064
Money Supply	0.93111	66.945	10.607	0.24544

Source: Data processed by the author (2025)

The Shapiro-Wilk W Test of Normality for financial performance and money supply is shown in Table 2. The findings show that all the variables are in line with the null hypothesis that they are normally distributed. All the test statistics are statistically significant as shown by insignificant p-values (Probability>z 0.74064 and 0.24544). Since all these p-values are insignificant, the study thus concludes that the test statistics will be optimal and adequate.

4.3 Stationarity Test

Table 4. ADF-Fisher Chi-square Unit Root Test

Method	Statistic	Prob.
ADF - Fisher Chi-square	605.288	0.0000

Source: Data processed by the author (2025)

The findings of the unit root approach used to determine whether research variables were stationary are shown in Table 3. The findings demonstrate that all study variables—financial performance and money supply—are stationary at the level. The ADF-Fisher Chi-square has a value of 605.288 and a p-value of 0.0000, which is less than 0.05, indicating that all the variables are stationary at level. This will be important for regression analysis to avoid sub-optimal results.

4.4 Granger Causality Tests

Table 5. Pairwise Granger Causality Tests

Null Hypothesis	F-Statistic	Prob.
Money supply does not granger cause financial performance	0.00114	0.9731
Financial performance does not granger cause money supply	0.00177	0.9664

Source: Data processed by the author (2025)

The results of the Granger causality tests are shown in Table 4. The critical value was found to be 0.00114 for money supply not granger causing financial performance, with an associated p-value of 0.9731. For financial performance not granger causing money supply, the value was 0.00177 with an associated p-value of 0.9664. The checking of Granger causality is important for the optimal introduction of the lags and optimal model identification. For all the pairs, there is no Granger causality problem.

4.5 Linearity Test

Table 6. Ramsey RESET Test Linearity Test

Test Statistic	Value
F-statistic	1.274
Probability	0.281

Source: Data processed by the author (2025)

To assess whether the relationship between the dependent variable (financial performance) and the independent variable is linear, the Ramsey RESET test was conducted. The test examines whether non-linear combinations of the fitted values help

explain the dependent variable. Failure to reject the null hypothesis implies that the model is correctly specified and linear.

The results in Table 5 indicate that the Ramsey RESET test has a probability value greater than 0.05. This implies that the null hypothesis of correct model specification cannot be rejected. Therefore, the relationship between financial performance and the explanatory variable (money supply) is linear. This confirms the appropriateness of using a linear regression model for the study.

4.6 Correlation Analysis

Table 7. Correlation Analysis Results

Variables	Financial Performance	Money Supply
Financial Performance	1	
Money Supply	0.528	1
p-value	0.000	

Source: Data processed by the author (2025)

Correlation is significant at the 0.01 level (2-tailed).

From Table 6, it can be observed that the correlation between the independent variable and the dependent variable was high and positive at 0.528. The implication was that the high correlation between financial performance and money supply implied the presence of a significant association between the macroeconomic factor (money supply) and financial performance.

4.7 Bivariate Regression Analysis Results

A bivariate linear regression analysis was conducted to examine the effect of money supply on financial performance (ROA) of DT-SACCOs.

Table 8. Model Summary

R-squared	Adjusted R-squared	Durbin-Watson stat	F-statistic	Prob(F-statistic)
0.27917	0.27512	1.89657	31.085067	0.0002

Source: Data processed by the author (2025)

Table 7 presents the results on the model's strength and explanatory power. The model shows that the explanatory power of the independent variable is 27.5% on financial performance of DT-SACCOs. The Durbin-Watson statistic value of 1.89657 shows that there is no significant autocorrelation in the residuals.

Table 9. Bivariate Regression Analysis for Money Supply (Random Effect Model)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Money Supply	0.002105	0.007492	2.946883	0.0002
C	1.874156	3.914048	3.286896	0.0010

Source: Data processed by the author (2025)

The fitted regression model is:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \epsilon_{it}$$

$$ROA = 1.874156 + 0.002105 (\text{Money Supply}) + \epsilon$$

Where:

Y = Financial Performance (ROA)

X₁ = Money Supply

ε = Error Term

β₀ = Intercept (1.874156)

β₁ = Coefficient (0.002105)

4.8 Discussion of Findings

From Table 8, the regression coefficient of money supply was found to have a positive and statistically significant relationship with financial performance ($\beta = 0.002105$, $p = 0.0002$). This value shows that, holding other variables in the regression model constant, an increase in money supply by one unit causes the financial performance of DT-SACCOs to increase by 0.002105.

The positive effect shows that there is an increasing association between money supply and financial performance (ROA) of DT-SACCOs. This may be attributed to the fact that an increase in money supply enhances liquidity levels and credit expansion, which leads to an increase in the profitability of SACCOs. When the Central Bank increases the money supply, financial institutions have more funds available to lend to customers, which directly impacts their interest income and overall financial performance.

The coefficient was found to be positive and statistically significant with a z-statistic value of 2.946883. The p-value was found to be 0.0002, which is less than the significance level of 0.05. Therefore, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This implies that money supply has a significant positive effect on the financial performance of deposit-taking Savings and Credit Cooperative Societies (DT-SACCOs) in Kenya.

