

**THE RELATIONSHIP BETWEEN MONETARY POLICY AND NON
PERFORMING LOANS IN DEPOSIT TAKING SAVING AND CREDIT
COOPERATIVE SOCIETIES IN NAIROBI COUNTY, KENYA**

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DECLARATION

This research project is my original work and has not been presented for award of any degree in this or any other University for academic purposes.

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TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS	iii
DEDICATION	iv
LIST OF TABLES	viii
LIST OF FIGURE.....	ix
LIST OF ABBREVIATIONS.....	x
ABSTRACT.....	xi
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Monetary Policy	2
1.1.2 Non Performing Loans.....	3
1.1.3 Monetary Policy and Non Performing Loans	3
1.1.4 Deposit Taking Savings and Credit Co-operative Societies in Nairobi County.....	4
1.2. Research Problem	5
1.3 Research Objective	8
1.4 Value of the study	8
CHAPTER TWO : LITERATURE REVIEW.....	9
2.1 Introduction.....	9
2.2 Theoretical Review	9
2.2.1 Modern Monetary Theory	9
2.2.3 Macroeconomic Theory	10
2.2.3 The Loanable Funds Theory	11

2.2.4 Agency Theory.....	12
2.3 Determinants of Non Performing Loans in Deposit Taking SACCOs.....	14
2.3.1 Exchange rate	14
2.3.2 Cash Reserve Ratio.....	14
2.3.3 Interest Rate.....	15
2.3.4 Discount rate.....	16
2.3.5 Unemployment Rate.....	17
2.4 Empirical Review.....	18
2.4.1 International Evidence	18
2.4.2 Local Evidence.....	19
2.5 Conceptual Framework.....	19
2.6 Summary of Literature Review.....	22
CHAPTER THREE: RESEARCH METHODOLOGY	23
3.1 Introduction.....	23
3.2 Research Design.....	23
3.3 Target Population.....	23
3.4 Data Collection	24
3.5 Data Analysis	24
3.5.1 Diagnostic Tests.....	24
3.5.2 Analytical Model	25
3.5.3 Operationalization of Variables	26
3.5.4 Test of Significant	26

CHAPTER FOUR : DATA ANALYSIS, RESULTS AND DISCUSSION	27
4.1 Introduction.....	27
4.2 Descriptive Analysis	28
4.3 Correlation Analysis	30
4.4 Monetary Policy and Loan Performance in DT SACCOs	31
4.5 Interpretations of the Findings	34
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS .	37
5.1 Introduction.....	37
5.2 Summary.....	37
5.3 Conclusions.....	39
5.4 Recommendations for policy and practice.....	40
5.5 Limitations of the Study.....	41
5.6 Suggestions for Further Research	42
REFERENCES.....	43
APPENDICES.....	55
Appendix I: Financial Report Information	55
Appendix II: List of Saccos under Sasra in Nairobi	
Appendix III: Aggregate financial soundness indicators of DT-SACCO Societies, 2016- 2012.....	
Appendix IV: Consolidated Data.....	61
Appendix V: DT-SACCOs By Total Asset Sizes, Net Loans , Deposit And Total Income In 2016-2012.....	62

LIST OF TABLES

Table 4. 1: Descriptive Analysis 2012 to 2016.....	28
Table 4. 2: Correlation between Monetary Policy and NPLs	30
Table 4. 3: Regression Model Summary.....	32
Table 4. 4: Goodness of Fit (ANOVA).....	32
Table 4. 5: Regression Coefficients	33

LIST OF FIGURE

Figure 2.1: Conceptual Model	21
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LIST OF ABBREVIATIONS

BLR	Banking lending rate
DTS	Deposit Taking SACCOs
MMR	Monetary Market Rate
NPLs	Nonperforming loans
OMO	Open Market Operation
SACCOs	Saving Credit and Cooperative Societies
SASRA	SACCOs Societies Regulatory Authority

ABSTRACT

Monetary policy foster stability of loan prices, interest rates and exchange rates. Monetary regulations exist for safeguarding the banking industry against systemic risk, protecting consumers from excessive charges such as loan interest charges and finally to achieve high financial returns in credit unions. In Kenya, regulated SACCOs objective is to increase lending and volume of deposits. Introduction of Central Bank rate as a monetary policy tools lead to loan supply of less liquid SACCOs, deposit base and induce SACCOs ability to perform their expected roles within the financial system. The study examined the relationship between monetary policies governing DTS and on loan performance in Deposit Taking SACCOs in Kenya by answering the question. The objective of the study was to examine the relationship between monetary policy and nonperforming loans Deposit Taking SACCOs (DTS) in Nairobi County, Kenya. The study adopted descriptive survey research design. The population of this study was all 29 licensed DTS in Nairobi Kenya. The study adopted a census survey where all the 29 DTS form part of the study. The study collected secondary data from financial reports of deposit taking SACCO. Data was analyzed through description statistics, means and standard deviations. Inferential statistics, correlation and regression analysis was also done. The study established that interest rate significantly and positively predict loan performance in SACCOs and that open market operations predict negatively and significant influence on loan performance in SACCOs hence increase in interest rate and open market operations decrease loan performance in SACCOs. The study revealed that retained earnings predict significant and negatively relationship with loan performance in Deposit Taking SACCOs and that increase in retained earnings would lead to increase in NPLs in SACCO. The study revealed that size of the Deposit Taking SACCOs predict significant and negative relationship with loan performance in Deposit Taking SACCOs. The study concluded that increase in retained earnings would increase loan performance in Deposit Taking SACCOs as its lower level of NPLs and that exist a strong positive and significant relationship between SACCOs size and NPLs demonstrating that increase in Deposit Taking SACCOs' assets lead to decrease in level of Nonperforming loans. The study concluded that NPLs of the Deposit Taking SACCOs was significantly and negatively predicted by cash reserve ratio as increase in cash reserve adequacy and monetary expansion led to increase in level of NPLs as reasons behind the banking fragility. The study concluded that interest rate significantly and positively predict NPLs in Deposit Taking SACCOs. The study concluded that retained earnings predict significant and negatively relationship with loan performance in Deposit Taking SACCOs and that increase in retain earnings would lead to increase in NPLs in SACCOs. The study recommend that the financial regulatory authorities such as CBK and SASRA should formulate policies that should foster SACCOs involvement in investing in treasury bills , open Market operations as interest rate significantly and positively predict loan performance in Deposit Taking SACCOs. The study recommend that management of Deposit Taking SACCOs should devise measures to reduce occurrence of accumulated losses and increase retained earnings to foster retain reserves.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Monetary policy encompasses any policy designed to influence the level of economic activity by influencing the supply and demand or the cost of money. According to Kumbhakar, Lozano-Vivas, KnoxLovell and Hassan (2005) implementation of monetary policies is a way financial institutions increase the efficiency and performance. The financial policies aim at increasing banking institutions competition on charge fees, financial products and market share. The monetary controls use monetary instruments to conduct monetary regulation operations in a monetary targeting framework that are deemed to have implications for loans portfolio performance.

Monetary policies are expected to influence operation efficiency in credit union and mitigate credit risks and improve quality of loan portfolio supported by micro and macro prudential regulation (Sichei, Amanja & Tiriongo, 2012). The micro prudential regulation theory credit unions finance themselves using client deposits and government insured deposits to increase operation efficiently, reducing moral hazard problem, reduce credit risks and manage nonperforming loans and improve level of profitability (Hanson, Kashyap & Stein, 2011).

Provision of loan facilities is one of the major functions of deposit taking SACCOS besides accepting deposit from the public and their customers where loan is regarded the largest part of SACCO overall operating assets. Good loan collections are critical for Deposit Taking SACCOs as it impact directly on Liquidity level, SACCO lending

capability, earnings level and profitability of the SACCOs (Mombo, 2013). However, SACCOs are experiencing high loan default rate loans. In Kenya, issues of Nonperforming loans (NPLs) are on the rise posing a rise to performance and growth of deposit taking SACCOs. Occurrence of NPLs is linked to existing monetary regulations in the financial market such as banking rates, open market operations, central bank rate, minimum reserve requirements and this affects the operation of SACCOs in liquidity, debt- servicing capacity, Lending capacity and affect customer ability to repay capacity hence loan default.

