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Government Securities Investment and Financial Performance of Deposit-Taking Savings and Credit Co-Operative Societies in Kenya

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Abstract
This study examined the influence of government securities investment on the financial performance of Deposit-Taking Savings and Credit Co-operative Societies (DT-SACCOs) in Kenya. Government securities, comprising treasury bills and treasury bonds, represent the investment dimension with the strongest theoretical and empirical link to SACCO financial outcomes as measured by Return on Assets (ROA). A descriptive research design was employed using census-based secondary panel data from all 44 licensed DT-SACCOs in Kenya for the period 2018–2023 (264 observations). Data were sourced from individual SACCO audited financial statements, SASRA reports, and SACCO websites. A fixed-effects panel regression model was applied following a Hausman specification test. Government securities investment had a positive and statistically significant influence on financial performance (Coef. = 0.5688, $p < 0.001$). The within-entity R-squared of 0.4127 indicates that over 41% of the variation in ROA is explained by this variable alone. DT-SACCOs should maintain and strategically expand allocations to government securities given their low-risk, predictable yield characteristics. Policymakers should design frameworks that incentivize SACCO investment in government instruments while ensuring appropriate maturity diversification across treasury bills and bonds.

Keywords: *Government Securities, Treasury Bills, Treasury Bonds, DT-SACCOs, Financial Performance, Return on Assets*

INTRODUCTION

Kenya's Savings and Credit Co-operative Societies (SACCOs) occupy a pivotal position in the country's financial inclusion landscape. Deposit-Taking SACCOs (DT-SACCOs), licensed and supervised by the SACCO Societies Regulatory Authority (SASRA), offer quasi-banking services — including current accounts, salary processing, advances, and mobile-enabled transactions — to members who may face barriers to conventional banking (SASRA, 2024). As at December 2020, 215 DT-SACCOs were active within Kenya's cooperative sector, out of 3,280 registered SACCOs, constituting the most regulated and financially sophisticated tier of the movement.

Despite their structural importance, DT-SACCOs have faced persistent financial challenges. SASRA (2022) data indicate that on average, these institutions recorded losses escalating from 20% to 35% of portfolios between 2021 and 2022, fuelled by increased competition from

commercial banks, declining interest income from rate controls, and volatility in investment returns. The need for effective investment diversification strategies has therefore become urgent.

Among the investment avenues available to DT-SACCOs — equity shares, money market instruments, real estate, and government securities — the latter occupies a distinctive position. Government securities, primarily treasury bills and treasury bonds issued by the Kenyan government through the Central Bank of Kenya (CBK), are characterized by sovereign-backed guarantees, predictable coupon payments, and active secondary market trading. These features make them especially suitable for institutional investors like SACCOs, whose primary obligation is to protect member deposits while generating competitive returns.

While extant literature has explored SACCO investment behavior broadly (Kebiro, 2019; Morwabe & Muturi, 2019; Gachenga, 2022), targeted empirical investigation of government securities' specific influence on DT-SACCO financial performance using panel data methods is sparse. This study fills that gap. Anchored in the Q Theory of Investment (Tobin & Brainard, 1968) and the Modern Portfolio Theory (Markowitz, 1952), the study investigates how government securities investment influences the ROA of 44 DT-SACCOs in Kenya over a six-year panel (2018–2023). The guiding research question is: To what extent does investment in government securities influence the financial performance of Deposit-Taking SACCOs in Kenya?

LITERATURE REVIEW

Theoretical Underpinnings

The study is grounded in two complementary theoretical frameworks. First, the Modern Portfolio Theory (MPT), developed by Markowitz (1952), provides the foundational logic for investment diversification. MPT posits that rational investors construct portfolios to maximize expected returns for a given level of risk, and that diversification across non-perfectly correlated assets reduces unsystematic risk. Critically, the theory recognizes that systematic risk — affecting all market assets — cannot be eliminated through diversification alone, positioning low-beta, government-backed securities as essential stabilizers within any institutional portfolio.

