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The Effects of Inflation Volatility on Financial Performance of Savings and Credit Cooperative Societies in Kisumu City, Kenya

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Abstract:

SACCOs are a major contributor to the total financial industry development and consequently the nation's economic development. The SACCOs' contribution to the gross domestic product of Kenya is over forty five percent. Inflation volatility has generally affected the ability of the financial sector to allocate resources effectively. SACCOs being part of the financial industry are not spared by the dynamics of inflationary factors. Despite these factors impacting on the financial performance of SACCOs, there is limited research on the problems of inflation volatility as a course of these problems. The study, therefore, sought to fill the knowledge gap that exists due to limited scholarly research on the effects of inflation volatility on the financial performance of SACCOs. The objective of the study was to investigate the effects of inflation volatility on financial performance of SACCOs in Kisumu City. The study adopted a descriptive research design where data was collected from seven SACCOs in Kisumu City. During the study, both secondary and primary data was used. The secondary data related to SACCOs' performance were collected from audited financial statements covering a period of nine years, i.e. 2006 to 2014 and inflationary related data was collected from CBK web-site for the same period. Primary data was collected from two key officers from each SACCO by use of semi-structured questionnaires. Data was then analyzed by use of regression analysis and summarized in tabular and chart formats. From the findings, the study found that there exist a strong negative correlation coefficient between annualized inflation rates and the SACCOs financial performance. This implies that incremental inflationary forces had a diminishing effect on the SACCOs' financial performance. The study, therefore recommended that SACCOs need to embrace proactive and collective approach in monitoring and projecting inflationary variation so as to shield them from any form of adverse volatility.

Keywords: *Inflation volatility, financial performance, SACCO*

1. Introduction

Variability of inflation over time makes expectations over the future price level more uncertain. In a world with nominal contracts, this induces risk premia for long-term arrangements, raises costs for hedging against inflation risks and leads to unanticipated redistribution of wealth. Thus, inflation volatility can impede growth even if inflation on average remains restrained (Fatas & Mihov, 2003). Samimi and Shahryar (2009) refer to inflation volatility as to the fluctuations or instability in a chosen measure of inflation. Further, the authors argue that the importance of inflation volatility has been a major aspect on the relationship between inflation and growth. Judson and Orphanides (1999) find some evidence that inflation volatility, measured by the standard deviation of intra-year inflation rates, has contributed significantly to lower economic growth in a wide panel of countries. This supports Friedman's (1977), as cited by Fatas and Mihov (2003), conjecture that the harmful effect of inflation on growth is driven by inflation volatility.

Fatas and Mihov (2003) find that high inflation induces high inflation volatility and uncertainty. Similarly, Al-Marhubi (1998) finds negative growth effects of conditional and unconditional inflation volatility for a panel of 78 countries, while Blanchard and Simon (2001) find a strong positive link between inflation volatility and output volatility for industrialized countries. In this study, the effect of inflation volatility on financial performance of the savings and credit cooperative societies (SACCOs) will be analyzed.

The SACCOs also known as Credit Unions are cooperative financial institutions that are owned and controlled by members. As Mudibo (2005) posits, the objective of SACCOs is member economic empowerment through savings mobilization, disbursement of credit and ensuring SACCOs' long-term sustainability through prudent financial practice. SACCOs are entirely member-based organization, only serving people who do belong to the SACCO. The bond is usually the place of employment or profession, but it can also be a geographic area. Although savings and credit cooperatives also talk about common bond, it is usually based geographically on a village, group of villages, or a town and its surrounding (Kabuga & Batarinyebwa, 1995). Most SACCOs in urban areas are formed by salaried and wage earners who have a common bond and whose employers are ready to effect check off- system from

members' monthly contributions and loan repayments. On the other hand, SACCOS found in rural areas are community-based and their main activities is agriculture.

1.1. Inflation Volatility

In Ethiopia and Uganda, Geda and Tafere (2008) found that the main driver of short-run inflation is a surge in money supply, accounting for 40 percent and one-third, respectively. In Tanzania and Kenya, Sichei and Wambua (2011) found oil prices to drive inflation, accounting for 20 and 26 percent respectively, although money growth also made a significant contribution to the increases in inflation in the two countries. Further, Sichei and Wambua (2011) found determinants of inflation in Kenya to be (a) exogenous factors (world food and fuel prices); (b) structural characteristics (domestic production); and (c) policy variables (monetary, fiscal and exchange rate policies). Adverse weather conditions further worsened the food situation in the region, causing a sharp increase in food prices. Added to this, rising global oil prices were transmitted to domestic inflation, exacerbated by rapid depreciation in exchange rates across all four countries (Sichei & Wambua, 2011).

In the face of increasing inflation, the Central Bank of Kenya (CBK) has attempted to constrain growth in credit to the private sector through large interest rate adjustments, in order to rein in inflation. For instance, in 2011 alone, the Central Bank raised interest rates from 6.25 percent in May to 18 percent in December. Also, the CBK revised the cash reserve ratio by 50 basis points, from 4.75 percent to 5.25 percent. All these were strategically meant to curb the adverse effects of inflation on economic growth which is significantly influenced by the financial sector (CBK, 2012). The revised conditions affected all players in the financial sector, SACCOs included.