1.1.1 Monetary Policy

Monetary Policy alludes to the mix of measures intended to control the value, supply and cost of money in an economy. It can be depicted as the art of controlling the direction and development of credit facilities in compatibility of stable price and economy growth in an economy (Chowdhury, Hoffman & Schabert, 2003). Monetary policy alludes to the activities of the financial controller regulating the money supply which could be through discretionary monetary approach instruments, for example, the open market operation(OMO), discount rate, reserve requirement, moral suasion, direct control of bank credit, and direct control of interest rates (Ayuso & Repullo, 2001).

Banking lending rate (BLR) response faster to a decrease in the monetary market rate (MMR). Credit unions are rigid to adjust their lending rates upward which support the customer reaction and adverse selection hypothesis (Matemilola, 2014). Onyekachi

(2013) indicated that higher lending rate had a negative impact on performance of banking institutions in Nigeria.

1.1.2 Non Performing Loans

Non Performing loans refer to rate of financial returns of an interest in different investment credit products. Thus broadly, the number of clients applying for loans, the amount they are borrowing, payment made in installment, security pledge against the acquired assets, rate of arrears recovered and the quantity of loan product on the line. Loan portfolio is the ration of total paid loans over total loans offered to clients Derban, Binner & Mullineux 2005).

The presence of Nonperforming loans in Deposit Taking SACCOs (DTS) in Kenya has affected sustainability and growth of Sacco's industry which drew the concern of the government leading to the government of Kenya establishing the SACCOs Societies Regulatory Authority (SASRA). The regulations sought to improve operation of DTS, improve liquidity management and prevent amorphous borrowing from banks at higher interest rates, restore clients trust in SACCOs by the members and eliminate default rates rate (GOK, 2016).

1.1.3 Monetary Policy and Non-Performing Loans

Provision of credit to members is a main operation of the credit unions and the loan portfolio make up an important proportion of DTS (Kagwa-Pafula,2000). Loan portfolio performance is achieved due to monitoring, reviewing and supervision of DTS. Bloem

and Gorter (2001) suggested that a more or less predictable level of in credit unions. Under such circumstances, the holders of loans can make an allowance for a normal share of NPL sin the form of bad loan provisions, (Bercoff, Giovanniz & Grimardx, 2001). Deposit Taking SACCOs offers credit facilities to clients based on the deposit made by their members as the primary business accounting for over 90% of their income. Member's make deposit every month and get loan Loans based on share of the members and amount of deposit made. The adoption of SACCO Societies Regulatory Authority (SASRA) has promoted close monitoring of SACCO operation, licensing, supervision, and deposit taking.

1.1.4 Deposit Taking Savings and Credit Co-operative Societies in Nairobi County

Over the years, Kenyan SACCOs have catered for the needs of their membership. However, SACCOs are facing competition from banks which is further compounded by governance and financial management challenges. These issues have tainted the image of the SACCO sector. The board is the general administering authority of a SACCO comprising of governance and financial managers who manage the operations of the SACCOs (WOCCU, 2009). While this procedure was set up to guarantee members are enabled to run their SACCO.

The GOK set up The SACCOs Societies Regulatory Authority (SASRA) under the Ministry of Cooperative Development and Marketing in endeavors to change SACCOs and ensure that there is trust in member in general towards the SACCOs area and prodding Kenya's financial development through the mobilization of savings (Ministry of

Co-agents and Marketing, 2008). As indicated by the KGS (2009) for viable implementation of the policies, SASRA is allowed specific powers in law to manage SACCOs that fail to adhere to regulations.

SASRA stresses that as per vision 2030, the regulations objectives of instituting prudent policies and regulations DST is to improve transparency and accountability in the SACCO subsector. This is consistency with the reforms instituted by GOK through ministry of devolution to improve financial accessibility, financial efficiency and improve monetary stability of financial service providers in Kenya (IFSB 2010). SASRA perceives that regulations also seek to lower nonperforming loans, improve size of deposit and increase SACCOs; assets (Musyoki, 2008).

DTS offer small amount of loans to clients and small SMEs. The reimbursements are made every day, week after week, month to month, or following a month based of lending agreement. Loan repayment for some loans is made by one installment. A postponed portion is said to be reprobate and a repayment that has not been made constitute a default. DTS fund is the arrangement of credit to members and low-pay workers to empower and engage them in profit making enterprises.

1.2. Research Problem

Monetary policies focuses on administration of various monetary objectives such as price stability, growth of credit unions, accomplishing full labour market, smoothing the business cycle, avoiding financial crisis, settling longterm financial interest and the foreign exchange rates (Bordo, 2008). Control of monetary policy tools, for example,

credit and exchange rate, central bank rate, development of the money supply, lending and interest rate, security costs, credit accessibility and liquidity creation from financial institutions. Punita and Somaiya (2006) placed that money related determinants, lending rates, cash reserve ratio and statutory proportion influenced operations of credit unions.

In Kenya, regulated SACCO objective is to increase lending and volume of deposits. Introduction of Central Bank rate as a monetary policy tool lead to loan supply of less liquid SACCOs, deposit base and induce SACCOs ability to perform their expected roles within the financial system. Monetary policy foster stability of loan prices, interest rates and exchange rates (Olwey & Chiluwe, 2012). Monetary regulations exist for safeguarding the banking industry against systemic risk, protecting consumers from excessive charges such as loan interest charges and finally to achieve high financial returns in credit unions (Jalilian *et al.*, 2007). A study by Matemilola (2014) determined relationship between monetary policy and lending rate in deposit Taking financial institutions.

The results indicated that banking lending rate (BLR) improve monetary market rate (MMR) and improve quality of loan portfolio in deposit taking institutions. According to Leonce (2014) noted that monetary policy has direct and indirect effects on return on investment, high interest rate reduce inflation discouraging bank lending, decreases investment and increase in level of nonperforming loans. In Ghana, Kofi (2012) establish that inadequate monetary regulation impact of the level of NPLs, operating profits, interest incomes and loanable funds of Sinapi Aba Trust Microfinance. However, In any

case, Younus and Akhta (2009) indicated that Cash Reserve Requirement (CRR) have a significant decrease in lending rates and increase loan performance.

Local studies have been done in relation monetary policy in Kenya. Oduor (2009) found that the exchange rate channel of monetary policy transmission is effective in Kenya. Ngendo(2012) conducted a study on the relationship between non interest income and financial performance of commercial banks in Kenya. Nearby examinations have been done in relation to monetary policies in Kenya. Oduor (2009) found that the exchange rate channel fiscal policy transmission is powerful in Kenya. Manyuanda, (2014) Carried out a study on effect of nonperforming loans on the financial performance of SACCOs in Nairobi County.

The finding revealed a strong relationship between return on assets and independent variables firm size, leverage and nonperforming loans ratio. Mutwol and Kubasu (2016) determined the effects of open market operations, central bank rate, minimum reserve requirements and Kenya bankers' reference rate on loans portfolio performance among commercial banks in Kenya. The results revealed that there existed no significant relationship between open market operations, central bank rate, Kenya bankers' reference rate and loans portfolio performance. The study also revealed that credit approval and monitoring procedures to be focused on the borrower's cash flow and ability to repay in an effort to reduce loan default rate. This study sought to fill the existing knowledge gap by examining the relationship between monetary policies governing DTS on loan performance in Deposit Taking SACCOs in Kenya by answering the question, how does monetary policy affect loan performance in deposit taking SACCOs in Nairobi County?

1.3 Research Objective

To examine the relationship between monetary policy and nonperforming loans Deposit Taking SACCOs (DTS) in Nairobi County, Kenya

1.4 Value of the study

The outcome of the study would be significant to top management of the DTS who would be gain insight on the relationship between monetary policies and level of nonperforming loans of deposit taking SACCOs. This was enable the management to institutions measures to complies with the monetary policies and reduce level of NPLs in deposit taking credit unions in Kenya. The results of the study would be important to government through the ministry of devolution and policy makers and regulatory bodies such as central bank of Kenya and SASRA who would gain insight on the impact of monetary policies on NPLS and develop informed regulations framework and measures to improve effectiveness of the monetary policies and lower level of NPLs in credit unions in Kenya.

The study results further would be significant to scholars and researchers, as it would be form the foundation of which other studies can be carried out in respect to the relationship between monetary policy and regulatory framework on loan performance in credit unions and other financial institutions. Further, this study would add to the existing theory and literature on the relationship between of monetary policy and NPLs in credit unions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the existing literature on the subject under research. The matter contained in this chapter relates to past studies on macroeconomic policy and Non-Performing loans. The chapter also addresses the empirical, summary and research gap of the study.

2.2 Theoretical Review

This section discusses the various theories that underpin the study.

