THE EFFECT OF FINANCIAL RISKS ON THE RETURN ON INVESTMENTS FOR DEPOSIT TAKING SACCOS IN KENYA

BY:

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DECLARATION

This research project proposal is my original work and has not been presented for approval in any other university.

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DEDICATION

I dedicate this study to my family for their immense support, inspiration and encouragement throughout this project and the entire duration of the course. Thank you for believing in my potential and encouraging me to pursue this study.

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LIST OF ABBREVIATIONS

BOSA	Back Office Service Activity
CIS	Credit Information Sharing
CRB	Credit Reference Bureau
DTSs	Deposit Taking SACCOs
FOSA	Front Office Services Activity
GDP	Gross Domestic Product
ICT	Information Communication Technology
KUSCO	Kenya Union of Savings and Credit Co-operatives
NPLs	Non-Performing Loans
ROA	Return on Assets
ROI	Return on Investments
SACCOs	Savings and Credit Co-operative Societies
SASRA	Sacco Societies Regulatory Authority
SPSS	Statistical Package for Social Science
WOCCU	World Council of Credit Unions

ABSTRACT

The Sacco Societies Regulatory Authority (SASRA) which is a statutory state corporation established under the Sacco Societies Act (Cap 490B) of the Kenyan law was set up and the guiding Regulations 2010 became operational from June 18th in 2010. The regulatory body from then standardized the operations by setting guidelines for operations and regulatory requirement that the DTSs must adhere to for their licenses to operate deposit-taking services to be granted. The study focus was on the period post the regulatory body set up because is the period the DTSs operations were in harmony by being standardized by the guidelines and regulations put in place. Thus analysis of the financial reports was hence possible as the DTSs were subject to the same reporting standards. The objective of the study was to establish the effect of financial risk on the return on investment for DTSs in Kenya. The study sought to bridge the knowledge gap that exists on the area relating to financial risks and return on investment in Deposit Taking SACCOs since previous studies done on DTSs had not focused this particular subject. The study reviewed the studies that have been done on areas around and related to financial risks and return on investment around the world. A brief history of the SACCO sector in Kenya to the emergence of DTSs was discussed to help readers understand the background of the study. The study type conducted was a census focusing on DTSs in Kenya based on industry statistics. Secondary data was used for this study and data was analyzed using Statistical packages for social sciences software- SPSS 2.0. Descriptive data analysis was conducted using linear regression model to analyze data in this study. Financial analysis on the DTSs' performance was carried out. The study focused on four independent variables whose effect on the dependent variable was predicted. The dependent variable in this study was return on investment using the measure of return on assets. The independent variables were financial risks, capital adequacy, management efficiency and asset quality. The results of the data analysis indicates that financial risks has significant effect on the return on investment for DTSs. The study shows that in addition to the financial risks, other determinants of return on investments have significant effect on return on investment which are capital adequacy, management efficiency and asset quality. The study indicated that the variables under study are correlated to one another. Financial risks is strongly presented as an important factor determining the return on investments for DTSs in Kenya. For the DTSs to achieve desired growth and maintain an increasing trend on return on investments, management should be proactive on implementation of financial risks management tactics and adoption of policies that strive to mitigate financial risks to be able to maintain the risks at the minimum levels possible. The expectation is that the findings of this research will assist in filling that knowledge gap and contribute to further research on unexplored aspects of performance and operations of DTSs as well as related financial institutions. The study recommends that SASRA regulatory body should intervene and set limits for the other key financial soundness indicators beyond the capital adequacy ratios which they have already implemented. The other key financial soundness indicators referred to here are asset quality, earnings& profitability and liquidity. Regulatory bodies should implement policies that safe guards use of members savings in DTSs against misuse by the management teams. The study also authorities should set limits of the level of investments in assets that are not explicitly classified into either financial investments or

property plant and equipment which are blankly referred to as other assets should be, this being measured as other assets value expressed as a percentage of total assets value.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Savings and Credit Cooperatives advances loans at lower interest rate than other financial institutions and have the capacity to access potential members in locations that are uncaptured by financial institutions like banks. This has led to Sacco's more gaining more popularity among potential members targeted thus rooting themselves into depths of financial sectors in many countries. As a result of the increased operations of the Sacco and participation in the financial sector, exposure to the financial risks faced by the Sacco has increased over time. These risks greatly exhibits themselves in the form of credit risks and liquidity risks. The implication of these financial risks are experienced through the behavior of return on investment that the Sacco get from the investments they have made.

Deposit taking Sacco Societies (DTSs) is part of the larger SACCO sub-sector in Kenya which comprises the deposit-taking and the non-deposit taking SACCO Societies. The non-deposit taking segment is composed of those Sacco Societies whose operations is restricted to mobilization of deposit (non-withdrawable) for purposes of advancing loans to members. The deposit-taking segment on the other hand is composed of those SACCO Societies who undertake both withdrawable and non-withdrawable deposits.

In Kenya, there were a total of 177 licensed deposit-taking Sacco Societies (DTSs) as at year 2015. At the commencement of year 2015 a total of 181 DTSs were licensed. There were 4 cases of revocation of licenses from operations within year 2015 due to non-compliances issue that had exposed the interest of members' deposits and financial

sustainability of the deposit-taking business to risks exposures (SASRA Sacco Supervision Annual Report, 2015)

1.1.1 Financial Risks

Risk is the possibility of variations in an outcome from the expected. SACCOs in Kenya face operational, compliance, business and financial risks. Financial risk is the risk resulting from a company's choice of how to finance the business using debt or equity. We use solvency ratios to assess a company's financial risk. There are two types of solvency ratios: component percentages and coverage ratios. Component percentages involve comparing the elements in the capital structure while Coverage ratios measure the ability to meet interest and other fixed financing costs. The main financial risks that Sacco's are exposed to are credit risks and liquidity risks.

Sacco's are exposed to higher financial risks than other financial institutions because they operate under pooling arrangements in defined geographic area which minimize their level of risk mitigation. In Kenya prior to establishment of the Ministry of Co-operatives and Marketing, Sacco's were faced by various challenges including mismanagement and leadership wrangles. Other regulatory bodies have been put in place including SASRA and KUSCO. Collectively these regulatory bodies have positively impacted on the way the SACCOs' operations are run by ensuring full compliance to the regulations thus addressing operational and compliance risks. The challenge of the financial risks exposure is still a major issue as the mitigation against the risks has not been successfully attained. There are a number of reasons for this such as the fact that there are diversified causes of the financial risks exposures as well as various determinants of the financial risks. Thus settling on a model that can consolidate all these factors and offer an appropriate tool for mitigation all

at once is yet to be achieved. Thus financial risks management at the moment involves a balancing act whereby there are trade-offs of credit risks mitigation on one end and liquidity risks mitigation on the other end.

The financial risks exposure to the SACCOs can be measured through identification and analysis of the risks determinants. Through investigating the various determinants of the financial risks and understanding their impacts on the performance of the SACCOs we are able to measure the financial risks faced by the SACCOs. This is useful in the designing of risk management processes aimed at mitigating risks.

1.1.2 Return on Investments

ROI is the gain achieved by investor consequential from committing of resources to a given project. A ROI that is high is interpreted that the investment gains matches profitably to the resources committed. ROI is applied in gauging the productivity of a venture as well as in comparing the profitability in various portfolios of investments. It evaluates the returns created in relative to the resources devoted. SACCOs majorly invest their resources in investment options among them being; loans to members, these are the largest in proportion in their investment portfolio, near money assets investments such as cash transmission facilities, monetary reserves such as term-deposits, treasury-bonds and treasury-bills, investments on property like land and constructions, reserves in structured commercial organizations in form of stocks . Recently, credit unions all over the world have observed remarkable increase in assets, shareholding, reserves and other pointers (WOCCU, 2009).

Financial investment in the DTS system is composed of investments in securities, companies and deposits held with other cooperative societies. Majority of the financial

investments constituting 44% are made up of investments in companies. The investment in government securities by DTSs recorded a paltry 10% which shows the lack of interest by DTSs in venturing in the rather low risk government securities area like other financial institutions such as commercial banks or insurance companies. As a precursor towards the establishment of a central liquidity facility for the DTS system, participation of the national payment systems, and the operationalization of inter-borrowing among DTSs, it is imperative that DTSs are sensitized to increase their investments in government securities which are in almost all cases the acceptable statutory collateral for such initiatives as liquidity support from government or the facilitation of an inter-SACCO borrowing framework (SASRA, 2015).

In an atmosphere of low interest rates, a major shortcoming that the Sacco's experience from time to time is the capacity to yield good returns out ot their investments outlay. The incomes generated from the portfolios vary from one SACCO to the other based on several aspects among them being asset mix in terms of resource allocation as well as maturity profile of the assets in the portfolios. The main determinants of return on investments for SACCOs are financial risks, Management efficiency, capital adequacy and asset quality. ROI is measured by the ability of the Sacco to generate income from the investment portfolio it has invested in and expressed using the measure of return on assets as a ratio of Net Income to Total Assets.

1.1.3 Financial Risks and Return on Investment

Financial risks are exposures to a business that may lead to loss of income through investments or loss of assets. Financial risks exposures to SACCO's exhibits themselves in such events as fluctuations in interest rates, non-repayment of loans credited to members.

The return on investment is the ability of the SACCO to generate income from the investment portfolio it has invested in. Savings and Credit Cooperatives advances loans at lower interest rate than other financial institutions. This means that the return is maximized when the turnover of loans is high. When the members default on loan repayment, this limits the capacity of the Sacco to extend loans to other applicants i.e. low turnover of loans, thus lowering the return on investment. In such a scenario the Sacco is exposed to higher financial risks as it faces credit risks because of loan defaults as well as liquidity risks as a result of holding on to non-performing or un-serviced loans. The higher the financial risks exposure the lower the return on investment. There is an inverse relationship between financial risks and return on investment.