Applied to DT-SACCOs, MPT prescribes an optimal portfolio blend in which government securities serve as low-variance anchors. Treasury bills, with short maturities (91 to 364 days), provide liquidity and near-zero default risk. Treasury bonds, with longer maturities and higher coupon rates, offer interest income stability over multi-year horizons. By combining both instruments, SACCOs can align their portfolio yield curve with their own maturity profiles and member obligations.

The second theoretical anchor is the Q Theory of Investment, proposed by Tobin and Brainard (1968). Tobin's Q ratio — the ratio of a firm's market value to the replacement cost of its assets — guides investment decisions: when $Q > 1$, further investment is value-accretive. In the SACCO context, investment in government securities is particularly relevant because Tobin's Q helps predict whether allocating incremental resources to bond markets generates a marginal return exceeding the cost of funds. The theory underscores that investment-level decisions should be driven by marginal yield comparisons, making it a natural framework for evaluating the efficiency of government securities as a SACCO investment vehicle.

The Keynesian Theory of Investment (Keynes, 1936) also informs this study by emphasizing that investment decisions are governed by the Marginal Efficiency of Capital (MEC) relative to prevailing interest rates. When market interest rates fall, investment in fixed-income government instruments becomes relatively more attractive as a stable income source, consistent with

observed upward trends in SACCO allocations to government securities in the post-2020 low-rate environment documented in this study.

Conceptual Framework

Government securities investment, the focal independent variable, is operationalized as the ratio of treasury bills to treasury bonds held by each DT-SACCO in a given year. This ratio captures not only the quantity of government securities held but also the SACCOs' preferences between short-term (liquidity-focused) and long-term (income-focused) instruments. A higher ratio indicates a preference for treasury bills; a lower ratio suggests greater allocation to bonds. Both instruments contribute positively to financial performance through distinct channels.

Treasury bills provide SACCOs with near-cash liquidity, enabling the organization to meet short-term obligations to members while earning a risk-free rate of return. Their short-term nature aligns with SACCOs' need for operational flexibility and responsive financial management. Treasury bonds, on the other hand, generate sustained coupon income over periods typically ranging from 2 to 30 years. For SACCOs with long-term member savings pools, bonds match asset-liability duration more precisely, reducing reinvestment risk and enhancing income predictability.

Financial performance in this study is measured using Return on Assets (ROA) — net income divided by total assets — which captures management efficiency in deploying institutional resources to generate profits. ROA is widely applied in SACCO performance literature as it accounts for the asset base against which returns are measured, making it appropriate for comparisons across SACCOs of varying sizes (Murthy & Sree, 2018).

Independent Variable **Dependent Variable**

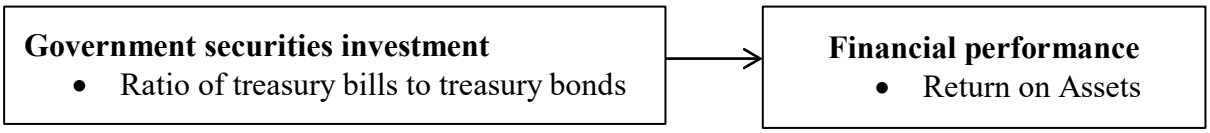

Figure 1: Conceptual Framework

Empirical Review

Empirical studies on the relationship between government securities investment and institutional financial performance yield predominantly positive evidence. Musau (2021) investigated bond investment decisions and SACCO performance in Kitui County, Kenya, using an empirical time-series design across twelve SACCOs over 2006–2020. Employing simple multivariate and Pearson correlation analyses, the study found that bond investment decisions significantly affected SACCO performance, with positive coefficients indicating enhanced profitability from bond holdings.

At the international level, Hanin, Noriza and Mohamad (2022) analysed 12 publicly listed insurance companies in Turkey that had invested in both corporate and treasury bonds, finding a significant positive relationship between bond investment and financial profitability. This evidence, drawn from a regulated financial institution environment comparable to Kenyan DT-SACCOs, reinforces the universality of the government securities–performance relationship. Ayodele, Afolabi and Olaoye (2022) similarly confirmed that long-term bond interest significantly influenced the financial performance of mutual firms in Nigeria, recommending that monetary authorities incorporate bond-performance dynamics into policy formulations.