2.2.1 Modern Monetary Theory

Modern monetary theory clarifies only how the legislature, budgetary controllers and the budgetary foundations area collaborates, with a few financial analysts contending that comprehension of Reserve accounting is important to understanding fiscal approach choices (Wray, 2009) and Mitchell (Year). Graziani (1989) model Maintained that a central bank canny apply a viable control over the aggregate supply of cash and that any endeavor to exercise such control, by managing either the fiscal base or bank acknowledge, would be conflicting for the central bank's capacity.

The model expresses that at whatever point a holding reserve is set up by the financial expert, credit unions must have over the top access to the monetary base expected to meet the save proportion and that in this regard the regulator bank is compelled to receive an

accommodative conduct, to guarantee balance between cash request and supply, and view cash just as a part of the aggregate liquidity of the framework. The theory underpinned the critical role of loan and the amount of cash will undoubtedly change so as to coordinate the interest for cash, whichever the present level of interest rate, due to both the accommodative conduct appeared by the regulator bank, in its function and of the generalized practices, in managing operation of credit.

2.2.3 Macroeconomic Theory

This theory was proposed by Friedman (1963). The assumptions of the theory are that loan costs as a money related aspect. The theory is identified with Keynesian liquidity inclination hypothesis yet perceives extra source of loan fees interest for cash as well as foreign costs and cost push factors. The implicit supposition critical to the macroeconomic revolution is that financial policy would be made by insightful individual, acting without considering the political pressure and guided by impartial monetary technocrats. Further, macroeconomic theory expects that developing the cash supply in abundance of real growth causes expansion in interest rate.

Financing costs volatility in open economies results about because of various disequilibria in many markets particularly, the domestic market advertises foreign market and the labour market. Along these lines increment in interest rate exudes from three fundamental sources that incorporate overabundance cash supply, foreign costs and cost push factors (Were *et al.*, 2013). The consequences of the connection amongst expansion and credit execution are blended. In spite of the fact that the investigations of

Guru et al., (2002) in Malaysia and Jian et al., (2003) in Hong Kong revealed that presence of a higher inflation rate prompts higher loan performance and profitability, exact examinations, for example, Abreu and Mendes (2000) found that there existed a negative coefficient for the inflation and credit portfolio performance.

In pertinence to the examination, macroeconomic theory view developing cash supply in overabundance of financial real development as the reason for loan costs risks to raise that increase cost of credits. Interest rate volatility is view by the hypothesis as exuding from three principle sources that incorporate excess cash supply, outside costs and cost push factors and influence proficient in lowering default rate in deposit taking SACCOs in Kenya.

2.2.3 The Loanable Funds Theory

The theory was developed in 1930s by Wicksell's (1930). The loanable fund theory accepts balance financing cost is controlled by the request and supply conditions in the budgetary market for credit advertising. In this behavior, advertise loan fees are controlled by the variables that control the supply of and interest for credit. This fund is financial assets, which makes up loans and client savings. The market for credit funds brings house hold, enterprises, government and foreigners as either borrowers or savers (Were, 2013).

The loanable fund theory is a dynamic and maximizing hypothesis of financial institutions budgetary establishments operation that incorporates insight of knowledge of creation hypothesis, monetary intermediation and portfolio performance. The unified

model illuminates the relationship between the performance of performance portfolios and a credit union's yield of money related administrations. Portfolio execution determine the rate of profit for credits and deposit acquired at a discounted rate used to determine the present value of future return some portion of which are developed by deposit taking credit unions. All things considered, the amount of monetary administration yield is influenced by performance of credit portfolios in light of risk and availability of information handling.

The theory is appropriate for the examining as it tends to effective operation in an intermediation input that goes through deposit taking SACCOs facilitated the provision of finance. The loanable fund theory sets up detachability between the utilization of credit and the general maximization challenge, enhancing effectiveness. In addition, this model support the study in that some long-term theoretical level headed discussions in the money related loan performance, especially the one in regards to deposit and loan repayment in credit union in developing nations like Kenya.

2.2.4 Agency Theory

As indicated by the agency theory, there are two groups in a big enterprise, for example, credit unions, the investors who are the principals, and the supervisors who are the agents. The investors are the important in credit unions in light of the fact that the organization has a place with them. As proprietors, they get the benefit or bear the misfortune supervisors are the operators since they are employed by investor to run the everyday errand of the company. In foremost, the specialists should settle on choices to

the greatest advantage of the essential. To guarantee that operators are successful will require the primary to screen the agent (McColgan, 2001). Without monitoring, most of the supervisors will separate from the essential's destinations. They will settle on choices which upgrade their enthusiasm to the detriment of shareholders.

The propensity for agents to act to their greatest advantage rather than the essential is known as the important operator issue (Bofondi & Gobbi, 2003). According to agency theory, the principle agent issue can be decreased by better regulation framework, for example, appropriate reward for principles and executing successful money related strategies in store taking organizations. These foundation confront deficiencies in advertise assume control of inadequately oversaw credit union by administration are more perplexing as different government approaches on corporate value proprietorship (McColgan, 2001).

Screening of borrowers happens after gathering self-determination as gathering removals. A critical supposition in late investigation, for example, is that ideal data between borrowers takes into consideration homogeneously framed gatherings, which decrease the relative cost of capital for safe borrowers (Mutwol & Kubasu, 2016). There is justifiable reason reward to trust that information between pools of potential borrowers is more grounded than that between the loaning foundation and the obtaining pool. To access credit at low interest rate, borrowers are still regularly compelled to self-select their group at risk bunches inside a cloudiness of imperfect data (Trigo, Lee and Rhyne, 2004).

2.3 Determinants of Non-Performing Loans in Deposit Taking SACCOs

Weakening in credit quality is one of the real reasons for monetary delicacy.

2.3.1 Exchange rate

The exchange rate influences effective operation of credit unions (Moore and Craigwell, 2000). As indicated by Khemraj and Pasha (2009) real powerful exchange standard impact non-performing loan. An appreciation in return rates may have distinctive ramifications that can unfavorably influence the credit repayment capability of firms then again it can emphatically influence the loan repayment capacity of those borrowers who acquire (Fofack, 2005), the connection between Nominal viable conversion scale and non-performing asset is uncertain.

Macroeconomic precariousness would have results for the loan performance of credit unions in any nation (Stiglitz, 2001). Mwanza (2007) researched whether the level of subsidiary exercises is related with the market impression of interest rates and conversion standard hazard. The examination found a positive association between credit union stock return and long term and short term loan interest cost and exchange rates. The level of derivative exercises had a positive relationship with long term loan interest rate exposure yet adversely related with short term financing rate and exchange rate of exposure.

2.3.2 Cash Reserve Ratio

The save essential is a national bank arrangement that sets the base segment of customer store and notes that each keeping money foundation must hold as save. These required stores are frequently as exchange set away physically out a bank vault or store made with

a budgetary controller (Chodechai, 2004). In managing an account, additional hold is bank save in overabundance of the save essential set by a national bank. They are stores of cash more than the required totals. The hold essential can be used as an instrument of money related technique, in light of the way that the higher the save need is set, the less back store accepting affirmation unions should credit out, inciting lower money creation and perhaps finally to higher purchasing impact of the money in advance being utilized.

Usman (2005) expressed that factors that impact Sacco's arrangement of credit lead included sound and sensible working of credit unions in Nigeria is negatively affected by the choice of certain budgetary directions instruments for the control of hold cash operations. Such instruments join a resolutely controlled financing loan fee structure, facilitated credit, unremunerated hold requirements and offsetting liquidity control measures like the change securities of the past (Trigo, Lee and Rhyne, 2004).

2.3.3 Interest Rate

Interest rate risk for the most part has been related with poor money related performance of credit union. Without loan costs stable, local and foreign enterprises will remain away and assets will be occupied somewhere else. Infact, econometric confirmation of investment conduct demonstrates that notwithstanding traditional components, private venture is essentially and contrarily affected by vulnerability and macroeconomic instability (Sayedi, 2013). Financial reforms change stresses the annulment of loan fee and credit ceiling and the advancement of an aggressive domain with decreased

government control and possession. DTS that charge high financing cost would nearly confront a higher default rate or non performing advances.

Deposit for DTS are said to be vigorously reliant on the assets fundamentally gave by public in general as stores to back the advances being offered to the clients (Buyinza, 2010). There is a general idea that stores are the least expensive wellsprings of assets for credit union thus to this degree deposit have positive effect on DST if the interest for SACCO advances is high. That is, the more DTS can collect the more noteworthy is its ability to offer more credits and make benefits. Notwithstanding, one ought to know that if requests for banks advances are low, having more stores could diminish income and may bring about low benefit for the banks. This is on the grounds that stores like Fixed, Time or Term stores draw in high enthusiasm from the financial institutions to the investors.