The effect of lesser yields is reflected on SACCOs' portfolios of different sizes, the projected decline in annual income is substantial. Consequently SACCOs might strain to pay attractive dividends. SACCOs normally are constrained with bad debts and loan arrears. The SACCOs that invested largely in cash, the continuous descending loan demand as well as the rapid decline in income on investment portfolios could lead to lack of capacity to pay attractive dividends in the future. SACCOS attain the risk spectrum in order to achieve greater portfolio returns. Based on a sample of SACCOs' investment outlays it is estimated that on average about 80-100% of SACCOs' portfolios are assigned to cash deposits. In the event that cash deposits yield the marginal returns defined, SACCOs escalates their portfolio exposure to better yielding asset classes like bonds and shares. This could lead to increase in prices and interest rate risk of portfolios consequently into considerably more unpredictability in annual portfolio performance. SACCOs assess lending terms and increase risk exposure. As a result of the inadequate returns obtainable

from cash-based investment portfolios, lending terms turn out to be compromised which adversely influence loan book value thus exposure to credit risk rises (Kabure, 2014)

A well-planned investment policy statement can increase your chances of success with regards to safety and liquidity. Diversification is the most important factor in reducing risk. A good investment policy will have limitations on issuer, security type, and maturity terms, in order to keep the portfolio diversified; however, the biggest risk that credit unions face is fluctuating interest rates. Rising and falling rates involve risk, but a balanced portfolio can protect against both. One good way to lessen the burden of interest rate risk is to diversify your maturities. If interest rates fall, longer-term investments will pay a nice yield and become more liquid in the portfolio with an increased potential for capital gains. If interest rates rise, you can invest the shorter-term maturities in higher interest rates when they become due. Mixing the portfolio with coupons that may rise, whether because the yield is tied to an index or steps up periodically, protects the overall yield of the portfolio. For an investor to be covered against exposure to interest rates risk they have to diversify their portfolio across assets with diverse maturity terms.

1.1.4 Financial Risks and Return on Investment for DTSs in Kenya

A SACCO is a member owned financial institution with the main objective being is to captivate savings, beyond inculcating a saving culture in its members it grants them affordable credit where deposits act as collateral for credit advanced. Traditionally, Sacco had been offering credit only products for its members based on their non-withdrawals savings. In early 90s commercial banks withdrew their services from rural areas and those that remained proved to be expensive to Sacco members since they prescribed higher minimum account opening balances. This prompted the Sacco's to start offering bank like

services through a facility known as Front Office Services Activity(FOSA), through this they are able to offer broad range of financial services including withdrawal savings, fixed deposit accounts, international money transfer, salary processing on behalf of employer, advances, debit card facilities among others (WOCCU, 2006).

During the year 2015, investments in property and equipment stood at Kshs 22.82 Billion, constituting 6.66% of the total asset portfolio which is a decrease from the 6.92% recorded in 2014. The analysis shows that whereas investment in properties which relates to land and buildings not reserved for own use accounted for 20% of the portfolio, the highest portion of the assets under the portfolio remained property and equipment (including land and buildings reserved for own usage) which accounted for 55% of the portfolio. This is equivalent to 3.7% of the total assets which within the regulatory maximum of not more than 10% prescribed in regulation 48(1) of the Regulations 2010. The Authority is however concerned with the practice by DTSs to classify some a huge portion of their assets amounting to Kshs 4.51 Billion, and constituting about 1.3% of the total assets merely as others. This is because such classification is a recipe for fraud and abuse, particularly through related party transactions and unreconciled assets accounts, and consequently the Authority is taking proactive regulatory measures towards ensuring that such assets are properly identified and classified by the DTSs (SASRA, 2015).

In Kenya DTSs are required to maintain a minimum of fifteen percent (15%) of their saving deposits and short term liabilities in liquid assets; and thus the liquidity of the DTSs which is calculated as a ratio of liquid assets to saving deposits plus short term liabilities. There was an improvement in the overall liquidity of the DTSs with a marked increase from 47.32% in 2014 to 55.99% registered in 2015 against the prescribed minimum of 15%.

However, it is observable that despite the impressive liquidity measurement being registered in successive years over and above the prescribed minimum, many DTSs are often unable to meet their short term obligations to their members, particularly the disbursement of loans. This irony is occasioned by the fact that the bulk of liquidity pressures in DTSs are normally occasioned by demand for loans, which once a member is qualified is deemed a right, unlike in the banking sector. This irony calls for a review of the prevailing regulatory definition of liquidity ratio provided in regulation 15 of the Regulations 2010 and the Authority shall be engaging the stakeholder to find a practical and realistic regulatory definition that reflects the liquidity reality of deposit taking Sacco businesses.

The non-performing loans increased from 4.7% recorded in 2013 to 5.74%. This deterioration in loan performance was mainly experienced in the agriculture-based DTSs and attributed to reduced tea bonus payments, adverse weather conditions and general crop failure. On the supervision frontier, the Authority has been implementing a Risk Based Supervision model using the CAMEL-rating framework, which aims to identify risks associated with the deposit-taking business at an early opportunity, and forestalls the same through appropriate supervisory interventions. The Authority continued to use off-site surveillance, and on-site inspections to monitor the daily activities of DTSs. A total of 17 on-site inspections of DTSs were conducted and appropriate corrective supervisory administrative enforcement actions and directives were issued. In addition, all the DTSs were able to submit the prescribed statutory returns which are the core instruments for off-site surveillance. With the lapse of the transition period now behind, the Authority's main focus is to ensure that the legal and regulatory gains made over the past four and half years

are not lost; that the financial stability of the sub-sector is not threatened and public confidence restored in DTSs as alternative channels of financial intermediation. Various regulatory policies are being explored in consultation with stakeholders including but not limited to operationalizing the Deposit Guarantee Fund, establishment of a central liquidity fund for DTSs, institutionalization of the usage of Information Communication Technology (ICT) as a means of filing regulatory returns, and the expansion of the credit information sharing platform to incorporate full file sharing with other financial sector credit players such as banks and utility firms. The momentum for prudential regulation of DTSs has continued to realize its intended objectives as evidenced by the growth in key performance indicators, general stability in the sector and increased confidence by the public in joining and patronizing DTSs financial services. This momentum can be increased further through the adoption and implementation of progressive legal and policy reforms, (SASRA Sacco Annual Supervision Report, 2014)

According to WOCCU Global Regulatory Update, January 2016, Issue 19, Kenyan law requires all deposit-taking Savings and Credit Cooperative Organizations (SACCOs) to maintain a minimum liquidity ratio of 15% relative to total assets. However, many SACCOs have challenges meeting this ratio and are normally forced to borrow from commercial banks to meet their financial obligations. The existing credit facilities have exorbitant rates and the end result is high borrowing costs for SACCO members because their SACCO's high cost of funds is passed on to them. The situation is worsened by lack of suitable alternative credit lines for deposit-taking SACCOs and the fact that there is currently no central liquidity facility for SACCOs in Kenya. The Sacco Societies Regulatory Authority (SASRA) is exploring the establishment of a central liquidity facility

as a means to address this liquidity challenge on a sustainable basis. SASRA anticipates that the central liquidity facility will enhance monitoring of the SACCO system, facilitate the pooling of liquidity for deposit-taking SACCOs, and facilitate efficient access to funds in the event of temporary liquidity constraints (WOCCU, 2016)

1.2 Research Problem

Despite the contribution of SACCOs to Kenyan Economy, they encounter challenges with risks such as lack of integrity, financial risk and Operational risks hindering their performance in financial markets. Most SACCOs target members from formal industries, such that in times of financial distress the operations of the SACCOs may be disrupted where shareholders incomes are disturbed by fluctuations in the economy. This may cause a decline in members' savings capacity and an enlarged demand for credits. Risk acceptance depends on the situation and environment in which an institution operates this result into either benefits or problems. In response to continued failure to manage financial risks, organizations are investing in more sophisticated and qualitative financial risk management solutions. It is important to identify financial risk determinants and measure their effects in the firms' operations and return on investment. This will create awareness of associated risks and assist in choosing of management techniques that will limit and avoid financial risks in SACCOs' portfolios.

DTSs hold a wide range of financial instruments including money markets assets, bonds, equities and financial derivatives, the financial risks associated with these securities are retained while others are passed on hence continuous identification of systems to mitigate financial risks is important. Risk managers are entrusted to eliminate and minimize the impact of the risks in their institution, however in doing so they are faced by numerous

challenges that affects the ROI of these institutions. Maina, (2007) identifies mismanagement and governance issues, staff competencies, lack of goodwill from the stakeholders, weak regulatory framework as some of the challenges faced by DTSs. A lot of quantitative factors have a bearing on the performance of Kenyan DTSs. Factors such as size of loan, membership level, product portfolio, and capital structure, among others have been affecting the ROI of Sacco's WOCCU, (2006) .The emergence of the SASRA regulations for DTSs in 2010 changed the dynamics in the SACCO industry. The DTSs are now faced with increased operational costs as they are now embarking on meeting the requirements of these regulations. Money which would have previously been invested has been used in coming up with banking halls, adequate office space, management information systems as well as meeting capital adequacy ratios. DTSs are now required to be more innovative, flexible and efficient to meet the new regulatory requirements as well as to survive. A regulatory impact assessment is thus required to establish how these regulations have impacted the DTSs' risk management and their returns on investments, essentially to measure their effectiveness and areas of improvement.

Odeh, (2014), carried out a study on the effects of the financial leverage on the profitability in the tourism companies in Jordan. The study findings were that there was existence of a statistically significant impact for the financial leverage on the profitability of the tourism companies listed in the Amman Exchange. AL-Qudah (2013), carried out a study on the effects of financial leverage& systematic risks on stock returns for firms in the industrial sector in the Amman Stock Exchange. The results of the study showed that there is a statistically significant impact of financial leverage and systematic risks on the annual stocks returns.

Studies done in Kenya around this topic have focused on SASRA regulations and their impact on the risk management, financial performance, governance and operations of SACCOs. No scholar has yet studied the effect of financial risks on the investments returns of SACCOS in Kenya. Financial risks exposure is considered a key aspect in the performance of a Sacco. This study is therefore done to fill the existing knowledge gap in this area and to make policy recommendations based on the findings relevant to the Sacco industry. Ngaira,(2011) carried out a study on the impact of Sacco Regulatory Authority (SASRA) guidelines on Sacco operations in Kenya. She concluded that SASRA has greatly impacted on Sacco performance in terms of outreach, sustainability, general efficiency and performance of SACCOs. Most SACCOs were said to be complying with the regulator so as not to be locked out of business. Kioko,(2012) studied the impact of SASRA regulations on the financial performance of SACCOs' in Kenya. He concluded that higher capital requirements and increase in management efficiency impacted positively to Sacco's profitability in the post regulation period. Further, he concluded that capital regulation affects financial performance in SACCOs and that financial stability could be at risk as a result of shocks impinging on the economic system and absence of proper policy adjustments to mitigate the effects of these shocks. This study is focusing on the effect of financial risks on the return on investments of DTSs within Nairobi as the area under scope. This study therefore targeted to answer the following question; what was the effect of financial risks on the return on investments of DTSs in Kenya?

1.3 Research Objectives

The study sought to determine the effect of financial risks on the return on investment for DTSs in Kenya.

1.4 Value of the study

Facts picked up out of this research work are valuable to regulators in the government through the Ministry of Co-operatives and also to the regulatory bodies including Sacco Societies Regulatory Authority (SASRA), KUSCO mainly in reinforcing policy deliberations DTSs SACCOs' sub-sector. The guiding principles enhancement are important in improving the guiding principles on how to better profitability and significance of SACCOs in an determination to improve their productivity to advantage of the shareholders and influence the economy positively.