In South Africa, Nisra, Peng and Ashraf (2018) found a low but statistically positive effect of bond investment on the financial performance of commercial banks, emphasizing bonds' role in revenue diversification even within well-capitalized banking systems. These findings suggest

that the financial stabilizing effect of government securities transcends institutional type and national context.

The lone dissenting voice is Mwangi, Makau and Kosimbei (2019), who reported a statistically significant negative association between bond investment and financial performance (measured by ROA and ROI) among non-financial firms listed on the Nairobi Securities Exchange. The authors attributed this finding to the opportunity cost of bond holdings in capital-intensive manufacturing and industrial sectors, where retained earnings deployed to operational expansion generate higher marginal returns than fixed-income securities. This sectoral context is fundamentally distinct from DT-SACCOs, whose investment mandates are institutionally conservative and regulated. The negative association therefore represents a valid boundary condition rather than a contradiction of the broader positive evidence.

Morwabe and Muturi (2019) studied 43 DT-SACCOs and found that a model containing government securities as part of SACCO investment decisions had a strong positive influence on DT-SACCO profitability. This Kenyan-specific evidence closely mirrors the conditions of the current study and directly validates the hypothesized positive relationship.

RESEARCH METHODOLOGY

Research Design and Data

A descriptive research design was employed, utilizing secondary panel data from all 44 licensed DT-SACCOs operating in Kenya as recorded in SASRA's 2020 register. The study covered six annual observation periods (2018–2023), yielding a balanced panel of 264 observations (44 SACCOs × 6 years). A census approach — using all 44 DT-SACCOs rather than a sample — was adopted to ensure comprehensive representation of the sector and to allow for robust within-entity variation analysis. Secondary data were sourced from individual SACCO audited annual financial statements, income statements, statements of financial position, cash flow statements, and SASRA reports.

Government securities investment was measured as the ratio of treasury bills to treasury bonds held by each DT-SACCO annually. Financial performance was proxied by Return on Assets (ROA), computed as net income divided by total assets. The study period (2018–2023) was deliberately selected to capture both the pre-COVID baseline performance, the COVID-19 shock year (2020), and the post-shock recovery phase (2021–2023), providing a nuanced picture of investment-performance dynamics across varied economic conditions.

Analytical Model

The study applied a panel fixed-effects linear regression model specified as:

$$Y\_it = \beta_0 + \beta X\_it + \varepsilon\_it$$

Where Y_it = ROA of SACCO i in period t; X = Government securities investment; β_0 = Constant; β = Regression coefficient; ε = Error term. Analysis was performed in STATA 17.

FINDINGS AND DISCUSSION

Descriptive Statistics

Table 1 presents the descriptive statistics for all variables over the 264 observations spanning 2018–2023.

Table 1: Descriptive Statistics

Variable	Minimum	Maximum	Mean	Std. Dev.
Government Securities Inv.	0.7284	1.4739	1.0908	0.3279
Financial Performance (ROA)	1.52%	2.65%	2.23%	0.53%

Source: Secondary data from SACCO audited financial statements and SASRA reports (2018–2023)

Government securities investment recorded a mean allocation (M = 1.0908) and a range of (0.7284 to 1.4739), with a standard deviation of 0.3279.

Financial performance (ROA) averaged 2.23% across the study period (min = 1.52%, max = 2.65%), with a standard deviation of 0.53%. The ROA trajectory revealed a peak of 2.65% in 2019, a sharp contraction to 1.59% in 2020 (attributable to COVID-19 disruptions), a recovery to 2.61% by 2022, and a renewed dip to 1.52% in 2023. This volatility underscores the sensitivity of SACCO returns to macroeconomic shocks and reinforces the value of stable, government-backed investment instruments as performance buffers.