2.3.4 Discount Rate

Open market operations are the best instrument for money policy adopted. Open market operations apart from having the advantage under the immediate and control of a governing SACCO authority, the exchanges can likewise be extensive or little and they can undoubtedly be turned around and executed fast. Brock (2010) indicated that on the association between banking institutions financial return rates and saving money focus in Canada, Western Europe, and Japan and revealed that banks raise their discount rate, lending rates due to increase in deposit rates. Increment in discount rates and lending loaning rates without increasing borrowing rate.

As per Obiero (2012), when the policy maker expands the discount rate, it does not immediately affect the stock market system. Rather, the increasing discount rate has a solitary direct impact. It turns out to be more costly for SACCO to get cash from the banks as banks interest rate of obtaining from the CBK increase. The expanding the discount rate can likewise cause a progressively outstretching influence and factors that impact SACCO's operations is affected.

2.3.5 Unemployment Rate

The labour demand of endeavors and other creation units, as well, can be separated in two parts of employment. .Furthermore, work opening. Because of the presence of multiple job holding, the quantity of occupations has a tendency to be bigger than the quantity of utilized people (Espinoza, 2010). Joblessness happens when individuals are without occupations and they have effectively searched for work within the previous month (Yolanda, 2006). Amid unemployment, the individuals who make advance from DTS cannot reimburse their credits. Without pay, credit reimbursement ends up plainly troublesome. Thus, when the joblessness rate is high, so with NPLs sum likewise goes high.

Udeh (2015) stated that the level of nonperforming credits was up before the emergency, fundamentally in light of the fact that the expanded use of existing clients was a noteworthy driver of Latin America's fast ascent in consumer lending and increment in unemployment rate. Presently, because of the recession, unemployment rate increments and it pushes levels of nonperforming loan significantly higher in credit union.

2.4 Empirical Review

There exist various empirical studies assessing the relationship between monetary policies and loan performance in developed and developing countries. Some of the document evidence mostly focuses on banks as discussed in this study.

2.4.1 International Evidence

In Taiwan, Hu, Li and Chu (2004) assessed how ownership structure influences Non-performing Loans (NPLs). Their results found that an improvement in the administration's shareholding encourages political support. Further, private shareholding induces more Non-performing Loans (NPLs) to be controlled by degenerate private ownership. The outcomes demonstrate that the rate of NPLs diminished as the proportion of government shareholding in a bank increase to 63.51%, while the rate from there on increased. Bank size is adversely identified with the rate of NPLs, which underpins their contention that bigger banks have more assets for deciding the nature of credits

Owizy (2013) assessed the effect of credit administration on financial performance of Nigerian banks, with specific reference to UBA Plc. Financial proportions related bank financial performance and credit factors were the information gathered from bank annual sources primarily the yearly reports and records of audited banks from 2004 - 2008. Descriptive, association and regression techniques were utilized as a part of the assessment. The results found that credit management significantly affects the financial returns of Nigeria banks.

2.4.2 Local Evidence

Kimani (2013) employed descriptive research design and analyzed data using descriptive analysis to assess the impacts of money policies on credit performance of commercial banks in Kenya. The assessment found that Open market operations offers the bank generally safe speculations with sureness in pay off and in this way, banks may lean towards OMO and that OMO likewise controls the bank interest rate on loan of monetary policies in an economy.

Mutwol and Kubasu (2016) examine the impacts of open market operations, central bank rate, Minimum reserve policy and Kenya banker' reference rate on loan portfolio performance among business banks in Kenya. The study was a survey of 30 banks the investigation adopted a descriptive survey design and utilized census approach. The results found that there was no significant associations between open market operations, central bank rate, Kenya banker' reference rate and NPLs. This investigation concentrated on commercial banks a further study needs to be done to examine impacts of money policies strategies on nonperforming loan in DTS.

2.5 Conceptual Framework

Conceptual framework provides a link between study variables (Coulthard, 2004). Figure 2.1 indicates the links between cash Reserve Ratio, Interest Rate, Open Market Operations and retained Earnings, Controlled variable was size of DTSs and dependent variable was nonperforming loans. From the review of the past studies, monetary policy foster stability of loan prices, interest rates and exchange rates. Monetary policy exist for

protect credit union against systemic risk, protecting consumers from excessive interest on credit (Olwey & Chiluwe, 2012).

Leonce (2014) noted that monetary policy has direct and indirect effects on return on investment, high interest rate reduce inflation discouraging bank lending, decreases investment and increase in level of nonperforming loans while Mutwol and Kubasu (2016) revealed that open market operations, central bank rate, minimum reserve requirements and Kenya bankers' reference rate improve loans portfolio performance among commercial banks in Kenya. This extended that Cash Reserve Ratio, interest rate, open market operations and retain earnings had a significant effects on NPLS in SACCOs.

Figure 2.1: Conceptual Model

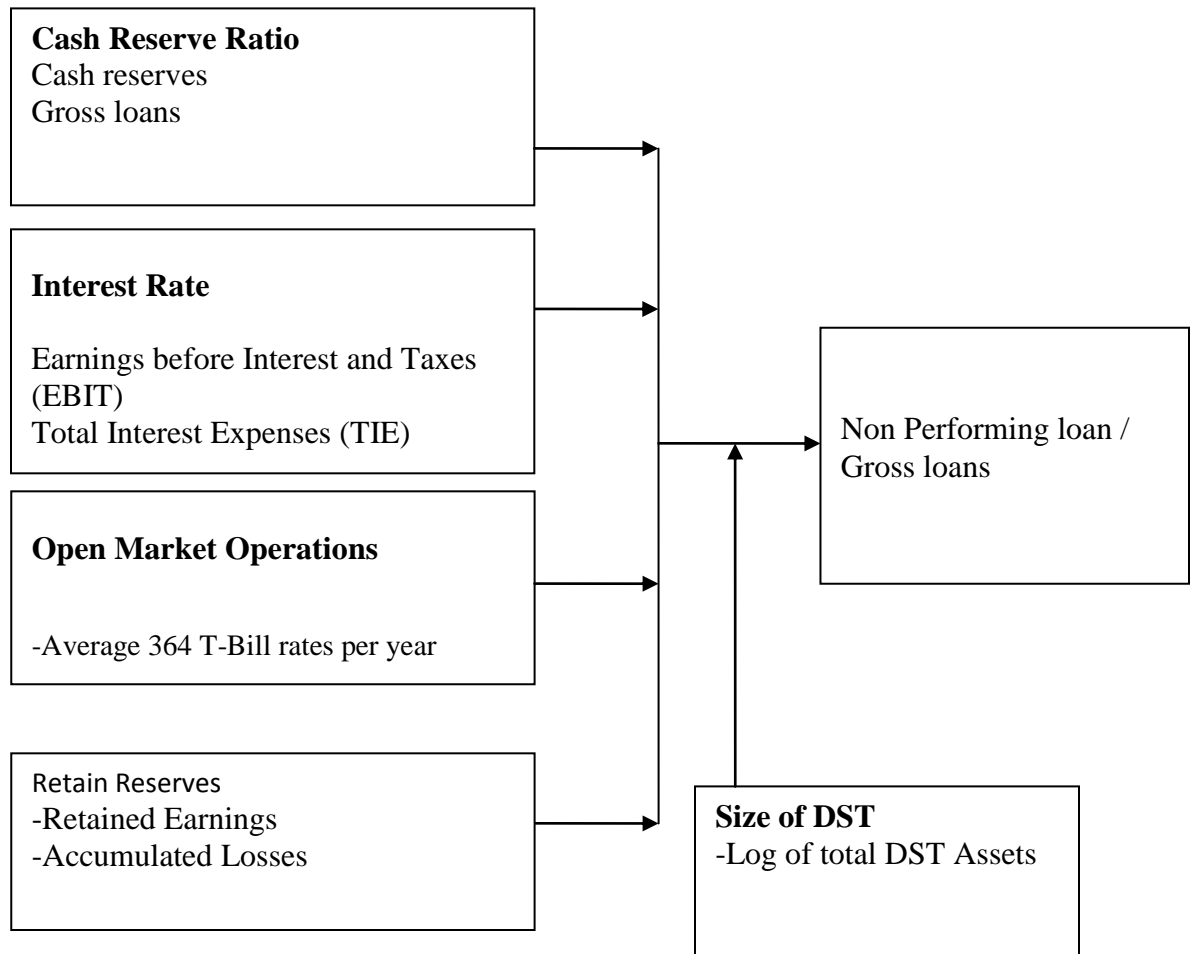
Independent variable

Dependent variable

Monetary Policy

Non Performing

Loans



Source: Research Data (2017)

2.6 Summary of Literature Review

From the review of the study, Non-Performing Loans occur in credit unions due to member defaults. Berger and Gregory (2000) found that GDP growth impact negatively on level of NPL.