Positive interaction between the macroeconomic conditions and financial sector is critical in achieving and maintaining financial system stability, hence the argument for the stability of macro-financial conditions (Boyd *et al.*, 2001). In Kenya, however, macroeconomic conditions have routinely been widely turbulent and as a result posing business challenges to the investors. For instance, in the year 2008, the country's inflation rate sporadically rose from 9.8 % in 2007 to 26.2% leading to a myriad to policy adjustments from the sector regulator, CBK in quest of mitigating associated risks. Despite the interventions, the unanticipated upsurge saw CBK's base rate hit the highest of 18.5% alongside an increase in cash reserve ratio. This contractionary intent trickled down to causing high borrowing cost and possibly low credit uptake. Moreover, since the year 2003 the Kenyan inflation rate has consistently remained above 6.0% which according to Khan and Senhadji (2001) is a minimum threshold for far-reaching economic implications within the participating industries. Despite these macroeconomic dynamics, there is no detailed scholarly dissemination on their impact on financial performance of the financial service sector. A study by Financial Sector Deepening (FSD) (2009) revealed that SACCOs are facing severe liquidity problems and majorities are unable to meet the demands of their clients for loans and withdrawal of savings. However, the study did not attribute these problems to inflation volatility. Based on this gap, therefore, the study sought to investigate the effect of inflation on financial performance among SACCOs operating in Kisumu town.

1.2. Financial Performance of SACCOs

Financial services sector plays a critical role in economic development through provision of better intermediation and investment options between savings and investments. Specifically, services provided by SACCOs are/will play a crucial role in improving accessibility of financial services. This, however, is realizable only when the SACCOs' financial stability is guaranteed. According to Kinuthia (2007), SACCOs need to generate income which is adequate to cover all of their operational costs, inherent risks, and to enhance institutional capital, dividends and rebates. In this regard, financial practice should be based on sound financial stewardship, solid capital structure, and prudent funds allocation strategy. Schenk (2007) argues for the SACCOs' financial stability on the basis of their comparatively lower fees than other types of commercial banks, which not only helps to increase access of the poor to credit, but also reduces the cost of remittance transfers.

There is empirical evidence that over time SACCOs' financial performance is on the gradual rise. In 2008, for instance, savings in SACCOs across Sub-Sahara Africa grew by an average of 31.9 per cent, which is comparable to average saving growth rates for previous years. Loans grew at an average of 12 per cent, which was lower than the growth rates of previous years (World Council of Credit Unions [WOCCU], 2009). Further, in the year 2007, loans issued by SACCOs grew by 35.3 percent, while in 2006 loans grew by 21.2 per cent. Growth in new membership has been steady. This also suggests that SACCOs across Africa may be exercising caution in responding to the loan requests of members (WOCCU, 2009).

SACCOs in Kenya, however, face stiff competition from other players in the financial services sector like commercial banks, micro-finance institutions, shylocks, pyramid schemes and investment groups. Out of the country's approximated population of 39 million, a significant 24.6 million people (63%) participate either directly or indirectly in SACCO enterprises. However, despite the significant government initiative to support cooperative movements through legislation, a significant 3457 (51%) of the registered SACCOs by late 2013 were not operational (Kiaritha *et al.*, 2014). This high failure rate of SACCOs may contribute in frustrating millennium development goals and vision 2030 objectives of increasing financial inclusion, hence justification for this study.

1.3. Inflation and Performance

The relationship between inflation and performance has been a subject of intense debate among researchers in recent years. Boyd *et al.* (2001) associate inflation with financial repression, and that the financial sector becomes less developed as inflation increases, especially when the average inflation rate is very high. There is a threshold level of inflation below which inflation has a positive effect on financial depth, but above which the effect turns negative (Khan *et al.*, 2001). Khan and Senhadji (2010), while using a large cross-country sample, find empirical support for the existence of such a threshold. Their estimates indicate that the threshold level of

inflation is generally about 3 – 6 per cent per annum, depending on the specific measure of financial depth that is utilized. There has also been an argument that inflation adversely affects the holding of all classes of financial assets. In addition, it has been argued that inflation tends to encourage the holding of currency, and to discourage the holding of quasi-money (Odhiambo, 2005).

According to English (1999), a higher inflation rate encourages households to substitute purchased transaction services for money balances, thereby boosting the financial sector. In this way, inflation may have a positive impact on financial development. Inflation also creates uncertainty and financial market frictions, which make the financial system inefficient in allocating resources (Huybens & Smith, 1998). Unfortunately, in sub-Saharan African countries where inflation is at its highest very few studies have been conducted. In addition, some of the previous studies somewhat over-relied on the cross-sectional data, which may not have satisfactorily addressed the country-specific issues (Odhiambo, 2005).

1.4. Statement of the Problem

The growth in importance of the SACCOs subsector is associated with the public, they are catering for and also with the increasing popularity of microfinance (Kabuga & Batarinyebwa, 1995). In Kenya, the subsector is a major contributor to the total financial industry development and consequently the economy. It contributes to over forty five percent of the nation's Gross Domestic Product. As a result, SACCOs are increasingly becoming prominent and sooner rather than later they will be the most common form of cooperatives (Kiaritha et al., 2014). However, since the year 2003 the country's inflation rate has consistently remained above 6.0%, which according to Khan and Senhadji (2001) is a minimum threshold for far-reaching economic implications within the participating industries.