Findings from the study will help in enlightening the key decision makers in the different Sacco's management boards in particular on the effect of financial risks as well as the other determinants of investments on the R.O.I for DTSs. This knowledge will be useful in management decision making as well as formulation of key policies for the DTSs they lead. Such policies touches on areas like good financial management policies and risk management policies.

The study will in addition to the above, be useful to stakeholders, financiers, and investors in formulating and planning areas of intervention and support. The awareness on utilization of funds and the impact they have on enhancement of SACCOs' wealth is beneficial for safeguarding sensible outlays and competence in the administration of the shareholders' wealth. Consequently it will increase effectiveness in financial management of SACCOs' monies which will result to shareholders' fulfillment hence trustworthiness in the SACCOs inculcating a saving culture. This will mobilize growth in saving i.e. shares contribution. Ultimately, SACCOs will manage to easily realize their objectives and targets as outlines in there working manuals.

The findings of this research will essentially be beneficial in offering further knowledge to current and upcoming institutions on effect of financial risks on the investments of SACCOS in Kenya. This will expand their knowledge on effect of financial risks on the investments of SACCOS and also identify areas of further study. The study will be a good source of reference material for future researchers and academicians on other related topics as well as those who undertake the same topic in their studies. The study will also highlight other important relationships that require further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature related to objectives of the study. It underscores relevant studies conducted concerning financial risks facing Savings and Credit Co-operatives Societies. It outlines the studies on risks, types of risks, classification and theories on risk measurements with consideration to financial risk models. It also focuses on the determinants of return on investments in SACCOs. A review of empirical studies is undertaken reviewing the variables under study in this research. In summary it exhibits how the literature relates to these variables.

2.2 Review of Theories

The following theories are relevant in our study and they include: Sharpe's (1963) Capital Asset Pricing Model (CAPM), Markowitz's (1959) Portfolio Theory (PT), Hamada's (1972) Theory on Risk and Leverage (RL), Liquidity premium theory and Shift-ability Theory.

2.2.1 Theories on Risk and Returns

The study is conducted around these theories on the relationship between risk and return: Sharpe's (1963) Capital Asset Pricing Model (CAPM), Markowitz's (1959) Portfolio Theory (PT) and Hamada's (1972) Theory on Risk and Leverage (RL).

The CAPM suggests that price or expected return of an asset is related to its risk free rate, the systematic risk and the expected risky market's risk-premium.

Expected Return=Risk free rate +Beta of individual asset (Market Rate of Return-Risk Free Rate of Return).

Applied to a portfolio of credit loans, SACCOs maintain combination of loan with varying risk levels. The Credit portfolio to be maintain to ensure overall risk of loans is diversified given that correlation coefficient closer to 0and not 1 as suggested by Markowitz for diversifying individual asset(loan).

CAPM proposes that required rate of return for SACCOs is equivalent to risk free rate with same terms as loan plus a premium as determined by the market forces. A Sacco will price its loan according to level of risk perceived. Where higher risk is perceived, loan will attract higher price and vice versa. SACCOs are concerned with their loan-pricing decisions including market risk and price of the risk;

Price of Risk = unit of risk * risk premium.

This indicates that SACCOs have to incorporate in their loan price other related costs i.e. tax and bankruptcy from overindulgence in excessive risk taking lending activities.

Hamada's (1972) Theory on Risk and Leverage is used to separate the financial risk of a levered firm from its business risk. The equation combines the Modigliani-Miller theorem with the capital asset pricing model. It is used to help determine the levered **β** and, through this, the optimal capital structure of firms. Hamada's equation relates the beta of a levered firm (a firm financed by both debt and equity) to that of its unlevered. According to this theory the βeta for the levered firm is higher that the βeta for the unlevered firm. Where SACCOs would engage in taking loans to finance their operations they are considered as levered. Risk increases with increase in debt to equity ratio. Accordingly where a higher risk is perceived the SACCOs are supposed to set higher interest rates to match with the

expected rate of return which is expected to be higher when the β is higher, Sharpe's (1963) Capital Asset Pricing Model (CAPM).

2.2.2 Liquidity Premium Theory

Some investors may prefer to own shorter rather than longer term securities because a shorter maturity represents greater liquidity. In such case they will be willing to hold long-term securities only if compensated with a premium for the lower degree of liquidity. Though long-term securities may be liquidated prior to maturity, their prices are more sensitive to interest rate movements. Short-term securities are usually considered to be more liquid because they are more likely to be converted to cash without a loss in value. Thus there is a liquidity premium for less liquid securities which changes over time. Sufficient liquidity empowers a financial institution to meet several threats. To begin with is the threat in form of exposure to finance risk, capacity to substitute net disbursements via pulling out of individual depositors or nonrenewal of comprehensive financial reserves. Sufficient liquidity is essential to allow the financial institutions to off-set effects of non-receipt of inflow of funds where the debtor default to meet their obligations, this under credit risks. Liquidity enables the financial institution to honour maturing debts as well as to respond to calls of sudden demands for monies by significant clients. Ample liquidity facilitates the financial institution to obtain new funds to honour emerging responsibilities like unforeseen rise in demand for loans for arranged credit lines as well as to manage to adopt to emerging loaning terms where desired, for example appeal of a greatly treasured client. Sufficient liquidity is required to escape involuntary disposal of asset at unappealing market circumstances consequently at a substantial declined value. Sufficient liquidity serves as a means to cost-effectiveness hence retain assurance to shareholders in meeting

short-term obligations. Lastly, sufficient liquidity guards against Unplanned sourcing of funds from regulatory bodies in instances of severe liquidity shortfalls, whereby the financial institution is positioned to dependency on Central Bank, henceforth the direction of its future could be taken over. Being sufficiently liquid to honour due obligations ordinarily at prevailing interest rates is essential for all financial institutions, both large and small. Liquidity risk moderation is vital to excellence of institutions functioning in financial sector. DTSs having borrowed from banking operations are subject to liquidity risk as it has implications to their ROI and hence the relevance of Liquidity Premium Theory to this study.

2.2.3 Shift-ability Theory

Shift-ability theory advances that liquidity is sustained if an institution possess assets which are transferable or can be traded to potential investors in exchange for money. The view on this proposes that a bank's liquidity is boosted when it possess assets that are saleable and as long as the Central Bank as well as the money market remains prepared for acquisition of assets that are accessible at a price cut. Therefore this theory suggests that shift-ability, marketability and transferability of financial institutions' assets are foundation in guaranteeing liquidity. The theory proposes that easily marketable assets possessed by financial institutions are a good source of liquidity. Dodds (1982) proposes that a guarantee to instant transferability without decline in value, an asset ought to possess the above qualities. Liability Management Theory by Dodds (1982) comprises of the undertakings engaged in to obtain finances from shareholders as well as from lenders and establishing a suitable combination of financing sources for a particular financial institution. This proposition suggests that liability management should try to find answers to questions such

as: What are the means of accessing finances from investors? What are the means of accessing finances from lenders? How to establish suitable combination of financing sources for specific financial institutions? Board of management should evaluate the undertakings engaged in to complement the liquidity requirements of the financial institutions through borrowing avenues. The liquidity management theory analyses the liabilities side of the financial institution's statement of financial position. The proposition is that additional liquidity can be realized via the liabilities of the financial institution. Nwankwo (1991), proposition is that since financial institutions can obtain finances as they might require they require, it is not necessary to amass liquidity on the assets' section of their statement of financial position. Liquidity theory has been under review by various authors. The underlying conclusion is that through the durations of distress, financial institutions could experience difficulties in acquiring preferred liquidity because the assurance on the market might be greatly influenced hence the credit worthiness may have declined. Despite this fact, for a strong financial institution, the liabilities, deposits, market funds and other creditors make up a substantial source of liquidity (Kabure, 2014). The management of DTSs considers the portfolio of their investments that would yield the highest return giving the best ROI possible with the available investible resources, thus the relevance of application of the Shift-ability Theory to this study.

2.3 Determinants of Return on Investments

2.3.1 Financial Risks

According to WOCCU (2009), there are three key determinants of investment avenues by SACCOs namely; Safety, Liquidity and Yield. Safety means the ability to get back the full principal investment as well as interest earned over the investment period. This is

guaranteed by the presence of regulations on investments to reduce the high risk involved. Other investment risks that SACCOs face include: Market risk which denotes the possibility of a reduction in value or cash flows from an investment due to changes in market prices. This can be due to a reduction in currency value, interest rates or other price determinants; Interest rate or maturity risk, which denotes the possibility of a reduction in the value of investments resulting from an increase in market interest rates. SACCOs like other financial institutions therefore need to ensure that they match their sources of funds to the terms of their investments; Credit risk, which is the risk that a party to a financial transaction may default in his obligation to the other party thus causing him financial loss. In SACCOs, credit risk is significant in their lending since a borrower may default in their loan repayment. This risk is best controlled by putting in place adequate lending policies and procedures to ensure information about a borrower's ability and willingness to honour their loan obligations is established before a loan is disbursed to them. Adequate investing policies should also be established detailing how the Sacco will mitigate the credit risk associated with its other investments and ensure the same are followed to the letter. Sacco management should look out for red flags which may increase its credit risk thus affecting its investments such as decline in the financial condition of parent organization which may lead to layoffs of Sacco members, unfavourable economic environment and skewed loan portfolio concentration in one particular sector; Price-level risk which refers to the possibility of a reduction in the purchasing power of the unit of currency as a result of adverse economic conditions such as inflation.

SACCO's could moderate their exposure to uncertain outcomes from their investments through full evaluation of specific investments options prior to committing resources on

them, as well as scrutiny of issuer, evaluating the financial status as well as character of the parties to be involved the transaction, for example the middlemen as well as differentiating the investment portfolio by nature, maturity, physical state and locality as well as collateral. Investment policy must be flexible enough to allow for changes in the balance sheet items that represent member needs of savings and loans. Investments can therefore be considered a function of savings (sources of funds) and loan behavior (uses of funds). A shift in savings or loan behavior requires a shift in the investment strategy to ensure the Sacco is still able to meet its obligations to members. For example, if a Sacco starts offering long term loans without a drive to increase the savings contributions, it will be faced with a lack of funds to service new loans over time since the turnover of funds will be slow. The SACCOs will therefore need to shorten its investment maturities to meet its loan demand.