In Kenya monetary policies has been formulated and implemented such as capping interest rates, open market and Cash Reserve Ratio. Most of the reviewed local studies focus on commercial banks such as Mutwol and Kubasu (2016) and Kimani (2013 who focus on investigating effects of open market operations, central bank rate, minimum reserve requirements and Kenya bankers' reference rate on loans portfolio performance in banks in Kenya. Monetary policy focus on streamlining the operation of SACCOs. This study seeks to establish the relationship between monetary policy and NPLs in DTS in Nairobi County. Chemjor (2007) assessed factors contributing to occurrence of NPLs in banks in Kenya and reveals that banks require policies and management practices to reduce level of NPLS their current NPLs. The ramifications of fiscal policies on level of Nonperforming loans in DTS cannot be underrated. This study sought to examine the relationship between monetary policies and NPLs in DTS in Nairobi County.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the research design that was adopted by the study. The chapter specifically address population of the study, data collection, validity and reliability of the data collection and data analysis and presentation.

3.2 Research Design

Research blue print alludes to the way the study is structured, that is the approach that was used to complete the study (Mugenda & Mugenda, 2003). Cross sectional research design is the research design in which quantity of data was gathered and analyzed to depict the specific aspects in the current trends. The significant reason for descriptive survey seeks to describe the situation as it is in its present form. The research design was be chosen as it helped in establishing the relationship between monetary policies on nonperforming loans in DTS in Nairobi County, Kenya

3.3 Target Population

The population of this study was all the 29 licensed DTS in Nairobi County, Kenya operating Front Office Service Activity (FOSAs) and operating under SASRA guiding financial reporting framework. These DTS in Kenya are licensed and regulated pursuant to the provisions of the SASRA. The study adopted a census survey where all the 29 Deposit Taking SACCOs formed part of the study.

3.4 Data Collection

The study collected secondary data from financial reports from deposit taking SACCOs. To a large extent, secondary data of the study was collected from the financial statements of the deposit taking SACCOs institutions and books. Of critical importance articles with information on loan Performance level, Interest Rate, unemployment, Cash Reserve Ratio and Deposit Rate from the SACCOs annual financial report and SASRA annual financial reports. The study collected data for a period of five years from 1st January 2012 to 31st December 2016.

3.5 Data Analysis

Data was analyzed through description statistics, means and standard deviations to determine the extent to which monetary policy influence level of nonperforming loans in deposit taking SACCOs. Further inferential statistics regression analysis was done to establish whether there exist a significant correlation between monetary policy and non performing loan in DTS in Nairobi Kenya. Study utilized the relationship to know the correlation between the independence and dependent determinants. The relationship was adopted to examine whether there exist a significant correlation between the variables.

3.5.1 Diagnostic Tests

The study undertook diagnostic test to test the normality distribution of the data that was collected and therefore testing the distribution probabilities. For a normal distribution, the probability should be greater than 0.1. The statistic for Kurtosis (K) was also carried out

to test whether there exists a platykurtic which suggested whether distributions are flat about the normal. The study was also tested for skewness where if normal distribution of the data exist, the Skewness, S was zero $S=0$.

3.5.2 Analytical Model

The study model tested the relationship between variables. Non-performing loans are mainly a function of monetary policies hence the general regression equation is of the form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Where;

Y= Non Performing Loans (Non Performing loan/Gross Loans)

X₁= Cash Reserve Ratio

X₂= Interest Rate

X₃= Open Market Operations

X₄= Retain Reserves

X₅= Size of DST

3.5.3 Operationalization of Variables

Variables	Indicator	Measurement	Extracted From
Y	Non-Performing Loans	Non-Performing loan / Gross loans	Extracted from financial books on profit and loss statement
X ₁	Cash Reserve Ratio	Cash reserves/Total Deposits	Financial Report
X ₂	Interest Rate	Earnings Before Interest and Taxes (EBIT) / Total Interest Expenses (TIE)	Balance sheet statement
X ₃	Open Market Operations	Average 364 T-Bill rates per year	Financial Reports
X ₄	Retain Reserves	Retained Earnings/Accumulated Losses	Financial Reports
X ₅	Size of the DTS	Log of total DST Assets	Balance Sheet Report

3.5.4 Test of Significant

This testing was used to test whether to accept or reject the hypotheses. ANOVA results on the F-statistics used in testing overall significance of the regression model

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study relationship between monetary policy and loan performance Deposit Taking SACCOs in Nairobi County. The chapter presents the data analysis, results and interpretations of the findings. The study sought to collect and analyze consolidated data from the 29 Deposit Taking SACCOs in Nairobi County. Secondary data obtained from reports published by SASRA and from SACCOs financial books and financial reports provided by the SACCOs for 5 years from 2012-2016. From financial reports, interest & taxes and total assets was also to be extracted from financial statements. Data on Non-Performing Loans and total loan were also collected. Data on treasury bills and gross loans, retain earnings and total assets was extracted from balance sheet statement. The data collected was for the period 2012-2016.

4.2 Descriptive Analysis

Table 4.1: Descriptive Analysis on Monetary Policy and Loan performance for 2012 to 2016

Variables	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Non-Performing Loans (NPLs/GLs)	0.0172	0.8163	0.05073	0.3914	4.495	2.1612
Cash Reserve Ratio (Cash reserves/Total Deposits)	0.0204	0.0795	0.0518	0.03001	-1.057	3.8031
Interest Rate (Earnings Before Interest and Taxes (EBIT) / Total Interest Expenses (TIE)	0.02715	0.1097	0.0874	0.035	-2.710	6.859
Open Market Operations (364 Treasury Bill)	0.08183	0.2165	0.1535	0.0371	5.152	24.537
Retain Reserves (Retained Earnings/Accumulated Losses)	0.02639	0.9037	0.7104	0.0512	2.748	6.372
Size of the DTS (Log of total DST Assets)	0.2131	.98284	0.7283	0.3165	3.216	7.0211

Source: Research Data (2017)

The descriptive results indicated that the Non-performing loans (NPLs) for SACCOs had a mean of 0.05 , a minimum of 0.0172 and a maximum of 0.8163 supported by standard deviation of 0.3914 indicating that on average the Sacco's had been making registering non-performing loans while standard deviation denoted a high loan variability among the SACCOs. NPLs had skewness of 4.495 and kurtosis of 2.1612 exhibiting a positive, skewed and high peaked data distribution.

The results indicated that the cash reserve ratio mean was 0.0518, a minimum mean of 0.0204 and a maximum mean of 0.0795 and a standard deviation of 0.03001. This implied that on average, SACCOs increase cash reserve on increase in total customer

deposits. Cash reserve ratio had skewness of -1.057 and kurtosis of 3.8031. Indicating a negatively and high peaked data distribution hence most SACCOs had lower cash reserve compared to the mean

The SACCOs' interest rate had a mean of 0.0874, a minimum mean of 0.02715 and a maximum mean of 0.1097. This implied that on average SACCOs experienced increase on earnings before interest and taxes on average of KSHs 0.0874 on expense incurred. Testing distribution of interest rate data, the study found that Interest rate skewness of -2.710 and kurtosis of 6.859 indicating a negatively skewed and moderately high peaked data distribution.

The results indicated that mean of 364 T-Bill rate was 0.1135 with a minimum mean of 0.08183 and a maximum of 0.2165 supported by a standard deviation of 0.0371. This implied that on average, Deposit Taking SACCOs earned 15.35% on investing in open market operations. Open Market Operations had skewness of 5.152 and kurtosis of 24.537 exhibiting a positively skewed and highly peaked data distribution.

The descriptive results also indicated that there was a mean of 0.7104 retain reserves with a minimum mean of 0.02639, a maximum mean of 0.9037 and standard deviation of 0.0512. This implied that on average, Deposit Taking SACCOs increase retained earnings to cater for every increase in losses incurred by SACCOs. The study found retained earnings had Skewness of 2.748 and kurtosis of 6.372 exhibiting positively skewed and moderate peaked data distribution.