Generally, the country has experienced macroeconomic conditions which have routinely been widely turbulent and as a result posing business challenges to the investors. For instance, in the year 2008, the country's inflation rate sporadically rose from 9.8 % in 2007 to 26.2%, leading to a myriad to policy adjustments from the sector regulator, CBK, in quest of mitigating associated risks. Despite the interventions, the unanticipated upsurge saw CBK's base rate hit the highest of 18.5% alongside an increase in cash reserve ratio. This contractionary intent trickled down to causing high borrowing cost and possibly low credit uptake. Despite these macroeconomic dynamics, there is limited detailed scholarly dissemination on their impact on financial performance of the financial service sector. A study by Financial Sector Deepening (FSD) (2009) revealed that SACCOS are facing severe liquidity problems and majorities are unable to meet the demands of their clients for loans and withdrawal of savings. However, the study did not attribute these problems to inflation volatility. Based on this gap, therefore, the study sought to investigate the effect of inflation on financial performance among SACCOS operating in Kisumu city.

1.5. Purpose and Objectives of the Study

The general objective of the study was to determine the effect of inflation volatility on financial performance of SACCOs in Kisumu city, Kenya.

Specifically, the study was intended to:

- i. Determine general trend of inflation in Kenya;
- ii. Assess financial performance of SACCOs in Kisumu city; and
- iii. To establish the extent to which inflation volatility affected financial performance of SACCOs in Kisumu city.

1.6. Theoretical Framework

Four theories, presented by Seletang (2005), constitute the theoretical framework of this study. They include classical growth theory, Keynesian theory, Monetarism, and endogenous growth theory.

1.6.1. Classical Growth Theory

This was propounded by Adam Smith, postulating a supply side-driven model of growth and his production function was as follows:

$$Y = f(L, K, T) \dots \dots \dots (1)$$

Where Y is output, L is labour, K is capital and T is land, so output is related to labour, capital and land inputs. Smith viewed savings as a creator of investment and hence growth, therefore, he saw income distribution as being one of the most important determinants of how fast (or slow) a nation or business entity should grow. The link between inflation and its tax effects on profits levels and output were not specifically articulated in classical theories. However, the relationship between the two variables is implicitly suggested to be negative, as indicated by the reduction in firms' profit levels through higher wage costs (Seleteng, 2005).

1.6.2. Keynesian Theory

The Keynesian model comprises of Aggregate Demand (AD) and Aggregate Supply (AS) curves. According to this model, in the short-run, the AS curve is upward sloping rather than vertical. The implication is that changes in the demand side of the economy affect both prices and output. This holds because many factors drive inflation rate and level of output in the short-run. Therefore, the Keynesians advocate that there exist a positive relationship between inflation and output (Seleteng, 2005). Blanchard and Kiyotaki (2007) concur that the positive relationship can be due to agreement by some firms to supply goods at a later date at an agreed price. Therefore, even if the prices of goods in the economy have increased, output would not decline, as the producer has to fulfill the demand of the consumer with whom the agreement was made.

1.6.3. Monetarism

This was propounded by Milton Friedman, and it basically emphasizes several key long-run properties of the economy. The Quantity Theory of Money linked inflation and economic growth by simply equating the total amount of spending in the economy to the total amount of money in existence. He proposed that inflation was a result of an increase in supply or velocity of money at a rate greater than the rate of growth in the economy. In summary, Monetarism suggests that in the long-run, prices are mainly affected by growth rate in money, while having no real effect on growth. Inflation occurs if the growth in the money supply is higher than the economic growth rate. These include changes in expectations, labour force, prices of other factors of production, fiscal and/or monetary policy (Seleteng, 2005).

1.6.4. Endogenous Growth Theory

This theory describe economic theory as being generated by factors within the production process, for instance, economies of scale, increasing returns or induced technological change. According to this theory, the economic growth rate depends on one variable: the rate of return on capital. Variables like inflation decreases the rate of return and this in turn reduces capital accumulation and hence reduces the growth rate. Other models of endogenous growth explain growth further with human capital. The implication is that growth depends on the rate of return to human capital, as well as physical capital. The inflation acts as a tax and hence reduces the return on all capital and the growth rate (Seleteng, 2005). This study is based on this theory and it is expected that SACCO performance will negatively be affected as the rate of inflation maintains on the rise.

2. Literature Review

2.1. Introduction

The chapter discusses the existing literature regarding inflation and financial performance not only in the SACCO context but generally. It brings out an appreciation of what has been done not only on the variables of the study, but also the gaps that may exist in the body of literature. The reviews are categorized into theoretical and empirical. The chapter ends with the study's conceptual framework.

2.2. Effect of Inflation Volatility

Rapid output growth and low inflation are the most common objectives of macroeconomic policy in both developed and developing economies. Worldwide, monetary authority strives to achieve the government's overall inflation objective through effective monetary management, which entails setting intermediate and operating targets in tandem with the assumed targets for GDP growth, inflation rate and balance of payments (Billi & Khan, 2008).

The growing interest in price stability as a major goal of monetary policy is an acknowledgement of the observed phenomenon that high inflation disrupts the smooth functioning of a market economy (Khan & Senhadji, 2010). High inflation is known to have many adverse effects: it imposes welfare costs on the society; impedes efficient resource allocation by obscuring the signaling role of relative price changes; discourages savings and investment by creating uncertainty about future prices; inhibits financial development by making intermediation more costly; hits the poor excessively, because they do not hold financial assets that provide a hedge against inflation; and reduces a country's international competitiveness by making its exports relatively more expensive, thus impacting negatively on the balance of payments, and perhaps more importantly, reduces long-term economic growth. Overall, businesses and households are thought to perform poorly in periods of high and unpredictable inflation (Frimpong & Oteng-Abayie, 2010).