Liquidity is also affected by the movement in interest rates. Increasing interest rates lead to a decrease in the value of long term securities. A Sacco with long term securities would therefore be faced with a liquidity crisis unless it has other means of absorbing the losses incurred. Only after liquidity and safety are considered should investment analysis center on yield. The higher the investment risk and price volatility, the higher the expected yield. SACCOs must therefore consider the risks of reduced liquidity and potential loss against the higher expected income potential. SACCOs should invest most of their funds in loans which is their core mandate but they also need to diversify to other investment avenues to spread their credit risk. Such avenues must however give more returns or equal the market rates of return.

2.3.2 Management Efficiency

Financial management efficiency for the SACCOs encompasses choices on how the SACCOs operations will be funded (sources of funds), how the funds are utilized (investment decisions) with the underlying target of realizing the SACCO mission and goals. Management efficiency centers on improvement of approaches to pragmatically administer the monetary assets of the SACCOs as well as utilizing tactics and practices of financial planning to accomplish its organizational goals. Similar to other microfinance institutions, the managers and board of the SACCOs have a fiduciary duty to wisely administer the financial resources of the SACCO. As part of this accountability, the directors are legally mandated to prepare and present financial reports that demonstrates the financial performance and position of the SACCO periodically (Jansson& Mark, 1997). According to Jansson and Mark, (1997) the figures and facts obtained from the financial reports is then subjected in evaluating the stewardship of the board and management and to what magnitude the financial goals have been attained. Financial management efficiency results to optimization of capital growth, achieving financial sufficiency, wisely administration of the assets and liabilities of the SACCO. To extract meaningful financial statements that relays the SACCOs vision, mission, objectives and plans, and evaluate the extent to which they have been realized, finance professionals have established a number of tools and techniques collectively referred to as Financial Analysis which together assists in assessing financial management efficiency. Financial ratio analysis is used to broadly assess the financial management efficiency.

2.3.3 Capital Adequacy

Capital provides a cushion to fluctuations in earnings so that firms can continue to operate in periods of loss or negligible earnings. It also provides a measure of reassurance to the members that the organization will continue to provide financial services. Likewise, capital serves to support growth as a free source of funds and provides protection against insolvency. While meeting statutory capital requirements is a key factor in determining capital adequacy, the firms operations and risk position may warrant additional capital beyond the statutory requirements. Maintaining an adequate level of capital is a critical element. Firms that are less than "adequately capitalized" must operate under an approved net worth restoration plan. Examiners evaluate capital adequacy by assessing progress toward goals set forth in the plan. Capital adequacy guarantees a cushion to fluctuations in earnings so that firms can continue to operate in periods of loss or negligible earnings thus financial stability during economic downturns.

According to SASRA SACCO Supervision regulatory framework set in 2010, the requirement is that DTSs should maintain a minimum core capital of KES 10million with the following capital adequacy ratio: core capital to total assets at 10%, core capital to deposit liabilities at 8% and institutional capital to total assets at 8%. There has been an improvement on these capital adequacy ratio across the period from year 2011 to year 2015. However, it was noted that realization of full compliance with the capital adequacy requirements for some DTSs remained unachieved, with institutional capital to total assets ratio being the most non-complied with. DTSs have therefore adopted various strategies to ensure the attainment of the requirements including mobilization of increased share purchase from the members, recruitment of new members and retention of surpluses.

Muraguri (2014), carried out a research on the effect of liquidity on the return on investments for SACCOs in Nairobi. He focused on capital adequacy as one of the determinants of return on investment for SACCOs. His findings were that capital adequacy was inversely related to return on investments for SACCOs operating below the regulatory requirement of a minimum of 10%. This is because at that level when SACCOs increase their capital base, the increase is funded by retained earnings and deductions from the deposits held which reduces the borrowing power of the members as well as the amount of funds available for lending. However, beyond attainment of the minimum requirement there is no limitations on the lending power thus the effect of change in capital adequacy is expected to have a positive relationship to return on investment.

2.3.4 Asset Quality

The core business of SACCOs is issuing to loans members, the incomes of the SACCOs being pegged to the interest made from the credit extended to the members will greatly depend on the quality of the loan. The quality of the loan is measured by how the loan performs. Loan performance depends on factors like default cases and generally on the economic conditions in the country that influences the prevailing interest rates. SACCOs classify their loan assets into various classes depending on the loan performance.

According to SASRA SACCO Supervision Annual Report (2014), loans and credit advances constituted above 75.8% of total assets in DTSs, thus being viewed as the dominating asset in the balance sheet, however in the ranking according to the riskiness it is rated the highest. Loans and credit advances issued during the year increased by 15.8 percent underlining functions served by DTSs in extending of loan facilities to their members. While the issuance of loans increased over the year, their risk level as measured

by level of un-serviced loans deteriorated from 4.72% to 5.73% in 2014. This indicates an escalation in credit risk levels due to deterioration in performance of loans, and was substantially contributed to by the agricultural sector-based DTSs, attributed to reduced tea bonus payout, adverse weather conditions and general crop failure. Therefore the level of asset quality of the loans issued by DTSs has an effect on the income expected to be generated from the loans as interest oncomes and consequently on the return on investment.

2.4 Empirical Studies Review

Financial risk exposure is the probability that a venture will not possess sufficient liquidity to settle its maturing financial commitments. Financial obligations comprises of debt settlement, personnel payments, dividend disbursements, regulatory requirements including taxes, licenses and permits.

It can also be defined as an uncertain adverse outcome likely to be caused by event or a loss that could impair the value of members savings and affect assets, hence its delivery and earning capacity (Maina, 2007).He further identifies financial risks facing Savings and Co-operatives as Interest rate Risk, Credit Risks, Exchange Risks and Liquidity Risk. Underlying problem in Sacco's could be large loan losses, a major fraud or theft that become known to general public and raise doubts about the solidity of the institution. Financial risk is essentially synonymous with market confidence, as long as members, savers and public are confident that SACCO can meet all obligations, the liquidity will never be challenged

The financial risk facing SACCOs can be viewed from inability of the SACCO to meet member's loan demands and inability of members to repay their loans. The risk of losses

arise from inadequate financial controls which exposes Sacco's business to fraud and unauthorized financial spending.

Financial risk facing Sacco's can be broadly classified into market and credit risks. Market risk is further decomposed into interest rate risks, foreign exchange risks, equity risks and liquidity risk while credit risks include transaction risks and portfolio risks. Since Sacco's generally do not hold trading positions in equity securities, market risks related to positions in foreign currency and derivatives are equally not relevant as Sacco's are not permitted to and prudently should not engage in such transaction

From Enterprise Risk Management survey report 2012 by Deloitte, the respondents covered major traditional risk categories indicating Credit risk at 92%, liquidity risks 90%, regulatory risk/compliance risk 90% and market risk 85%.

Odeh (2014), carried out a study on the effects of the financial leverage on the profitability in the tourism companies in Jordan. The study findings were that there was existence of a statistically significant impact for the financial leverage on the profitability of the tourism companies listed in the Amman Exchange.

AL-Qudah (2013), carried out a study on the effects of financial leverage& systematic risks on stock returns for firms in the industrial sector in the Amman Stock Exchange. The results of the study showed that there is a statistically significant impact of financial leverage and systematic risks on the annual stocks returns.

Alberto et al, 2005 carried out a study on regulation and investment in the OECD countries. They provided evidence that regulatory reforms of product markets are associated with an increase in investment. They used the rate of GDP growth as their comparative factor and compared the average GDP of the United States in the late 1990s of 4.3% to that of large

continental European economies (Germany, Italy and France) which had an average growth of 2%. They explained that the stricter regulation of markets in the European countries prevented faster growth in that period of rapid technological advances. They concluded that various measures of product market regulation are negatively related to investment which is an important engine of growth.

Kassa (2010) carried out a study on the regulation and supervision of microfinance business in Ethiopia where he found that the regulation and supervision of MFIs in Ethiopia had brought many benefits. These were such as creating an enabling environment for establishment of specialized formal financial institutions that provided financial services to the country's population previously considered not bankable, enabling MFIs to offer a wide range of products and promoting standardization and transparency in the sector. He also found that the regulatory and supervisory framework also had its own constraints and challenges.

Jansson et al, (1997) studied financial regulation and its significance for microfinance in Latin America and the Caribbean. They focused on those regulations which while appropriate for most financial institutions, were likely to have negative differential impact on microfinance institutions. Their study identified a number of areas where such differential biases existed.

Such as capital adequacy requirements, provisioning, documentation and restrictions on the operations of financial entities.

Bwoma (2003) carried out a study on the effect of liberalization on the investment practice of reserve funds and payment of dividends in savings and credit co-operatives in Nairobi. He found that the reserve funds mean growth rate increased from 12.66% to 19.85% in pre

and post liberalization respectively. Dividend payment rate increased from a mean of 4.12% to 5.12% in pre and post-liberalization respectively. He concluded that liberalization of the competitive sector has a positive effect on the dividend distribution and reserve funds with 60% of the SACCOs shifting to new areas of investment after liberalization.

Kimata (2013) studied the effects of financial innovation on the financial performance of SACCOs in Nairobi where she found that SACCOs were now embracing new products based on information technology such as internet banking and money transfer services but were yet to link the money transfer services to their back office systems.

Muriuki and Ragui (2013) studied the impact of Sacco Regulation on Corporate Governance of SACCOs. They found that the regulations had to a great extent positively impacted the Sacco management components and corporate governance. They however noted that there was need to implement fully the provisions of these regulations otherwise the SACCOs would continue being faced with mismanagement, poor corporate governance and ethics as well as lack of accountability by both the management and boards.

Okundi (2011) carried out a study on the financial challenges facing SACCOs in Nairobi where he concluded that SACCOs suffered challenges in meeting loan requests by the members partly due to long term investments they engage in. Members therefore preferred loans from commercial banks partly due to the speed in which they were disbursed and the fact that the loan is not pegged on savings as is the case with SACCOs.

2.5 Summary of Literature Review

This chapter looks at the theories relevant to our study. The theories on risk and return on investment addressed are; CAPM, Portfolio Theory, Theory on Risk and Leverage, Liquidity Premium Theory and Shiftability Theory. It reveals that though long-term

securities may be liquidated prior to maturity, their prices are more sensitive to interest rate movements. Short-term securities are usually considered to be more liquid because they are more likely to be converted to cash without a loss in value. Shift-ability theory advances that liquidity is sustained if an institution possess assets which are transferable or can be traded to potential investors in exchange for money. The determinants of Investments in SACCOs include Capital Adequacy, Capital that provides a cushion to fluctuations in earnings so that firms can continue to operate in periods of loss or negligible earnings. There are three key determinants of investment avenues by SACCOs namely; Safety, Liquidity and Yield. Safety means the ability to get back the full principal investment as well as interest earned over the investment period. Financial management efficiency in SACCOs entails choices on how the SACCOs operations are to be funded and how the allocated funds are utilized. Management efficiency thus concentrates on the establishment of policies to wisely manage the financial assets of the SACCOs as well as using tactics and practices of financial planning to attain the organizational goals.