The results further indicated that the Deposit Taking SACCOs' Assets had a mean of 0.7283, a minimum mean of 0.2131 and a maximum mean of 0.98284 with a standard

deviation of 0.3165. This implied that on average Deposit Taking SACCOs has increase in assets for the over the study period. In testing distribution status of the Asset data, the study found asset had Skewness of 3.216 and kurtosis of 7.0211 exhibiting positive skewed and moderate peaked data distribution.

4.3 Correlation Analysis

Table 4. 2: Correlation between Monetary Policy and NPLs

		Non Performing Loans (NPLs/GLs)
Cash Reserve Ratio (Cash reserves/Total Deposits)	Pearson Correlation	-0.7059*
Interest Rate (Earnings Before Interest and Taxes (EBIT) / Total Interest Expenses (TIE)	Pearson Correlation	.7624**
Open Market Operations (364 Treasury Bill)	Pearson Correlation	.5081*
Retain Reserves (Retained Earnings/Accumulated Losses)	Pearson Correlation	.6472*
Size of the DTS (Log of total DST Assets)	Pearson Correlation	-0.7429*

** -Correlation is significant at the 0.01 (2 tailed)

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

Source: Research Data (2017)

The Pearson Product Moment correlation matrix analysis was done to examine whether there exist a relationship between variables interms of direction (positive or negative) and strength of correlation. The study adopted a criterion by Mirie (2014) that correlation coefficient of $r=0.7$ and above was strong, correlation coefficient $r=0.4$ -and < 0.7 as moderately strong while coefficient $r= 0$ and < 0.4 as weak. The Pearson Product Moment correlation analysis was also used to test whether the variables had high

multicollinearity where $r > 0.9$ which would indicate existence of high multicollinearity. The correlation results in Table 4.3 indicated that there exist a strong, significant and negative correlation between cash reserve ratio and nonperforming loans (NPLs) as $r = 0.7059$. The results indicated that there existed a strong, positive and significant relationship between interest rate and loan performance in Deposit Taking SACCOs as $r = 0.7624$ significant at 0.01. The results also indicated that there exist a moderately strong, negative and significant relationship between open market operations and loan performance as $r = 0.5081$ significant at 0.05,

Correlation results also indicated that there exist a moderately strong, positive and significant relationship with NPLs in Deposit Taking SACCOs, $r = 0.6472$. This implied that increase in retained earnings would increase loan performance in Deposit Taking SACCOs. Further correlation results indicated that there exist a strong, positive and significant relationship between Deposit Taking SACCOs size and loan performance as $r = 0.7429$. This implied that increase in Deposit Taking SACCOs' assets lead to decrease in level of Nonperforming loans. 4.4 Monetary Policy and Loan Performance in DT SACCOs

A regression analysis between the dependent variable and the independent variables was performed; independent variable being Cash Reserve Ratio, Interest Rate, Open Market Operations, Retain Reserves and Size of Deposit Taking SACCOs and loan performance being dependent variable.

Table 4. 3: Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.8791a	0.7728	0.7581	0.0153

Predictors: (Constant), Cash Reserve Ratio, Interest Rate , Open Market Operations, Retain Reserves and Size of Deposit Taking SACCOs

Dependent Variable: Loan Performance

Source: Research Data (2017)

The model summary indicated that adjusted R^2 is 0.7581, Std Error= 0.0153 indicate that there exist significant variation of 75.81% of loan performance varied with variation in monetary policies that is Cash Reserve Ratio, Interest Rate , Open Market Operations, Retain Reserves and Size of Deposit Taking SACCOs

Table 4. 4: Goodness of Fit (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.604	4	5.901	50.5098	0.000a
Residual	60.083	144	0.417		
Total	13.332	148			

Predictors: (Constant), Cash Reserve Ratio, Interest Rate , Open Market Operations, Retain Reserves and Size of DTM

Dependent Variable: Loan Performance

Source: Research Data (2017)

The study determined the goodness of fit of the model using ANOVA analysis. The study found that the regression model had a significant goodness of fit as F-Calculated =50.5098 far exceeded F-critical 2.3719 and PV=0.000. This implied that the model was fit to explain the relationship between monetary policies and loan performance in DTSs

Table 4. 5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized	t	Sig.
			Coefficients		
	B	Std. Error	Beta		
(Constant)	4.7863	.791		6.051	0.0003
Cash Reserve Ratio	-0.8726	.3241	0.8817	-2.6923	0.0215
Interest Rate (EBIT/TIE)	0.6195	.0951	0.5969	6.5142	0.0000
Open Market Operations	-0.7758	0.1332	-0.7987	-5.8245	0.0011
Retain Reserves (REs/ALs)	-0.2932	0.1425	-.3190	-2.0577	0.0056
Size of the DTS	-1.3850	0.8210	-1.2436	-1.6870	0.001

Predictors: (Constant), Cash Reserve Ratio, Interest Rate , Open Market Operations, Retain Reserves and Size of DTSSs

Dependent Variable: Loan Performance

Source: Research Data (2017)

The resultant regression model takes the form of from

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

$$Y = 4.7863 - 0.8726X_1 + 0.6195X_2 - 0.7758 X_3 - 0.2932X_4 - 1.3850 X_5 + e$$

Regression coefficient analysis indicated that loan performance of the Deposit Taking SACCOs was significantly predicted by cash reserve ratio ($\beta_1 = -0.8726$, $P=0.0215 < 0.05$). The coefficient finding on interest rate significantly and positively predict loan performance in SACCOs ($\beta_2 = 0.6195$, $P= 0.000 < 0.05$). The results on open market operations indicated that it's predict negatively and significant influence on loan performance in SACCOs ($\beta_3 = -0.7758$, $P=0.011 < 0.05$). The results also indicated that retained earnings predict significant and negatively relationship with loan performance in

Deposit Taking SACCOs ($\beta_4 = -0.2932$, $P=0.0056 < 0.05$). Further results indicated that size of the Deposit Taking SACCOs predict significant and negative relationship with loan performance in Deposit Taking SACCOs as ($\beta_5 = -1.3850$ $P=0.001 < 0.05$).

4.5 Interpretations of the Findings

The findings revealed that loan performance in Deposit Taking SACCOs is determined by monetary policies while increase in some monetary policies increases loan performance and other decrease loan performance as SACCOs had a mean of 0.05 indicating that on average the SACCOs had been making registering non-performing loans while standard deviation denoted a high loan variability among the Deposit Taking SACCOs.

The results indicated that the cash reserve ratio mean was 0.0518 and retains earnings with a mean of 0.7104 and Deposit Taking SACCOs Assets decrease level of loan performance while , interest rate , with a mean 0.0874, and open market operations with a mean 0.1132 improve loan performance in Deposit Taking SACCOs . The findings concurred with Taiwan, Hu, Li and Chu (2004) the rate of NPLs diminished as the proportion of Open market operations, interest rate and retain earnings Banking institutions size is adversely identified with the rate of NPLs, which underpins their contention that as bigger banks have more assets for deciding the nature of credits The study revealed that on average, SACCOs increase retained earnings to cater for every increase in losses incurred by Deposit Taking SACCOs.

The correlation findings revealed that there exist is a strong, significant and negative correlation between cash reserve ratio and nonperforming loans (NPLs) as $r=0.7059$, and

that there existed a strong, negative and significant relationship between interest rate and loan performance in Deposit Taking SACCOs as $r=0.7624$ significant at 0.01. This implied that increase in cash ratio and interest rate would lead to decrease in level on NPLs and improvement in loan performance.

The results also indicated that there exist a moderately strong, negative and significant relationship between open market operations and loan performance as $r=0.5081$ significant at 0.05. This implied that increase in Open market Operations that increase in investing in 363 TBs would decrease level of NPLS in Deposit Taking SACCOs. The findings concurred with The results concurred with Kimani (2013) that money policies that is Open market operations offers the bank generally safe speculations with sureness in pay off controlling the banking institutions interest rate and improve loan performance.

Correlation results also indicated that there exist a moderately strong, positive and significant relationship with NPLs in Deposit Taking SACCOs, $r=0.6472$. This implied that increase in retained earnings would increase loan performance in SACCOs. Further correlation results indicated that there exist a strong, positive and significant relationship between Deposit Taking SACCOs size and loan performance as $r=0.7429$. This implied that increase in Deposit Taking SACCOs' assets lead to decrease in level of Nonperforming loans. The findings were consistent with Bercoff, Giovanniz and Grimardx (2013) using accelerated failure time (AFT) model revealed that bank size measured by log of assets had a positive effect but asset growth had a negative effect on NPLs.