According to Billi and Khan (2008), most policymakers agree that they should not allow inflation to fall below zero because the costs of deflation are thought to be high. Even though some evidence suggests that moderate inflation helps in economic growth, the overall weight of evidence so far clearly indicated that inflation is inimical to growth. Consequently, policymakers should aim at a low rate of inflation that maximizes general economic well-being (Mubarik, 2005).

3. Research Design and Methodology

3.1. Research Design

The study adopted a descriptive research design. According to Gay (2006), descriptive research is a process of collecting data in order to answer questions concerning the current status of the subject under study. Creswell (2003) states that descriptive survey designs are used in preliminary and exploratory studies to allow researchers to gather information, summarize, present and interpret for the purpose of clarification. Orodho (2002) said that descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. It can be used when collecting information about people's attitudes, opinions, habits or any of the variety of education or social issues. This design was specifically preferred because it would guarantee breadth of information and accurate descriptive analysis of characteristics among SACCOs in Kisumu which could be used to make inferences about the Kenyan situation.

3.2. Study Area

The SACCOs with head offices in Kisumu town and which had been established by 2006 constituted the study's target population. Further, a qualifying SACCO had to be duly registered with Ministry of Industrialization and Enterprise Development, office of the Commissioner of Cooperative Development, to confirm its legal existence and operational bounds. Based on these inclusion

requirements, there were seven candidate Saccos which included KITE Sacco, KIMUTE Sacco, AHOKI Sacco, JUA KALI Sacco, TUNZA Sacco, Maseno University Sacco, and EQUABBO Sacco. From each of the SACCOS, finance managers and managing directors were earmarked for participation by way of completing a copy of questionnaire to supplement the discrete secondary data obtained from respective financial statements and performance reports.

3.3. Sampling Techniques and Sample Size

The study population composed of twelve SACCO's that are registered by the Ministry of Industrialization and Enterprise Development, office of the Commissioner of Cooperative Development and are operating in Kisumu City. The study focused on the registered SACCO's, because they meet the requirement of Cooperative Societies Act of 2004 chapter 490, the laws of Kenya. The sample size was determined by use of Krejcie and Morgan's table (1970). Seven SACCO's were selected for the study. The respondents were two senior management staff from each SACCO i.e. the managing director and chief finance officers. The respondents were purposely selected from each SACCO in order to set only those with the required information for the study. A stratified sampling procedure was followed.

3.4. Research Instruments

The study made use of both secondary and primary data. Discrete secondary data relating to SACCOS' financial performance were drawn from income statements and balance sheets of the SACCOS over a 9-year span between the year 2006 and 2014, while inflation-related data were obtained from the CBK weblink. Referring directly from the SACCOS' audited statements, the data obtained were considered reliable. Nevertheless, necessary cross-checking and editing were done while scanning information and data from the secondary sources to enhance content validity. For further clarifications and detailed disseminations, marginal data were collected by the administration of a semi-structured questionnaire focusing on awareness of inflation volatility, mitigation approaches and implications on financial performance. Babbie (2007) justifies the use of questionnaire in a descriptive study as it can be used to obtain information about the thoughts, feelings, attitudes, beliefs, values, perceptions, personality, and behavioral intentions of the research participants in a large population

4 Findings of the Study

4.1. Sacco Membership

Obtained data indicated that SACCO membership was open to all people who belonged to the interest group, regardless of race, religion, colour, creed, and gender. The SACCOS were owned, managed and run by members who had a common bond. A member of the SACCO was defined as a person admitted to membership after registration in accordance with the SACCO'S by laws. Further, it was observed that SACCOS were gradually, on the rise in terms of membership as graphically demonstrated in Fig.1.