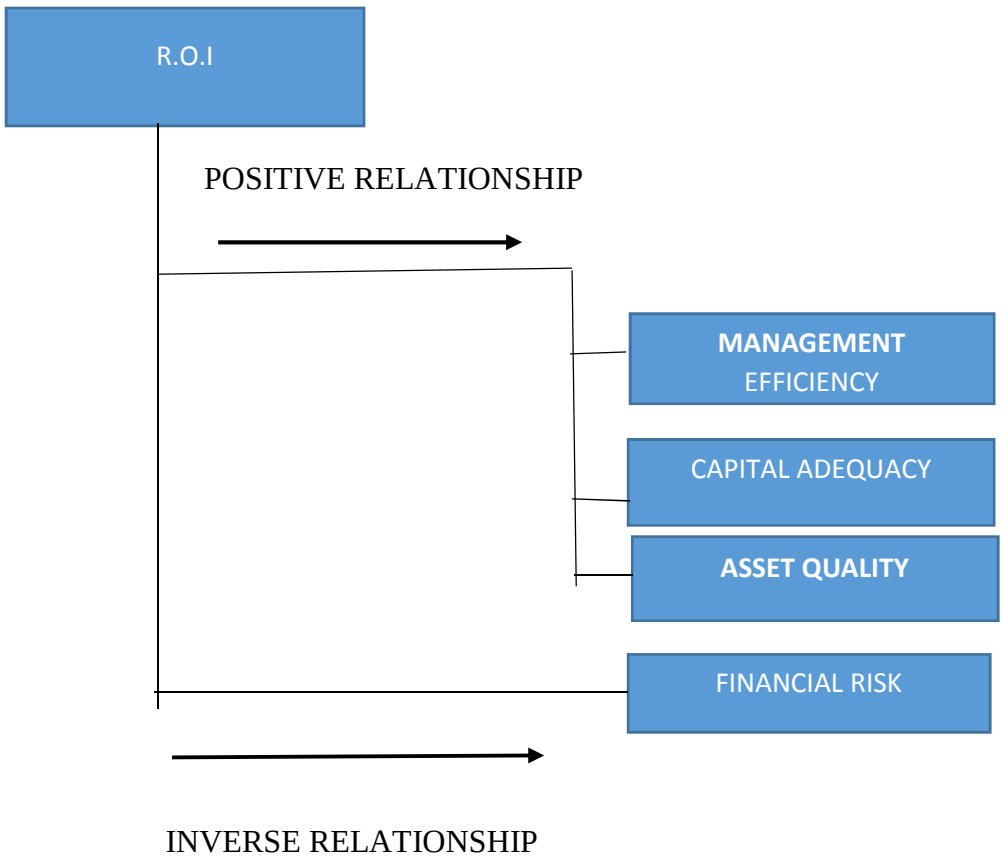
Inferences from the empirical reviews done in this study indicates that there is existence of a statistically significant impact for the financial leverage on profitability. There is a statistically significant impact of financial leverage and systematic risks on the annual stocks returns. Regulatory reforms of product markets are associated with an increase in investment. Stricter regulation of markets prevents faster growth in periods of rapid technological advances. Various measures of product market regulation are negatively related to investment which is an important engine of growth. Regulation and supervision of MFIs in Ethiopia had brought many benefits. These were such as creating an enabling environment for establishment of specialized formal financial institutions that provided

financial services to the country's population previously considered not bankable, enabling MFIs to offer a wide range of products and promoting standardization and transparency in the sector. However regulatory and supervisory framework has its own constraints and challenges. They are those regulations which while appropriate for most financial institutions, are likely to have negative differential impact on microfinance institutions. A number of areas where such differential biases existed are capital adequacy requirements, provisioning, documentation and restrictions on the operations of financial entities. Liberalization of the competitive sector has a positive effect on the dividend distribution and reserve funds with 60% of the SACCOs shifting to new areas of investment after liberalization. SACCOs embrace new products based on information technology such as internet banking and money transfer services. Regulations positively impact the Sacco management components and corporate governance. However, there was need to implement fully the provisions of these regulations otherwise the SACCOs would continue being faced with mismanagement, poor corporate governance and ethics as well as lack of accountability by both the management and boards. SACCOs suffer from the challenges of meeting loan requests by the members partly due to long term investments they engage in.

Therefore the gap that this study seeks to establish is the underlying relationship between the financial risks faced by SACCOs and the return on investment attained by the SACCOs considering that SACCOs' investment options are limited in the regulations governing their operations

2.6 Conceptual Model

The return on investment is a function of financial risks, management efficiency, capital adequacy and asset quality. There is an inverse relationship between ROI and financial risks. There is a positive correlation between ROI and management efficiency. There is a positive correlation between ROI and capital adequacy. There is a positive correlation between ROI and asset quality.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out the research methodology, research design, and population used for the study, sampling techniques and data analysis techniques and tools that were used to assist in data analysis and answering the research questions.

3.2 Research Design

The study used a descriptive study design. Descriptive studies are aimed at finding out "what is," so observational and survey methods are frequently used to collect descriptive data (Borg & Gall, 1989). Descriptive studies report summary data such as measures of central tendency including the mean, median, mode, deviance from the mean, variation, percentage, and correlation between variables. According to Borg and Gall, (1989), survey research commonly includes type of measurement, but often goes beyond the descriptive statistics in order to draw inferences. Descriptive survey designs are used in preliminary and exploratory research types to enable researchers collect data, analyze in summary format, present and interpret with the aim of obtaining clarity. Descriptive survey design was employed in this study as it guaranteed broad information and accurate descriptive analysis of characteristics of population used to make inferences about population.

3.3 Population

The target population refers to a group of individuals, objects or items from which samples are taken for measurement (Mugenda and Mugenda, 2003). For this study the target population comprised of all licensed deposit-taking SACCOs in Kenya. The SACCOs

whose investments were focused on in this study fall under SASRA regulations and there were 176 licensed DTSs as at 2015 who had submitted their audited financial reports for year 2015 by the 31st March, 2016 deadline (SASRA SACCOs Annual Supervision Report 2015). The DTSs in Kenya are classified into different segments based on the sectors of their target members.

3.4 Sample

This research was a census focusing on the licensed DTSs in Kenya. The population comprised of 176 DTSs as the listed on The SASRA Annual Supervisory report, (2015) cutting across all the five clusters. Since the industry is at its early stages post regulatory body was put in place in 2010, the numbers of the DTSs who were compliant and issued with operating licenses has been inconsistent from one year to the other across the period between year 2011 to year 2015 under focus. Hence the study focused on the comprehensive operations and performance of the DTSs based on the industry statistics.

3.5 Data Collection

This research used secondary data. The sources of these secondary data were; SASRA's published consolidated and comprehensive annual reports of DTSs' audited financial statements, regulatory filings, and published regulatory reports over a five years reporting period between 2011 and 2015. This data collection technique was the most appropriate for this specific study since these published figures are audited by registered and licensed auditors and can therefore be easily authenticated through filings with the regulatory authorities. The same data has been useful in other related studies and the research findings confirmed the relevance and validity of these sources of data. Data collected for ROI was be Total Assets and Net Surplus before Tax. For financial risks, data that relates to financial

soundness was collected including performance of loans measured by Non-Performing Loans, total gross loans and total deposits.

3.6 Data Analysis

Data collected was analyzed using Descriptive Statistics Analysis and Financial Analysis.

3.6.1 Descriptive Statistics Analysis

The data analysis and testing was done using IBM SPSS Statistic 20 software package which was equipped with analysis and reporting tools to produce the output that was required in a concise and reliable manner. Tests that were performed included statistical testing (T-test) and Correlational analysis applying the Linear Regression Model.

The study used measures for financial risks, capital adequacy, management efficiency and asset quality to form the independent variables (Xs) while the Sacco investments performance measured by the return on investments (measured by Net income/ Cost of Investments) formed the dependent variable (Y).

The study employed a regression model to determine the relationship between the variables as follows;

$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + e$

Where; Y = Return on Investments (Using the measure of return on assets as a ratio of Net income to total assets)

α= constant term

X1= 1/ (Ratio of Net loans/ Net Deposits) (Financial Risks, as a reciprocal of liquidity ratio)

X2 = Ratio of Capital to Total Deposits Liabilities (Capital Adequacy Ratio, regulatory minimum requirement is 10%)

X3 = Ratio of Earning Assets to Total Assets (Management Efficiency)

X4 = Ratio of NPLs to Total Gross Loans (Asset Quality)

β(1-4) = regression coefficients (change in Y as a result of change in X)

e= error term (to cater for residual or nuisance variables)

Tests of significance were conducted on the variables. The test hypothesis was formulated around the research question which is; - If financial risks have effect on the return on investments?

The null hypothesis tested was that financial risks have no effect on return on investments while the alternative hypothesis was that financial risks have effect on return on investments. They were stated as follows;

The null hypothesis; financial risks have no effect on return on investments.

H0: $\beta i = 0$

The alternative hypothesis; financial risks have effect on return on investments.

H1: $\beta i \neq 0$

The hypothesis was tested at 95% confidence intervals.

3.6.2 Financial Analysis

Financial analysis is a process of selecting, evaluating, and interpreting financial data, along with other pertinent information, in order to formulate an assessment of a company's present and future financial condition and performance. The selected approaches used to carryout financial analysis included; -Common- Size Analysis, Comparative Analysis, Trend Analysis and Financial Ratios Analysis.

Common- Size Analysis, is the restatement of financial statement information in a standardized form, both horizontal (using 2011 as the base year) and vertical (using assets base as the base).

Comparative analysis will be carried cross the five years period running from 2011 to 2015. This analysis involved Comprehensive Balance-Sheet Statement Analysis, Comprehensive Income Statement Analysis and Comparative Risk Analysis based on various loan classes' performance.

Trend analysis was carried out on key parameters that form key performance indicators in SACCOs namely assets, loans and advances, membership, savings deposits and capital reserve. The focus was across the period from year 2011 to year 2015.

Financial ratio analysis which is the use of relationships among financial statement accounts to gauge the financial condition and performance of a company which was also used. This analysis was focused on measures of financial soundness indicators expressed in ratios. The regulatory authority adopted the use of CAEL i.e. Capital adequacy, Asset quality, Earnings and Liquidity rating model, for monitoring the economic conditions, stability and performance of the DTSs. This study focused on the various ratios that are used to evaluate the financial soundness in the mentioned aspects.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of data, results and interpretation. It will focus on discussion on the effects of financial risks on the return on investments for DTSs in Kenya based on the analysis results and interpretation of research findings and data analysis output. Descriptive statistics analysis was carried out using linear regression model for the DTSs return on investments as a function of financial risks, capital adequacy, management efficiency and asset quality using averages of the data across the five years under the scope. A financial analysis was carried out on the industry statistics. Tools used for analysis were common-size analysis, Comparative analysis, trend analysis and ratio analysis.