These findings are consistent with the Quantity Theory of Money (QTM) advanced by Milton Friedman and Irving Fisher, which argues that changes in money supply affect economic activity and financial performance. The findings are also supported by the Keynesian Theory of Money, which demonstrates that an increase in money supply reduces interest rates, leading to increased investment levels and, through the multiplier effect, higher income, output, and employment.

Similar findings were reported by Borio et al. (2015), who found that money supply has a momentous positive association with bank profitability. Shrestha and Subedi (2015) also demonstrated that the performance of stock prices went in tandem with growth in money supply. Additionally, Ouma and Miriu (2014) noted that money supply and stock prices tend to be related. Zhang (2021) further demonstrated a considerable favorable link between money supply and bond market performance.

However, these findings differ from those of Ndugbu and Okere (2015), who found that money supply had a positive but inconsequential influence on the performance of Nigerian banks. This discrepancy may be attributed to differences in economic structures, market dynamics, and regulatory environments between Kenya and Nigeria.

In conclusion, the results of this study confirm that money supply plays a crucial role in determining the financial performance of DT-SACCOs in Kenya. Therefore, policymakers and the Central Bank of Kenya should maintain stable and adequate liquidity to support the financial performance growth of DT-SACCOs in the country.

5. Conclusion

This study aimed to establish the effect of money supply on the financial performance of deposit-taking Savings and Credit Cooperative Societies (DT-SACCOs) in Kenya. The research focused on all 184 DT-SACCOs in Kenya over the period 2014 to 2024, using a causal research design and panel data regression analysis. Based on the results of data analysis, hypothesis testing, and discussion, the following conclusions can be drawn.

The regression coefficient for the association between money supply and financial performance in DT-SACCOs was found to be significant ($p < 0.05$) and positive. The interpretation is that an increase in money supply enhances liquidity levels and credit

expansion, which leads to an increase in the profitability of SACCOs. When the Central Bank increases the money supply, financial institutions have more funds available to lend to members, which directly impacts their interest income and overall financial performance. The positive effect shows that there is an increasing association between money supply and financial performance (ROA) of DT-SACCOs.

The study concludes that money supply has a positive and statistically significant effect on the financial performance of DT-SACCOs in Kenya. An increase in money supply enhances liquidity in the economy, supports credit expansion, and increases savings mobilization, which collectively improve profitability. Consequently, the null hypothesis that money supply does not significantly affect the financial performance of DT-SACCOs is rejected, and the alternative hypothesis that money supply has a significant positive effect on financial performance is accepted.

These findings are consistent with the Quantity Theory of Money (QTM) advanced by Milton Friedman and Irving Fisher, which argues that changes in money supply affect economic activity and financial performance. The findings are also supported by the Keynesian Theory of Money, which demonstrates that an increase in money supply reduces interest rates, leading to increased investment levels and, through the multiplier effect, higher income, output, and employment. The results further align with previous empirical studies by Borio et al. (2015), Shrestha and Subedi (2015), Ouma and Miriu (2014), and Zhang (2021), all of which found a positive relationship between money supply and financial performance in various financial sectors.

Based on the findings and conclusions of the study, the following recommendations are made to enhance the financial performance of DT-SACCOs in Kenya:

- 1) Given that money supply was found to have a positive and significant effect on financial performance, the Central Bank of Kenya (CBK) should ensure adequate liquidity in the financial system to support credit growth and savings mobilization among DT-SACCOs. Controlled expansion of money supply can stimulate economic activity without triggering inflationary pressures. The CBK should adopt a balanced monetary policy that supports the growth of the SACCO sub-sector while maintaining overall price stability.
- 2) DT-SACCOs should strategically take advantage of periods of high liquidity by expanding lending activities, introducing competitive savings products, and improving credit appraisal systems to minimize default risks while maximizing profitability. SACCOs should also invest in technology and innovation to enhance operational efficiency and reach a wider membership base.
- 3) Regulatory bodies such as the SACCO Societies Regulatory Authority (SASRA) should enhance supervisory frameworks to ensure that DT-SACCOs maintain sound financial management practices in the face of macroeconomic fluctuations. Regular monitoring and evaluation of SACCO performance should be conducted to identify early warning signs of financial distress.
- 4) Capacity-building programs focusing on macroeconomic risk management, financial forecasting, and strategic planning should be provided to SACCO managers and board members to strengthen resilience and long-term sustainability. Training on the implications of monetary policy changes on SACCO operations would enable management to make informed strategic decisions.

This study has several limitations. The research focused exclusively on money supply as the macroeconomic variable, leaving room for other macroeconomic factors such as interest rates, inflation, and exchange rates to be explored in future research. The study

period of 2014 to 2024 may not capture longer-term trends or cyclical variations in money supply and financial performance. Additionally, the study relied on secondary data, which may have limitations in terms of accuracy and completeness.

Future research should expand the scope to include other macroeconomic variables such as interest rates, inflation, foreign exchange rates, and gross domestic product (GDP) to develop a more comprehensive model of financial performance determinants for DT-SACCOs. Comparative studies across different financial sectors or countries could also provide valuable insights into how contextual factors influence the relationship between money supply and financial performance. Despite these limitations, this study contributes to the literature by providing empirical evidence on the positive effect of money supply on financial performance in the Kenyan DT-SACCO sub-sector, offering practical insights for policymakers, regulators, and SACCO managers seeking to enhance financial performance and sustainability.

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