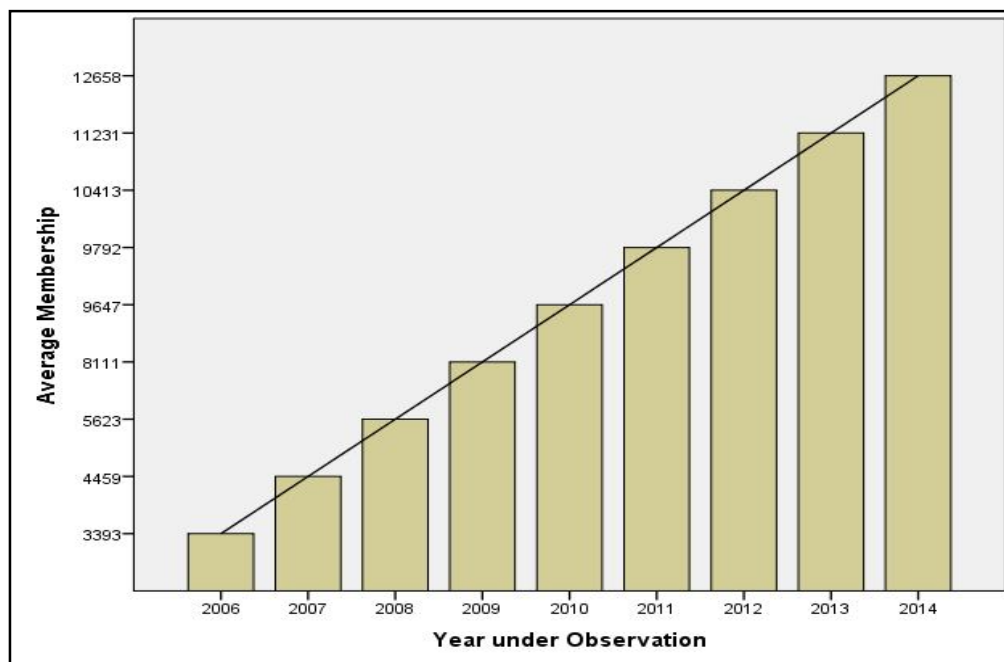


Figure 1: Sacco Membership between 2006 and 2014

Fig. 1 shows a steady increase of registered SACCO members from the lowest of 3,393 in 2006 to the highest of 12,658 in 2014. According to Mpiira, *et al.* (2013) SACCOS have become an attractive investment vehicles, and people will not join SACCOS where there is no viable economic enterprise that would generate them income. Investors, therefore, expect returns from their savings in SACCOS and these return anticipations are instrumental in sustaining member contributions.

4.2. General Inflation Trend influencing Saccos' Financial Performance

Lim (2014) asserts that since most SACCOs draw their membership from the formal sector, in times of economic downturn, the functioning of the SACCO can be undermined if member's incomes are destabilized by volatility in the economy and this may lead to a reduction of members' savings and increased demand for loans. This study focused on inflation volatility within a time span on 9 years. The findings are as presented in Fig. 2.

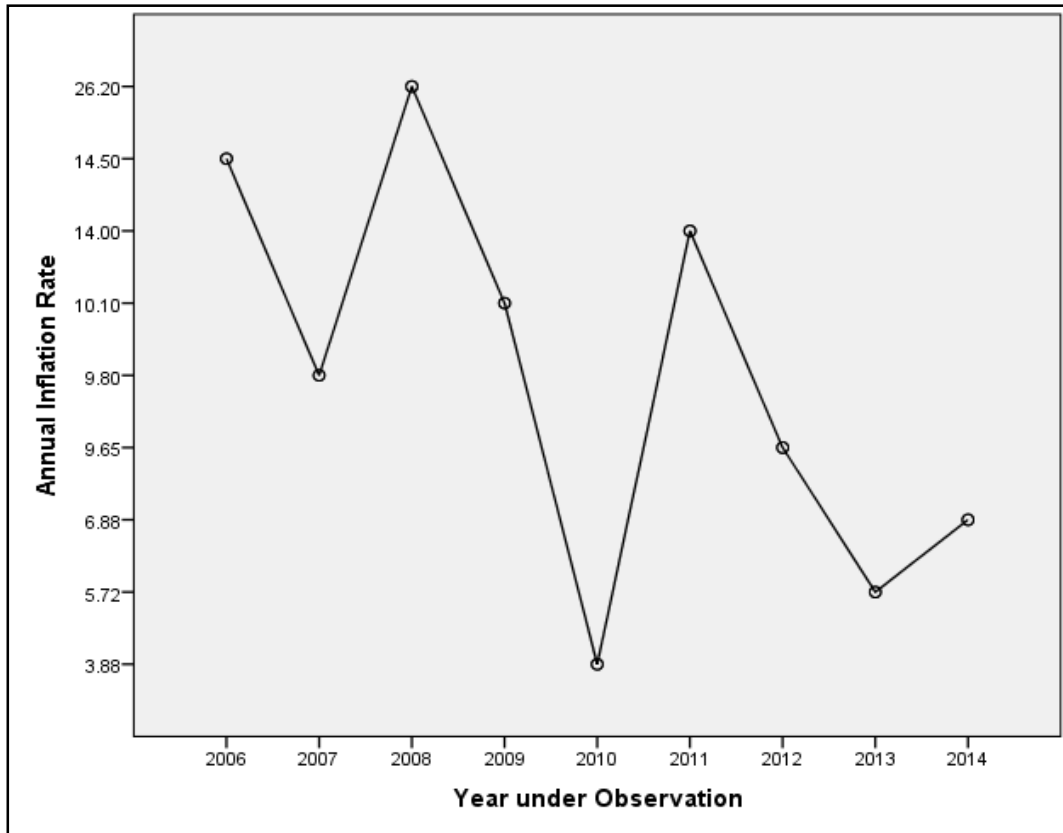


Figure 2: Inflation Rates between 2006 and 2014

Fig. 2 shows the erratic nature of domestic inflation-rate fluctuations in Kenya between 2006 and 2014. Within the study time span, the highest inflationary push was witnessed in 2008 at 26.2% predominantly because of the effects of post-elections crisis of 2007/08 (KNBS, 2012). In the reverse extreme, the year 2010 had the slimmest rate, which stood at 3.38%, followed by 5.72% which was recorded in 2013. Averagely, the inflation rate was estimated at 11.19%, which falls in the double-digit bracket that Khan and Senhadji (2010) detest due to high associated economic underdevelopment.

Based on Lim (2014) assertion that volatility distorts SACCO members' savings, loan-appetite and returns, the study analyzed the associations in domestic inflation to Gross Domestic Product (GDP) growth rates. In Fig. 3, the line graphs show the behavior of the two variables over the same time period.