4.2 Descriptive Statistics Analysis

To establish the relationship between the dependent variable and the independent variables as well as the relationship among the independent variables linear regression model was applied with the DTSs' return on investments being a function of financial risks, capital adequacy, management efficiency and asset quality.

Table 4.1 below provides a descriptive analysis of the return on investment as a measure of return on assets in DTSs in Kenya over a five year period as well as ratios of the specific determinants of return on investments addressed in this study. The input used in the analysis was the values of the ratios represented in the linear equation for each year over the five years period.

Table 4.1: Analysis of the R.O.I and the Determinants of R.O.I in DTSs in Kenya's in Years 2011-2015

Averages	2011	2012	2013	2014	2015
R.O.I	0.072492747	0.069655839	0.074281623	0.074014134	0.077270394
Financial Risks	0.958148502	0.946042933	0.934907715	0.922698562	0.945674452
Capital Adequacy	0.131103995	0.133962228	0.144517348	0.172079971	0.175673898
Management Efficiency	0.619665491	0.671447775	0.705055566	0.673051732	0.660243023
Asset Quality	0.096875156	0.073395075	0.047200673	0.057311267	0.051180752

The R.O.I increased from 7.25% in year 2011 to 7.73% in year 2015. Financial risks stated as a reciprocal of the liquidity ratio decreased from 0.958 in year 2011 to 0.945 in year 2015.

Capital adequacy increased from 13.11% in year 2011 to 17.57% in year 2015. Management efficiency increased from 61.97% in year 2011 to 66.02% in year 2015. Asset quality position improved across the period by the ratio of the non-performing loans decreasing to 0.051 in year 2015 from a level of 0.097 in year 2011.

Table 4.2 below shows the model output of the descriptive statistics of the data. These are the population, the minimum, the maximum, the mean, the standard deviation, the variance and the kurtosis.

Table 4.2: Models Descriptive Statistics

Descriptive Statistics

		R.O.I	Financial Risks	Capital Adequacy	Management Efficiency	Asset Quality
N	Valid	5	5	5	5	5
	Missing	0	0	0	0	0
Mean		.073543	.941494	.151467	.665893	.065193
Std. Error of Mean		.0012425	.0059674	.0094346	.0137563	.0090918
Median		.074014	.945674	.144517	.671448	.057311
Mode		.0697[a]	.9227[a]	.1311[a]	.6197[a]	.0472[a]
Std. Deviation		.0027782	.0133434	.0210964	.0307600	.0203299
Variance		.000	.000	.000	.001	.000
Kurtosis		.873	.058	-3.002	1.667	.483
Std. Error of Kurtosis		2.000	2.000	2.000	2.000	2.000
Minimum		.0697	.9227	.1311	.6197	.0472
Maximum		.0773	.9581	.1757	.7051	.0969

Over the period between year 2011 to year 2012 the R.O.I averaged at 7.35% while the financial risks averaged at 0.941. The capital adequacy was 15.15% on average meaning that majority of the DTSs licensed to operate across this period had complied with the regulatory requirement of a minimum of 10%. The management efficiency was at an average of 66.89% which is above general average level of 50% which is an indicator that management was putting the investors' money in to investments that generated good returns. The asset quality measure averaged at 0.065.

4.3 Regression Analysis

The regression model output is interpreted to give the relationship between the dependent variable and the independent variables under study. The output indicates the correlation coefficients for the variables under study and shows the coefficients for the variables in the

linear regression model and ultimately formulation of the linear equation for this study. The analysis indicates results for the tests of fitness of application of linear regression model in this particular study and the test of hypothesis at 95% confidence interval.

Table 4.3: Linear Regression Model Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	.	.

a. Predictors: (Constant), Asset Quality, Capital Adequacy, Financial Risks, Management Efficiency
b. Dependent Variable: R.O.I

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.000	4	.000	.	.[b]
	Residual	.000	0	.		
	Total	.000	4			

a. Dependent Variable: R.O.I
b. Predictors: (Constant), Asset Quality, Capital Adequacy, Financial Risks, Management Efficiency

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.747	.000		.	.
	Financial Risks	-.273	.000	-1.310	.	.
	Capital Adequacy	-.373	.000	-2.831	.	.
	Management Efficiency	-.463	.000	-5.125	.	.
	Asset Quality	-.805	.000	-5.889	.	.

a. Dependent Variable: R.O.I

Coefficients[a]

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bou
1	(Constant)	.747	
	Financial Risks	-.273	
	Capital Adequacy	-.373	
	Management Efficiency	-.463	
	Asset Quality	-.805	

a. Dependent Variable: R.O.I

The test of fitness is positive, it indicates that the model is a perfect fit for the data with the values of R and R Square equal to 1 and the analysis of variance with the Sum of Squares measure at the range of 0 for all the variables.

The model equation estimated from the analysis;

$Y = 0.747 - 0.273X1 - 0.373X2 - 0.463X3 - 0.805X4 + e$

Where; Y = Return on Investments (Using the measure of return on assets as a ratio of Net income to total assets)

α= constant term

X1= Financial Risks

X2 = Capital Adequacy Ratio

X3 = Management Efficiency

X4 = Asset Quality

e= error term

According to the model equation, R.O.I will increase to 0.747 if the coefficients of financial risks, capital adequacy, management efficiency and asset quality are absent. A unit change in financial risks causes a 0.273 decrease in R.O.I while a unit change in capital adequacy causes a 0.373 decrease in in R.O.I. A unit change in management efficiency causes a 0.463 decrease in R.O.I while a unit change in asset quality causes a decrease in R.O.I by 0.805. All the independent variables in this study have a significant effect on the return on investments for DTSs in Kenya as it has been demonstrated by the variables' coefficients derived from the regression model.

At 95% confidence interval, the beta had a value therefore, the null hypothesis that H0: $\beta i = 0$, stated as financial risks have no effect on return on investment was rejected. The

alternative hypothesis, H1: $\beta i \neq 0$, stated as financial risks have effect on return on investment was accepted.

4.4 Correlation Analysis

The correlation test indicates the relationship among variables in this study are as shown in table 4.4. Interpretations from the analysis above indicates that financial risks have a significant effect on the return on investments for DTSs. In additions to this major determinant, other determinants discussed in this study have effect on the ROI as well as have relationships among themselves. An analysis of the relationship among independent variables is as shown in table 4.4.

Table 4.4: Correlation Analysis

Descriptive Statistics

	Mean	Std. Deviation	N
R.O.I	.073543	.0027782	5
Financial Risks	.941494	.0133434	5
Capital Adequacy	.151467	.0210964	5
Management Efficiency	.665893	.0307600	5
Asset Quality	.065193	.0203299	5

Correlations

		R.O.I	Financial Risks	Capital Adequacy	Management Efficiency	Asset Quality
Pearson Correlation	R.O.I	1.000	-.225	.786	.112	-.595
	Financial Risks	-.225	1.000	-.585	-.707	.712
	Capital Adequacy	.786	-.585	1.000	.224	-.679
	Management Efficiency	.112	-.707	.224	1.000	-.840
	Asset Quality	-.595	.712	-.679	-.840	1.000
Sig. (1-tailed)	R.O.I	.	.358	.058	.429	.145
	Financial Risks	.358	.	.150	.091	.088
	Capital Adequacy	.058	.150	.	.358	.104
	Management Efficiency	.429	.091	.358	.	.038
	Asset Quality	.145	.088	.104	.038	.
N	R.O.I	5	5	5	5	5
	Financial Risks	5	5	5	5	5
	Capital Adequacy	5	5	5	5	5
	Management Efficiency	5	5	5	5	5
	Asset Quality	5	5	5	5	5

From the correlation analysis output, it indicates that R.O.I is positively correlated to capital adequacy and management efficiency. However it is negatively correlated to financial risk and asset quality. Financial risk is negatively correlated to capital adequacy and management efficiency. However, it is positively correlated to asset quality at one tailed significance level. Capital adequacy is negatively correlated to financial risk and asset quality. However it is positively correlated to management efficiency. Management efficiency is negatively correlated to financial risk and asset quality. However it is positively correlated to capital adequacy. Asset quality is negatively correlated to capital adequacy and management efficiency. However it is positively correlated to financial risk. The inference from this is that the variables have a linear relationship as indicated from the linear regression model.

4.5 Interpretation of Research Findings and Discussion

According to the results of the analysis above, the average return on investment between 2011 and 2012 decreased from 7.25% to 6.67%. It then increased to 7.43% in 2013 and slightly decreased to 7.40% in 2014, then it considerably rose to 7.73% in 2015. The trend is highly influenced by the impact of SASRA regulations that came into effect in 2010 on running of the DTSs. Since 2010 the DTSs that had not complied with the imposed regulations on minimum capital requirement prior to their enactment were channeling most of their retained earnings in to their capital reserves to at least meet the minimum so that they can secure renewal of their licenses to operate year. Thus in 2012 the lending capacity and level of investment levels was lower than in 2011. DTS in the following drop in R.O.I in 2012. From year 2013 to 2015, most of the DTSs had met the minimum capital requirement and thus they had capacity to lend more and generate more

incomes as well as the capacity to diversify into other investment avenues. Thus during this period the R.O.I was on an upward trend.

Financial risks level was on a decreasing trend during the first four years of the period under focus, from 0.958 in 2011 to 0.946 in 2012, to 0.935 in 2013, and to 0.923 in 2014. This is interpreted as a reduction in credit risks and liquidity risk because of reduction in loan default and non-performing loans. However the trend changed towards the end of the period in focus. Financial risks level increased from 0.923 in 2014 to 0.946 in 2015. There was notable increase in the asset class referred to as other assets. The supervisory reports expressed that the Authority was concerned with the practice by DTSs to classify some a huge portion of their assets amounting to KES 4.51 Billion, and constituting about 1.3% of the total assets merely as others. This is because such classification is a recipe for fraud and abuse, particularly through related party transactions and unreconciled assets accounts.