The trend in government securities allocation over the six years showed consistent growth: from 0.7284 in 2018, through 0.9157 in 2020, to 1.3301 in 2021 and a peak of 1.4739 in 2023. This expanding allocation, concurrent with post-COVID recovery in ROA, suggests a positive temporal association between growing government securities investments and improved SACCO financial performance.

Pearson Correlation Analysis

Table 2 presents the Pearson correlation matrix

Table 2: Pearson Correlation Matrix (n = 264)

Variable	ROA	Govt Sec.
ROA	1.000	
Government Securities	0.661**	1.000

*** p < 0.001 (two-tailed); n = 264*

Government securities investment recorded a strong Pearson correlation with financial performance (r = 0.661, p < 0.001). This positions government securities as the investment dimension most closely associated with ROA variation among DT-SACCOs in Kenya.

The result is consistent with the theoretical prediction that low-risk, sovereign-backed instruments contribute most reliably to institutional financial performance by providing predictable, non-volatile income streams. It aligns empirically with Musau (2021), who confirmed a significant bond–performance relationship in Kitui SACCOs, and Morwabe and Muturi (2019), who found government securities among the strongest predictors of DT-SACCO profitability in Kenya.

Fixed-Effects Regression: Simple Model

Table 3 presents the fixed-effects regression results for government securities investment alone, demonstrating its individual explanatory power.

Table 3: Fixed-Effects Regression — Government Securities Investment on Financial Performance

Parameter	Coefficient	Std. Error	t-Statistic	p-value	95% CI
Government Securities Inv.	0.5688	0.0459	12.40	0.000	[0.478, 0.659]
Constant	3.9851	0.4437	8.98	0.000	[3.111, 4.860]
Within R^2	0.4127				
Between R^2	0.5595				

Overall R^2	0.4370		
F(1, 219)	153.87	Prob > F	0.000
Observations	264	Groups	44

Dependent Variable: ROA; Fixed-Effects (Within) Regression; STATA 17

The coefficient for government securities investment is 0.5688 ($p < 0.001$), indicating that a one-unit increase in government securities investment (i.e., a unit increase in the treasury bill-to-bond ratio) is associated with an approximate 0.57-unit improvement in ROA, holding entity-specific fixed effects constant. The t-statistic of 12.40 reflects the high precision and robustness of this estimate.

The within-entity R-squared of 0.4127 signifies that 41.3% of the variation in SACCO financial performance over time is explained solely by changes in government securities investment — the highest single-variable explanatory power in the study. The between-group R-squared of 0.5595 and overall R-squared of 0.4370 further confirm substantial cross-SACCO and total explanatory power. The F-statistic of 153.87 ($p < 0.001$) confirms the model's overall statistical significance. The fitted single-variable regression equation is:

$$ROA = 3.9851 + 0.5688 \times Government\ Securities\ Investment$$

The F-test for joint significance of the individual fixed effects ($F(43, 219)$, $p < 0.05$) confirmed that unobserved, time-invariant SACCO-specific characteristics (e.g., governance structures, membership size, management quality) are collectively significant, validating the fixed-effects specification. The low correlation between entity-specific effects and the predictor (corr(u_i, Xb) = 0.0972) indicates minimal omitted variable bias attributable to unobserved heterogeneity.

Discussion

The empirical results consistently position government securities investment as the single most powerful predictor of DT-SACCO financial performance (ROA) in Kenya, evidenced by the strong bivariate correlation ($r = 0.661$), simple regression within-R^2 (0.4127), and a significant t-statistic (12.40) in simple regression. These findings are theoretically coherent. Modern Portfolio Theory (Markowitz, 1952) predicts that low-variance, non-perfectly-correlated assets enhance portfolio returns relative to risk. Government securities — with near-zero default risk and sovereign backing — serve precisely this function: as the lowest-variance element in the SACCO portfolio, they reduce overall portfolio variance while contributing stable yield, enhancing ROA. Tobin's Q theory further supports the result; for SACCOs whose replacement cost of assets often approaches market value (limiting equity market re-investment options), the marginal yield from government securities consistently exceeds the alternative of holding idle cash or non-performing assets.