The regression results revealed that different monetary policies have positive and negative relationship with loan performance in SACCOs in Kenya. Regression coefficient analysis indicated that loan performance of the SACCOs was significantly predicted by cash reserve ratio ($\beta_1 = -0.8726$, $P=0.0215 < 0.05$). The findings concurred with Bercoff, Giovanniz and Grimardx (2013) that increase in cash reserve adequacy and monetary expansion (M2/reserves) led to increase in level of NPLs as reasons behind the banking fragility.

The study found that interest rate significantly and positively predict loan performance in SACCOs ($\beta_2 = 0.06195$, $P= 0.000 < 0.05$) and that open market operations predict negatively and significant influence on loan performance in Deposit Taking SACCOs ($\beta_3 = -0.7758$, $P=0.011 < 0.05$). This implied that increase in interest rate and open market operations increase loan performance in SACCOs. The findings are consistent with Mutwol and Kubasu (2016) that open market operations, interest rate, minimum reserve requirements improve loans portfolio performance among commercial banks in Kenya.

The study found that retained earnings predict significant and negatively relationship with loan performance in Deposit Taking SACCOs ($\beta_4 = -0.2932$, $P=0.0056 < 0.05$). This implied that increase in retain earnings would lead to increase in NPLs in Deposit Taking SACCOs. Further results indicated that size of the Deposit Taking SACCOs predict significant and negative relationship with loan performance in Deposit Taking SACCOs as ($\beta_5 = -1.3850$ $P=0.001 < 0.05$). The findings is consistent with Leonce (2014) that monetary policy has direct and indirect effects on high interest rate reduce inflation discouraging bank lending, decreases investment and increase in level of nonperforming loans in banking institutions.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter present summary, conclusion and recommendation of the findings. The objective of the study was establishing the relationship between monetary policy and loan performance of SACCOs in Kenya.

5.2 Summary

The study revealed that loan performance in Deposit Taking SACCOs in determine by monetary policies while increase in some monetary policies increases loan performance and other decrease loan performance as descriptive results indicated that on average the SACCOs had been making registering non-performing loans while standard deviation denoted a high loan variability among the Deposit Taking SACCOs. The study revealed that cash reserve ratio mean was 0.0518 and retains earnings with a mean of 0.7104 and Deposit Taking SACCOs Assets decrease level of loan performance while , interest rate, with a mean 0.0874, and open market operations with a mean 0.1132 improve loan performance in Deposit Taking SACCOs .Thus NPLs diminished as the proportion of Open market operations, interest rate and retain earnings in SACCOs increases. The Deposit Taking SACCOs size is adversely identified with the rate of NPLs implying that increase in size of SACCOs lead to increase in level of NPLs. The study revealed that on average, Deposit Taking SACCOs increase retained earnings to cater for every increase in

losses incurred by Deposit Taking SACCOs. From correlation results, the study revealed that there is a strong, significant and negative correlation between cash reserve ratio and nonperforming loans (NPLs), that there existed a strong, negative and significant relationship between interest rate and loan performance in SACCOs and that there is a moderately strong, negative and significant relationship between open market operations and loan performance thus increase in Open market Operations that increase in investing in 363 TBs would decrease level of NPLS in SACCOs. Money policies such as Open market operations offer the SACCOs generally safe speculations with sureness in pay off controlling the interest rate and improve loan performance.

The study revealed that increase in retained earnings would increase loan performance in SACCOs as its lower level of NPLs and that there is a strong, positive and significant relationship between Sacco's size and loan performance demonstrating that increase in SACCOs' assets lead to decrease in level of Nonperforming loans. From the regression results the study revealed loan performance of the SACCOs was significantly and negatively predicted by cash reserve ratio, this was confirmed from existing theory that increase in cash reserve adequacy and monetary expansion ($M2/reserves$) led to increase in level of NPLs as reasons behind the banking fragility. The study established that interest rate significantly and positively predicts loan performance in SACCOs and that open market operations predict negatively and significant influence on loan performance in SACCOs hence increase in interest rate and open market operations decrease loan performance in SACCOs. Open market operations, interest rate, minimum reserve requirements monetary policies were also found to improve loans portfolio performance among commercial banks in Kenya.

The study revealed that retained earnings predict significant and negatively relationship with loan performance in Deposit Taking SACCOs and that increase in retain earnings would lead to increase in NPLs in SACCOs. Further the study revealed that size of the Deposit Taking SACCOs predicts significant and negative relationship with loan performance in Deposit Taking SACCOs.

5.3 Conclusions

The study concluded that Deposit taking SACCOs experience occurrence of NPLs occasioned by increase in application of monetary policies. The study conclude that cash reserve ratio retains earnings and Deposit Taking SACCOs Assets decrease level of level of NPLs DTSS The study concluded that NPLs diminished as the proportion of Open market operations, interest rate and retain earnings in SACCOs increases and that SACCOs size is adversely identified with the rate of NPLs implying that increase in size of Deposit Taking SACCOs lead to increase in level of NPLs.

From the findings, the study concluded that increase in retained earnings would increase loan performance in Deposit Taking SACCOs as its lower level of NPLs and that exist a strong, positive and significant relationship between SACCOs size and NPLs demonstrating that increase in Deposit Taking SACCOs' assets lead to decrease in level of Nonperforming loans.

From the results, the study concluded that NPLs of the Deposit Taking SACCOs was significantly and negatively predicted by cash reserve ratio as increase in cash reserve adequacy and monetary expansion led to increase in level of NPLs as reasons behind the banking fragility.

The study concluded that interest rate significantly and positively predict NPLs in Deposit Taking SACCOs and that open market operations predict negatively and significant influence on loan performance in SACCOs hence increase in interest rate and open market operations decrease loan performance in Deposit Taking SACCOs. Open market operations, interest rate, minimum reserve requirements monetary policies were also found to improve loans portfolio performance among commercial banks in Kenya.

The study concluded that retain earnings predict significant and negatively relationship with loan performance in Deposit Taking SACCOs and that increase in retain earnings would lead to increase in NPLs in SACCOs. Further the study revealed that size of the Deposit Taking SACCOs predicts significant and negative relationship with NPLs in Deposit Taking SACCOs.

5.4 Recommendations for policy and practice

The study recommend that management in Deposit Taking SACCOs and Sacco regulatory authority should devise measures to reduce gross loans and increase cash reserves. The study found that loan performance of the Deposit Taking SACCOs was significantly and negatively predicted by cash reserve ratio as increase in cash reserve adequacy increase in level of NPLs weakening Deposit Taking SACCOs performance.

From the findings and conclusions, the study recommend that the financial regulatory authorities such as CBK and SASRA should formulate policies that should foster SACCOs involvement in investing in treasury bills, open Market operations as interest rate significantly and positively predict loan performance in Deposit Taking SACCOs and that open market operations predict negatively and significant influence on loan performance in Deposit Taking SACCOs. Policies should be developed to manage change in interest rate and improve open market operations to

achieve loan performance in SACCOs. Open market Operations that increase in investing in 363 TBs would decrease level of NPLS in Deposit Taking SACCOs. Money policies such as Open market operations offers the Deposit Taking SACCOs generally safe speculations with sureness in pay off controlling the interest rate and improve loan performance.

The study established that retain earnings predict significant and negatively relationship with loan performance in Deposit Taking SACCOs and that increase in retain earnings would lead to increase in NPLs in Deposit Taking SACCOs. The study recommend that management of Deposit Taking SACCOs should devise measures to reduce occurrence of accumulated losses and increase retained earnings to foster retain reserves.

5.5 Limitations of the Study

This study was dependent on financial statements and records from Deposit Taking Saving Credit and Cooperative Societies in Nairobi County, Kenya but some were unwilling to give such information. However, the researcher explained to the SACCOs authorities that the sought information was to be used for academic purposes and would not be released to third party.

The study faced an inability to include more deposit taking SACCOS institutions in other regions in Kenya. This study concentrated only on SACCOS in Nairobi. The study would have covered more SACCOs but the study focus on those SACCOs that had been in registered under SASRA and been in operations for 5 years and DTs. This study therefore could not be generalized to all other SACCOs which had been operation for more than 10 years.

The period of the study was a 5 years' time span. The data collected was from 2012 to 2016 .which could not be appropriate to deduce a strong relationship between variables. A longer period of time could be considered for a strong findings on applicability of monetary policies and level of Nonperforming loans in Deposit Taking SACCOs in Kenya . A panel data for shorted intervals such as semiannually or quarterly would be preferred to be able to conduct a panel assessment to reduce this limitation.