Capital adequacy was on an increasing trend during the period under study. The first three years it gradually increased from one year to the next. It moved from 13.11% in 2011, to 13.39% in 2012, and to 14.45 in 2013. Then it sharply rose to 17.21% in 2014 and marginally increased to 17.56% in 2015. The period under study is basically the early season of post implementation of the regulatory body SASRA which was put in place in year 2010. The period signifies a transition period for all the DTSs to attain the requirements so that they could be certified as compliant. However, different DTSs moved this phase at different speed depending on their capacity and qualities like asset base. Thus the level of compliance to capital adequacy has been increasing from year to year and likewise does the capital adequacy measure for the DTSs. The levels of capital

adequacy on average was above the 10% minimum requirement which is a good indicator of positive response towards adoption of the authority's regulatory guidelines that were put in place. The average level of capital adequacy was 15.15%. To have attained this level, across the period DTSs adopted various strategies including mobilization of increased share purchase from the members, recruitment of new members and retention of surpluses. Sufficiently good level of capital adequacy above minimum requirement guarantees a cushion to fluctuations in earnings so that firms can continue to operate in periods of loss or negligible earnings thus financial stability during economic downturns. Management efficiency was on an increasing trend during the first 3 years of the period under review. It increased from 61.97% in 2011 to 67.14% in 2012, and to 70.50% in 2013. During the three years management was accelerating their exploration of different investment options that generated good returns to the investors. For the last two years management efficiency was on a decreasing trend. It dropped from 70.50% in 2013 to 67.30% in 2014 and to 66.02%. The decline in management efficiency indicates a laxity of management in designing strong financial policies or appropriate implementation of already established policies on good financial policies. This is especially challenged by the rapidly evolving financial sector in Kenya in response to rapid growth in ICT sector that has brought many financial products in the recent past to to-date. If the management in the DTSs slightly slack in adoption of the new ideas the organizations they lead lag behind in financial advancement. Generally the management efficiency measure in the sector averaged at 66.89% which is above general average level of 50%. This indicates that generally management was putting the investors' money in to investments that generated good returns.

Asset Quality position was on an improving trend during the period under study. The ratio of NPLs to total gross loans decreased from 0.097 in 2011 across the period to 0.051 in year 2015. Following the SASRA regulations implementations proper guidelines on loans disbursements helped the DTSs on evaluating the credit worthiness of the loan applicants. This has curbed the default rate and reduced the amount of non-performing loans. Thus the improvement on loan performance led to improvement on the asset quality for DTSs across the period under study.

The test of fitness is positive, it indicates that the model is a perfect fit, the correlation coefficient and the coefficient of determination measures equal to 1 which means that the model is fit with the variances in the data being 100% explained. The values of R and R Square equal to 1. The analysis of variance with the Sum of Squares measure at the range of 0 for all the variables indicates that the model has a small random error component and is appropriate for prediction. It supports the inference that there exists a linear relationship between the dependent variable and the independent variables.

The model output gives coefficients that indicates that there is a change in the dependent variable as a result of a unit change in the predictor variables.

The constant in the model is 0.747 that indicates that holding the other variables in the model equation at constant, the return on investments would increase by 0.747. This indicates that over the five years period the DTSs sector has stabilized and the systems already established can support improved financial growth in the sector. A unit change in financial risks causes a 0.273 decrease in R.O.I. This indicates that DTSs re faced with higher financial risks exhibited by credit risks and liquidity risks they ability to generate income is lowered thus the decline in R.O.I. A unit change in capital adequacy causes a

0.373 decrease in in R.O.I. This is because at a period where DTSs increase their capital base, the increase is funded by retained earnings and deductions from the deposits held which reduces the borrowing power of the members as well as the amount of funds available for lending hence a reduction in interest income and ultimately affects the R.O.I. A unit change in management efficiency causes a 0.463 decrease in R.O.I. Management may lean on towards risk averseness in protection to their personal interests for example security of tenure at the expense of seeking to pursue the goal of shareholders wealth maximization. To cover their interests better they may opt for sub-optimal investment decision that generated lower rates of returns. A unit change in asset quality measured by the ratio of NPLs to total gross loans causes a decrease in R.O.I by 0.805. When the loan performance deteriorates indicated by increase in non-performing loans, the expected interest incomes decline thus the reduction in the R.O.I as suggested in the model results. All the independent variables in this study have a significant effect on the return on investments for DTSs in Kenya as it has been demonstrated by the variables' coefficients derived from the regression model.

From the correlation analysis output, the relationship among the independent variables indicates that they relate with each other at various capacities. Financial risk is negatively correlated to capital adequacy and management efficiency. However, it is positively correlated to asset quality measure at one tailed significance level. Capital adequacy is negatively correlated to financial risk and asset quality. However it is positively correlated to management efficiency. Management efficiency is negatively correlated to financial risk and asset quality. However it is positively correlated to capital adequacy. Asset quality is negatively correlated to capital adequacy and management efficiency.

However it is positively correlated to financial risk. When the levels of capital adequacy and management efficiency are high the level of financial risks is low and the loan performance is at a good rating (with a low ratio of NPLs to total gross loans)

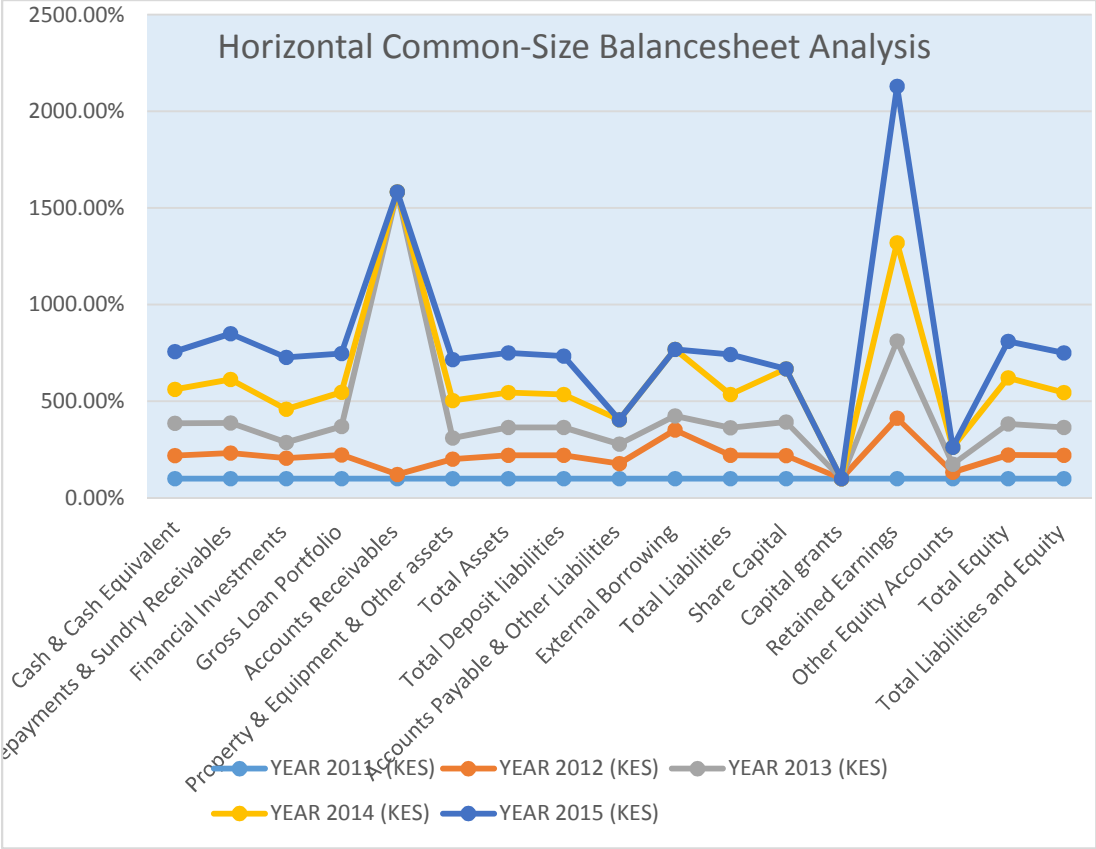
4.6 Financial Analysis

A financial analysis was carried out on the industry statistics. Tools used for analysis were common-size analysis, Comparative analysis, trend analysis and ratio analysis.

Table 4.5: Horizontal Common-Size Analysis on Consolidated BalanceSheet (Base Year 2011)

	YR 2011	**YR 2012**	**YR 2013**	**YR 2014**	**YR 2015**
	%	%	%	%	%
Cash & Cash Equivalent	100.00	118.89	166.87	175.31	196.74
Prepayments & Sundry Receivables	100.00	132.98	154.67	225.62	237.03
Financial Investments	100.00	106.02	80.68	172.11	268.75
Gross Loan Portfolio	100.00	122.95	146.93	177.74	199.91
Accounts Receivables	100.00	21.55	1461.24	0.00	0.00
Property & Equipment & Other assets	100.00	101.51	109.31	193.67	211.75
Total Assets	**100.00**	**120.83**	**144.60**	**180.46**	**205.18**
Total Deposit liabilities	100.00	121.39	143.37	171.16	197.31
Accounts Payable & Other Liabilities	100.00	77.65	101.69	124.53	0.33
External Borrowing	100.00	251.60	72.42	345.33	0.00
Total Liabilities	100.00	120.67	142.03	171.76	207.59
Share Capital	100.00	118.63	173.48	275.56	0.00
Capital grants	100.00	0.00	0.00	0.00	0.00
Retained Earnings	100.00	312.61	398.78	507.99	810.43
Other Equity Accounts	100.00	32.74	41.47	87.47	0.00
Total Equity	100.00	121.92	161.51	237.75	189.31
Total Liabilities and Equity	**100.00**	**120.83**	**144.60**	**180.46**	**205.18**

Chart 4.1: Horizontal Common-Size Balancesheet Analysis

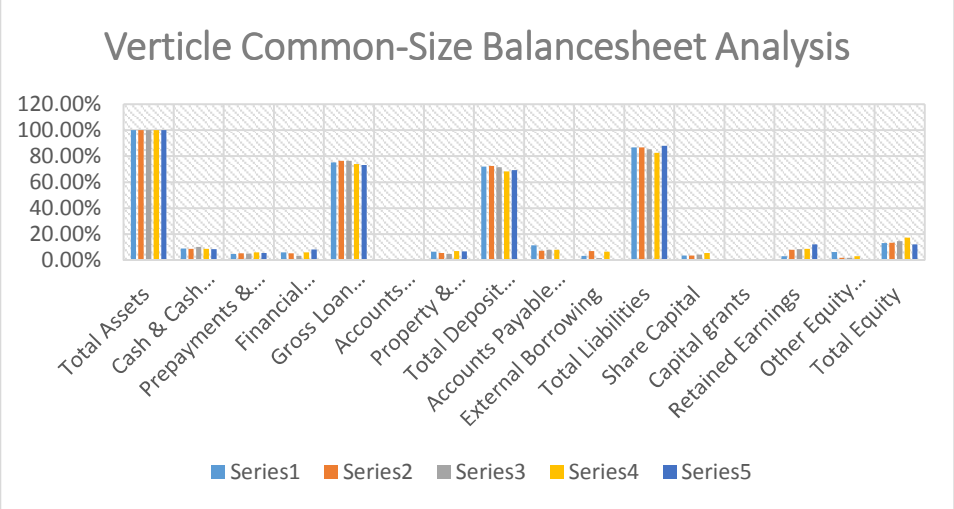


The key variables representing the various components of a balancesheet statement of the SACCOs increased from year 2011 through to year 2015. This indicates a steady growth size and capacity of the DTS SACCO's sub-sector over the period under study.