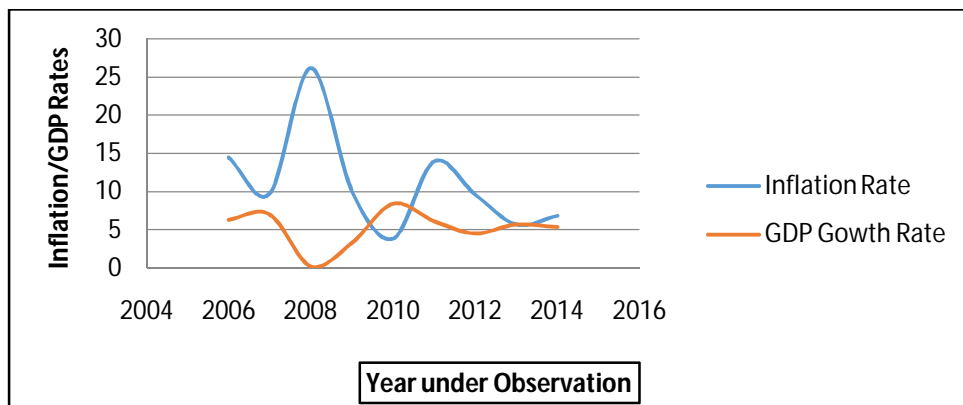


Figure 3: Inflation and DGP Growth between 2006 and 2014

Fig. 3 shows the contrasting relationship between inflation and GDP growth. When inflation was at its highest measure, GDP assumed the lowest scale. This also applied vice versa. In reference to Lim (2014), therefore, inflation had a significant effect on SACCO by way of introducing a distortionsary effect in the economy.

Total Population / No of Saccos	12
Sample Size / Target Saccos	7
No of Respondents Per Sacco	2
Total No of Respondents	14

Table 1: STUDY POPULATION

The statistical conformation of relationship between inflation and economic growth was tested using a bi-variate correlation and presented as shown in Table 2.

Correlations		Annual Inflation Rate	Gross Domestic Product Growth Rate
Annual Inflation Rate	Pearson Correlation	1	-.756*
	Sig. (2-tailed)		.018
	N	9	9
Gross Domestic Product Growth Rate	Pearson Correlation	-.756*	1
	Sig. (2-tailed)	.018	
	N	9	9

Table 2: Correlation Coefficient between Inflation and GDP

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 indicates that the correlation between inflation and GDP growth was significant (p = 0.018) and that inflation is inversely proportional to GDP growth (r = -0.756). The findings confirmed those by Den Haan and Wouter (2000) which indicated to a negative correlation between inflation and economic growth. Also, Kirmanoglu (2001), by employing VAR models, showed that high inflation rates in Turkey caused lower economic growth. At higher levels of inflation, the implication is that the economy underperforms and by extension SACCOs are exposed to possible squeezing in savings and investments.

4.3. Financial Performance of Saccos

SACCOs exist to multiply capital value for the members whose savings are invested through borrowings and other investment vehicles. In this study, SACCOs’ financial performance was measured by loan advancement volumes and expansion of members’ savings.

Similar to SACCO membership pattern of variation, the study found a gradual increase in loan amounts advanced to members over the 9-year span. Fig. 4 presents the details of the loan volume growth between 2006 and 2014.

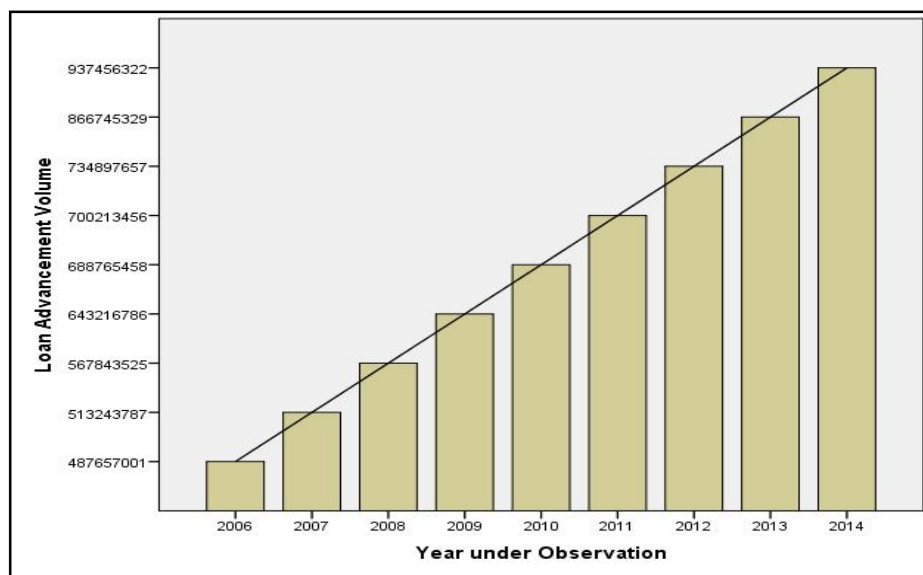


Figure 4: Sacco Loan Advances between 2006 and 2014

From Fig.4 it is evidenced that the Kisumu SACCOs gave more loans in 2014 than they did in 2006. While in 2006 Ksh487,657,001 was distributed to qualifying members, in 2014 the loans rose drastically to Ksh.937,456,322, representing a 92% increase in volume.