The six-year trend data reinforces the interpretation. Government securities allocations rose continuously from 0.7284 (2018) to 1.4739 (2023), tracking a period of post-2020 monetary easing in Kenya that elevated bond yields and made treasury instruments particularly attractive. The concurrent post-COVID recovery in ROA (from 1.59% in 2020 to 2.61% in 2022) suggests a temporal alignment between expanding government securities portfolios and improved SACCO profitability.

The empirical corroboration from prior studies is compelling. Musau (2021) established that bond investment decisions significantly drove SACCO performance in Kitui County. Morwabe and Muturi (2019) found government securities among the strongest SACCO investment performance drivers in Kenya. At the international level, Hanin et al. (2022) and Ayodele et al. (2022) confirmed significant positive bond-performance relationships in Turkey and Nigeria

respectively, while Nisra et al. (2018) documented similar evidence for South African commercial banks. The lone exception — Mwangi et al.'s (2019) negative result for non-financial NSE-listed firms — is sector-specific and does not undermine the SACCO-sector findings.

An important nuance is the wide standard deviation of government securities investment (SD = 0.3279), which is disproportionately large relative to other investment dimensions. This variability reveals a two-tier structure within the DT-SACCO sector: SACCOs with larger asset bases and more sophisticated treasury management functions invest significantly more in government securities and realize higher ROA, while smaller SACCOs with limited treasury capacity maintain lower allocations. This heterogeneity points to a systemic capacity gap within the sector that policy interventions could address.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study provides robust empirical evidence that government securities investment exerts the strongest positive and statistically significant influence on the financial performance of Deposit-Taking SACCOs in Kenya. The fixed-effects panel regression coefficient of 0.5688 ($p < 0.001$) in simple regression confirm government securities as a primary driver of ROA improvement in this sector.

This finding is theoretically grounded in Modern Portfolio Theory and Tobin's Q Investment Theory, which jointly predict that sovereign-backed, low-risk instruments maximize risk-adjusted portfolio performance for institutions with conservative investment mandates. Empirically, the result extends and validates prior Kenyan studies (Musau, 2021; Morwabe & Muturi, 2019) while adding a six-year panel perspective and employing a rigorous fixed-effects framework that accounts for time-invariant SACCO heterogeneity.

The temporal evidence is equally compelling. As government securities allocations consistently grew from 0.7284 to 1.4739 between 2018 and 2023, ROA exhibited a corresponding (if volatile) upward trend from its COVID-19 trough of 1.59% to 2.61% in 2022, reinforcing the dynamic relationship between strategic government securities investment and institutional financial recovery.

Recommendations

SACCO boards and investment committees should formalize government securities as a mandatory portfolio component with minimum allocation thresholds. Specifically, strategies should target a balanced treasury bill and bond composition that aligns the SACCO's maturity profile with its member savings obligations. Long-term bonds (10-year and 20-year tenors) should be prioritized during low-rate environments to lock in higher coupon income, while treasury bills should be maintained at sufficient levels to preserve operational liquidity. Regular portfolio reviews should assess duration matching and yield optimization against SACCO liability structures.

The regulatory framework should incentivize DT-SACCOs to expand government securities allocations by establishing minimum investment guidelines similar to those applied to insurance companies and pension funds. SASRA should develop capacity-building programs — particularly targeting smaller DT-SACCOs with limited treasury expertise — to enable evidence-based government securities portfolio management. Additionally, the National Treasury could consider designing SACCO-specific bond instruments (such as savings bonds with SACCO-friendly minimum denominations) to lower entry barriers and broaden sector participation in the government securities market.

Future studies should investigate the moderating role of SACCO size on the government securities–performance relationship, given the wide dispersion in securities allocations observed across the 44 DT-SACCOs. Longitudinal studies extending beyond 2023 would capture the effects of Kenya's tightening monetary cycle (2023–2025) on the yield dynamics of SACCO government securities portfolios. Comparative research contrasting DT-SACCO investment performance with non-deposit-taking SACCOs and microfinance institutions would clarify whether the positive relationship generalizes across cooperative financial institution types.

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