5.6 Suggestions for Further Research

This study sought the relationship between monetary policies and Non-performing loans in deposit taking SACCOs. A further study could be carried out to determine the relationship between monetary policies and nonperforming loans in deposit taking microfinance institutions.

The study recommend that a further study to be carried out to examine the determinant of monetary policy in deposit taking SACCOS and other financial institutions such as microfinance institutions and commercial banks .

A further study should be conducted to determine effects of open market operations and loan performance in deposit taking Microfinance institutions in Kenya. A further study should be carried out to examine the relationship between interest rate and loan performance deposit taking Microfinance institutions in Kenya and other financial institutions such as banks listed at Nairobi Security Exchange.

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APPEDICES

Appendix I : Financial Report Information

Year	2012	2013	2014	2015	2016
Nonperforming Loan					
Total Deposit					
Gross loan					
Total Assets					
Retain Earnings					
Average 364 T-Bill rates					
Total Interest Expenses (TIE)					
Cash reserves					
Retained Earnings					

Appendix II: List of Saccos under Sasra in Nairobi

1. Afya Sacco Society Ltd
2. Airports Sacco Society Ltd
3. Asili Sacco Society Ltd
4. Chai Sacco Society Ltd
5. Chuna Sacco Society Ltd
6. Comoco Sacco Society Ltd
7. Farijisacco Society Ltd
8. Githuguri Dairy Farmers Co-Operative Society Ltd
9. Harambee Sacco Society Ltd
10. Hazina Sacco Society Ltd
11. Jamii Sacco Society Ltd
12. Kenpipe Sacco Society Ltd
13. Kenya Police Staff Sacco Society Ltd
14. Kingdom Sacco Society Ltd
15. Metropolitan Sacco Society Ltd
16. Mwalimu National Sacco Society Ltd
17. Mwito Sacco Society Ltd
18. Nacico Sacco Society Ltd
19. Nation Staff Sacco Society Ltd
20. Orthodox Development Sacco Society Ltd
21. Safaricom Sacco Society Ltd

22. Sheria Sacco Society Ltd
23. U.N. Sacco Society Ltd
24. Ukulima Sacco Society Ltd
25. NSSF Sacco Society Ltd
26. Universal Traders Sacco Society Ltd
27. Wana-Anga Sacco Society Ltd
28. Wanandege Sacco Society Ltd
29. Waumini Sacco Society Ltd

Source: Sasra Annual Report (2017)

Appendix III: Variable Indicator Data

	Size-(LOGTA)	Loan
Name of DTS-Nairobi county	(LOGTA)	(TLTA)
Afya Sacco Society Ltd	0.01	10.08
Airport Sacco Society Ltd	0.01	8.62
Asili Sacco Society Ltd	0.05	9.20
Chai Sacco Society Ltd	0.02	9.19
Chuna Sacco Society Ltd	0.01	9.24
Comoco Sacco Society Ltd	0.01	8.76
Harambee Sacco Society Ltd	0.01	10.25
Hazina Sacco Society Ltd	0.01	9.55
Jamii Sacco Society Ltd	0.05	9.26
Kenpipe Sacco Society Ltd	0.01	9.16
Kenya Police Sacco Society Ltd	0.00	10.06
Kingdom Sacco Society Ltd	0.01	8.73
Magereza Sacco Society Ltd	0.02	9.64
Mwalimu National Sacco Society Ltd	0.00	10.39
Nacico Sacco Society Ltd	0.02	9.41
NSSF Sacco Society Ltd	0.04	9.18
Nation Sacco Society Ltd	0.04	8.97
Safaricom Sacco Society Ltd	0.01	9.19
Sheria Sacco Society Ltd	0.01	9.45

Tembo Sacco Society Ltd	0.03	8.97
Transcom Sacco Society Ltd	0.00	8.76
Ufundi Sacco Society Ltd	0.01	9.12
Ukristo Na Ufanisi Wa Anglicana Sacco Society Ltd	0.04	8.89
Ukulima Sacco Society LTD	0.00	9.86
United Nation Sacco Society Ltd	0.01	9.88
Wana-Anga Sacco Society Ltd	0.03	8.99
Wananchi Sacco Society Ltd	0.11	8.99
Wanandege Sacco Society Ltd	0.04	9.07
Waumini Sacco Society Ltd	0.02	6.31

Source: Research Data (2017)

**Appendix IV: Aggregate financial soundness indicators of DT-SACCO Societies,
2016-2012**

FINANCIAL INDICATORS	2016	2015	2014	2013	2012
NPLs to Total Gross Loans	0.0512	0.0573	0.472	0.030 1	0.260 5
Interest Rate Margin	0.4297	0.4570	0.046 8	0.417	0.301 4
Retain Earning Reserves	0.06676	0.06504	0.063 8	0.472	0.319
Interest Rate Ratio	0.0513	0.0449	0.048 7	0.002 91	0.039 5
364 T-Bill Rate (X1)	0.0505	0.0936	0.145 7	0.109 1	0.104 2

Source: Research Data (2017)

Appendix V: Consolidated Data

Variables	2012	2013	2014	2015	2016
364 T-Bill Rate (X1)	0.0505	0.0936	0.1457	0.1091	0.1042
Cash Reserve Ratio (X3)	0.0450	0.0475	0.0525	0.0525	0.0525
Interest Rate (X2)	0.0679	0.0828	0.1576	0.0883	0.085

Source: Research Data (2017)

**Appendix VI: DT-SACCOs By Total Asset Sizes, Net Loans , Deposit And Total
Income In 2016-2012**

	NAME OF DT-SACCO	TOTAL ASSETS (KSHS)	TOTAL DEPOSITS (KSHS)	NET LOANS (KSHS)	TOTAL INCOME (KSHS)
1	Mwalimu National	32,322,172,000	22,699,334,000	22,374,878,000	4,228,000,000
2	Harambee	20,378,275,651	13,401,222,855	15,718,083,863	2,065,006,538
4	Kenya Police	17,536,017,000	11,808,374,000	13,983,433,000	2,589,125,000
5	Afya	13,425,541,251	10,885,491,228	10,504,057,288	1,835,418,700
6	United Nations	10,087,475,507	7,777,889,283	7,070,373,979	1,458,679,131
7	Ukulima	9,212,277,075	6,716,211,924	6,839,384,151	1,092,061,489
8	Metropolitan	8,550,627,577	4,777,870,785	7,255,037,324	1,227,499,577
9	Hazina	5,029,370,321	4,066,533,585	4,127,091,824	605,776,399
10	Magereza	4,125,331,003	3,061,146,742	2,087,417,273	472,820,414
11	Sheria	4,125,135,039	2,896,960,130	3,431,040,503	530,633,700
12	SAFARICOM	3,224,119,317	2,521,776,609	2,772,999,628	335,123,794
13	NACICO	2,822,230,130	1,661,230,929	1,476,608,803	446,731,782
14	WAUMINI	2,773,956,585	2,158,733,453	2,470,796,743	323,231,873

15	JAMII	2,551,608,245	1,837,812,556	2,007,130,870	393,128,791
16	CHAI	2,288,630,479	1,583,416,413	2,001,886,818	334,709,124
17	NDEGE	2,265,307,871	1,431,543,419	1,783,113,083	395,824,934
19	CHUNA	2,010,255,141	1,364,215,289	1,946,930,199	223,734,996
20	ASILI	1,862,205,414	1,321,868,337	1,137,889,826	251,247,775
21	TEMBO	1,403,699,652	976,274,861	1,172,562,157	202,926,941
21	WANANDEGE	1,330,103,320	1,080,963,016	748,472,884	201,643,941
22	NATION	1,262,699,084	1,006,077,139	1,108,444,299	156,834,196
23	WANANCHI	1,158,367,768	678,279,195	743,369,598	226,247,420
24	WANAANGA	1,157,985,221	967,148,865	810,794,136	163,116,420
25	MWITO	1,123,635,627	886,799,179	982,330,443	124,141,885
26	NSSF	1,122,214,663	799,461,462	967,159,731	197,339,638
27	TRANS NATIONAL	993,532,583	598,205,360	510,494,346	159,168,581
28	COMOCO	709,115,524	557,704,320	575,485,464	111,308,004
29	AIRPORTS	550,591,313	444,321,386	435,151,961	93,547,546

Source: Research Data (2017)