The increasing ability in advancing loans and meeting the expanding demand from participating members implied an incremental financial capacity among the SACCOs. According to Hesse and Cihak (2007), SACCOs tend to be more stable in all-times (despite crises) as their investment patterns use the capital of members in ways that best serve their long term needs and interests. It is therefore thought that their comparative stability, under both average and extraordinary conditions, can help to mitigate crisis impact for members and clientele, especially in the short-term (Hesse & Cihak, 2007).

The fact that SACCOs' advanced loans to their members, a positive correlation coefficient between loan volumes and membership was rightly anticipated. Table 3 presents the details of analysis.

Correlations		Average Membership	Loan Advancement Volume
Average Membership	Pearson Correlation	1	.958**
	Sig. (2-tailed)		.000
	N	9	9
Loan Advancement Volume	Pearson Correlation	.958**	1
	Sig. (2-tailed)	.000	
	N	9	9

Table 3: Correlation between Loans and Membership
 **. Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows the correlation coefficient between loan advancement and SACCO membership to be +0.958 and that the relationship was statistically significant. Therefore, growth and financial stability enjoyed by the SACCOs were also a result of membership expansion over time, and not necessarily dependent on the management's volatility mitigation abilities.

Over the period of study, members' savings were also observed to be on an incremental pace as further explained in Fig. 5.

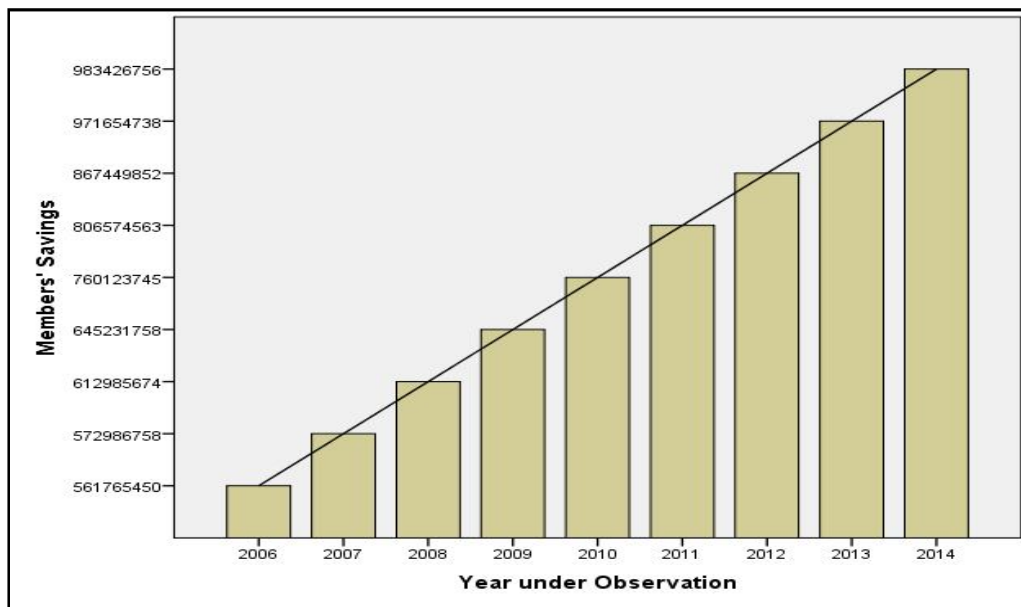


Figure 5: Sacco Members' Savings between 2006 and 2014

Fig. 5 illustrates that the SACCOs' savings, increased from the lowest of Ksh.561,765,450 in 2006 to the highest of Ksh.983,426,756 in 2014. Effectively, in the 9-year span, there was a remarkable 75% increase in mobilization of member savings. This marked another milestone reflecting the SACCOs positively in terms of financial performance. Notably, however, the increasing membership had a bearing on savings success as further illustrated in Table 4.

Correlations		Av. Membership	Members' Savings
Average Membership	Pearson Correlation	1	.948**
	Sig. (2-tailed)		.000
	N	9	9
Members' Savings	Pearson Correlation	.948**	1
	Sig. (2-tailed)	.000	
	N	9	9

Table 4: Correlation between Membership and Savings
 **. Correlation is significant at the 0.01 level (2-tailed).

At a statistically significant ($p = 0.000$) correlation coefficient of $+0.948$ between membership and savings, there was a heightened possibility that membership caused savings growth. Despite this, however, SACCOs had a remarkable financial performance within the study period.

4.4. Effect of Inflation Volatility on Saccos' Financial Performance

Having established volatility trend and SACCOs' financial performance over the observation time-length, the study examined the resulting effect of inflation on financial performance. SACCO surplus/deficit was used as an unbiased indicator for financial performance since it is the portion that management directly executes to administer other investments within the prevailing inflationary conditions. Moreover, using surplus indicator removed the effect of membership dynamics which directly influenced loan advancement ability and savings mobilization.

Fig.6 illustrates the surpluses/deficits that the SACCOs aggregately experienced over the entire study time limit.

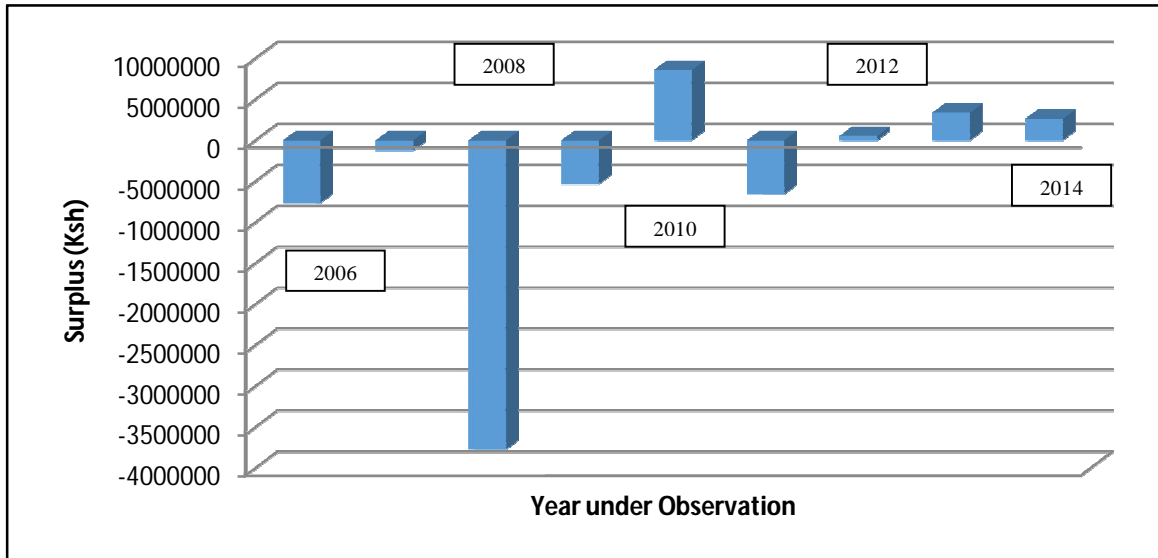


Figure 6: Sacco Surpluses/Deficits between 2006 and 2014

From Fig. 6, it is evident that the year 2008 denoted the worst financial performance when the SACCOs' aggregate deficit was Ksh.37, 702, 196, implying inherent inability to meet loan demands from members. Notably, 2008 was associated with the highest inflation rate of 26.2 and the lowest GDP growth rate of 0.2%. Contrary to this, in 2010 when the inflation was lowest at 3.88% and GDP growth was at 8.4%, the aggregate fund surplus was highest at Ksh.8,579,543.

Further to observable variation patterns, the study established the correlation between inflation and surpluses/deficits encountered by the SACCOs within the 9-year band. The analysis results were as presented in Table 5.

	Correlations	Surplus	Annual Inflation Rate
Surplus	Pearson Correlation	1	-.978**
	Sig. (2-tailed)		.000
	N	9	9
Annual Inflation Rate	Pearson Correlation	-.978**	1
	Sig. (2-tailed)	.000	
	N	9	9

Table 5: Correlation between Annualized Inflation Rates and SACCO Surpluses
 **: Correlation is significant at the 0.01 level (2-tailed).

Table 5 illustrates a near-perfect negative correlation coefficient ($r = -0.978$) between annualized inflation rates and the SACCO surpluses/deficits. This implied that incremental inflationary forces have a diminishing effect on the SACCOs' financial performance.

5. Conclusions

Based on ascertained findings, the study concludes that inflation in Kenya is extremely erratic and hence difficult to predict. Further, it was observed that SACCOs lacked requisite resources to project and mitigate the adverse effects of inflation on financial performance. In spite of these, the SACCOs sought to strengthen their liquidity and return possibilities through new membership subscriptions. Regarding financial performance of the selected SACCOs, the study makes the conclusion that by their unique nature they always remained afloat and their asset base paced incrementally. The SACCOs' loan advancements in terms of volume increased gradually

between the years 2006 and 2014, and in a replicated pattern to the members' savings growth over the same time span. Despite the dual expansions, the study determined that increase in members was instrumental in covering the adverse effects of inflationary forces. Finally, relating the SACCO surpluses/deficits, which determined their abilities to meet overheads and extra credit demands with annual inflation rates, it was observed that inflation had a significant effect on the SACCOs' finances. This was supported by the fact that when inflation was highest SACCOs had net deficits, and inflation was contained at single-digit levels, surplus funds were entered in the books of account. The near perfect negative correlation between inflation and SACCO surpluses implies an inverse causal relationship between inflation and financial performance.

6. Recommendations

On the basis of aforementioned conclusions, the study makes the following recommendations. First, the SACCOs need to embrace a proactive and a collective approach in monitoring and projecting inflationary variations so as to ready themselves against any forms of adverse volatility. Second, it is recommended to SACCO ownership and management to explore other investment vehicles to avoid constraining themselves to distributing all savings to contributors. This is because anticipated returns from the member-borrowers are obviously lower and are meant to be favorable to contributors. This diversification will establish buffer inflows to protect the institutions from delayed recoveries and subscriptions from owners. Finally, there is need to capacity built accounting staffers at the SACCOs to regularly record and advise management on the nature and extent of adversities imparted on the firms' financial performance.

7. Suggestions for Further Studies

The study obtained and analyzed data from seven SACCOs based in Kisumu city, thereby leaving out a number of resourceful institutions and authorities elsewhere. It is thus suggested that further studies are done on a wider scope of SACCOs and related institutions to ensure more representative generalizations. Moreover, application of this study's findings may not be entirely representative owing to the limited number of measurement indicators adopted. Further studies with additional indicators, hence, are suggested so as to establish unknown variable relationships.

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