Table 4.6: Vertical Common-Size Analysis on Consolidated BalanceSheet (Assets as the Base)

	YR 2011	YR 2012	YR 2013	YR 2014	YR 2015
	%	%	%	%	%
Cash & Cash Equivalent	8.92	8.78	10.30	8.67	8.55
Prepayments & Sundry Receivables	4.80	5.29	5.14	6.01	5.55
Financial Investments	6.10	5.26	3.35	5.91	8.20
Gross Loan Portfolio	75.16	76.48	76.37	74.03	73.23
Accounts Receivables	0.07	0.01	0.76	0.00	0.00
Property & Equipment & Other assets	6.45	5.42	4.88	6.92	6.66
Total Assets	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Total Deposit liabilities	72.02	72.35	71.40	68.31	69.26
Accounts Payable & Other Liabilities	11.44	7.35	8.04	7.89	0.02
External Borrowing	3.36	6.99	1.68	6.43	0.00
Total Liabilities	86.81	86.70	85.27	82.63	87.83
Share Capital	3.68	3.61	4.41	5.62	0.00
Capital grants	0.07	0.00	0.00	0.00	0.00
Retained Earnings	3.08	7.97	8.49	8.67	12.17
Other Equity Accounts	6.36	1.72	1.82	3.08	0.00
Total Equity	13.19	13.30	14.73	17.37	12.17
Total Liabilities and Equity	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Chart 4.2: Vertical Common-Size Analysis on Consolidated BalanceSheet

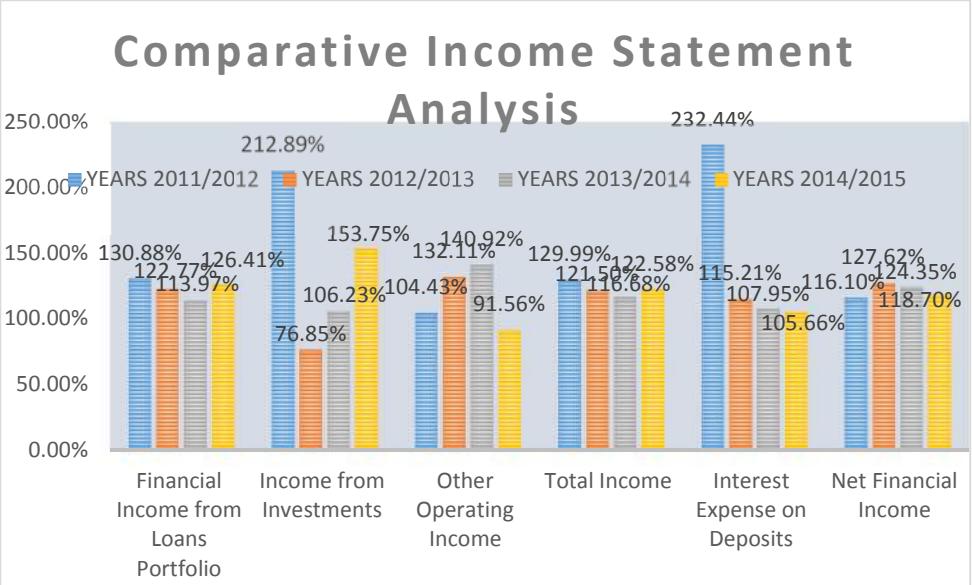


From the analysis as exhibited in the series above, on the assets side of the balancesheet, gross loan portfolio compared relatively to the total assets held by the DTSs across the period under focus while accounts receivables compared insignificantly to the total assets. On the liabilities and equity side of the balancesheet, total deposit liabilities compared relatively to the total assets while capital grant compared insignificantly across the period under study.

Table 4.7: Comparative Analysis on Comprehensive Income Statement

	YEARS 2011/2012	**YEARS 2012/2013**	**YEARS 2013/2014**	**YEARS 2014/2015**
INCOME	%	%	%	%
5Financial Income from Loans Portfolio	130.88	122.77	113.97	126.41
Income from Investments	212.89	76.85	106.23	153.75
Other Operating Income	104.43	132.11	140.92	91.56
Total Income	**129.99**	**121.50**	**116.68**	**122.58**
EXPENSES				
Interest Expense on Deposits	232.44	115.21	107.95	105.66
Net Financial Income	**116.10**	**127.62**	**124.35**	**118.70**

Chart 4.3: Comparative Analysis on Comprehensive Income Statement

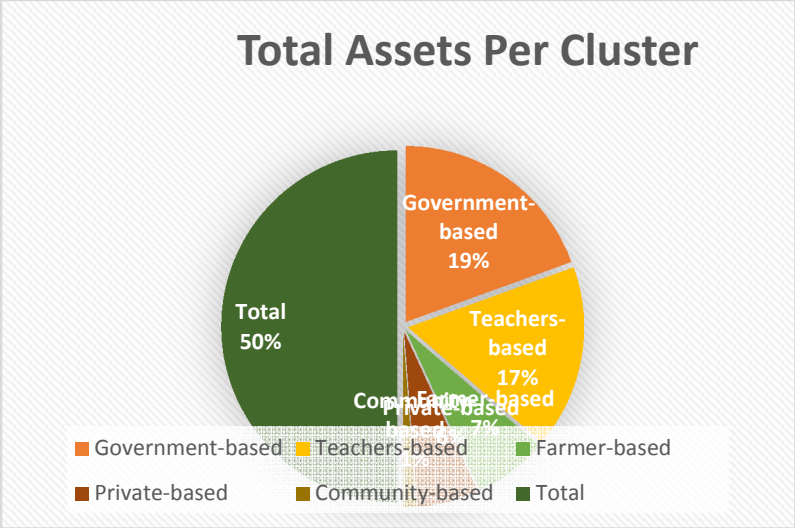


The variables representing the income statement components experienced a growth rate that averaged within the range of 100% to 150% across the years for majority of the components. Extremes to the higher side were experienced for growth in income from investments and interest expense on deposits from year 2011 to year 2012 at 212.89% and 232.44% respectively. Extremes to the lower side were experienced in growth of investment income from year 2012 to year 2013 at 76.85% and in growth in other operating income from year 2014 to year 2015 at 91.56%.

Table 4.8: Clustering Of DTSs Based On Original Common-Bonds

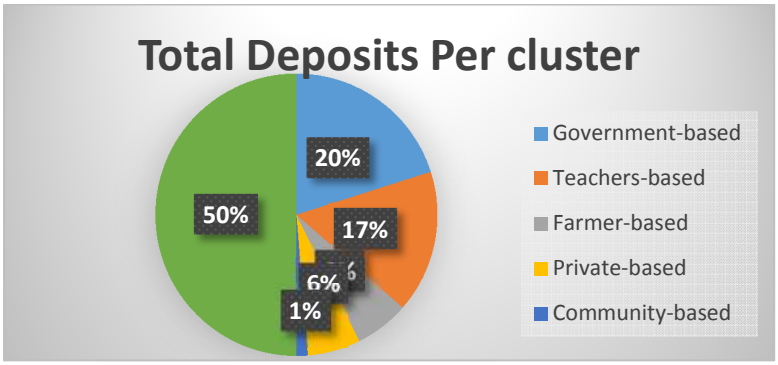
Original common-bond	Total Assets	Total Deposits	Net Loans	Members
Government-based	38.90%	40.20%	40.80%	14.80%
Teachers-based	33.70%	32.70%	33.20%	19.30%
Farmer-based	13.60%	12.40%	11.70%	52.70%
Private-based	11.30%	12.10%	11.60%	6.50%
Community-based	2.40%	2.60%	2.70%	6.70%
Total	100%	100%	100%	100%

Chart 4.4: Comparative Analysis on Total Assets per Cluster



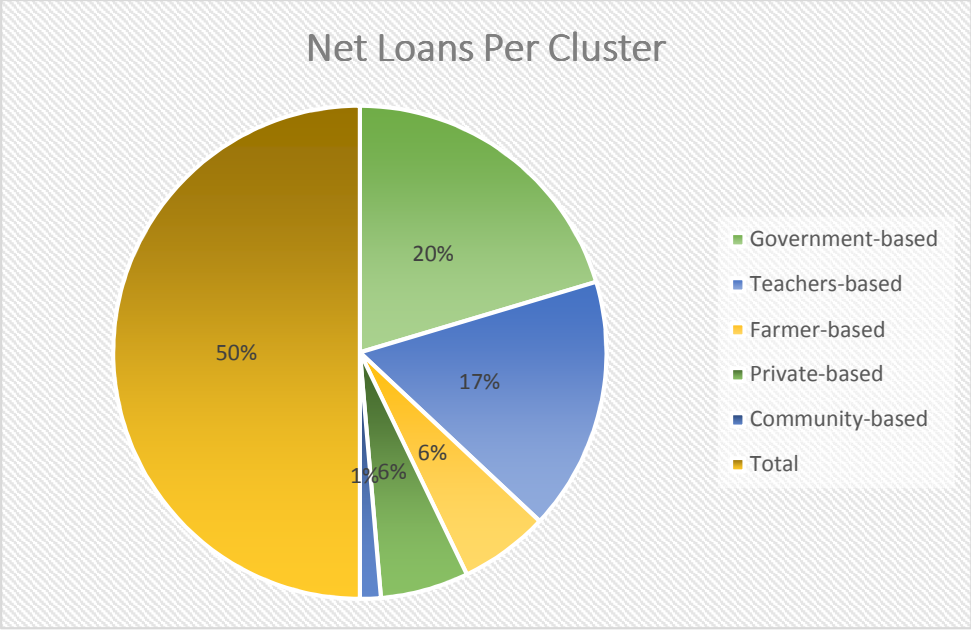
The government based DTSs holds the largest share of total assets held by DTSs SACCO sub-sector in Kenya while community based DTSs holds the least share at 38.90% and 2.40% respectively.

Chart 4.5: Comparative Analysis on Total Deposits per Cluster



The government based DTSs holds the largest share of total deposits held by DTSs SACCO sub-sector in Kenya while community based DTSs holds the least share at 40.20% and 2.60% respectively.

Chart 4.6: Comparative Analysis on Net Loans per Cluster

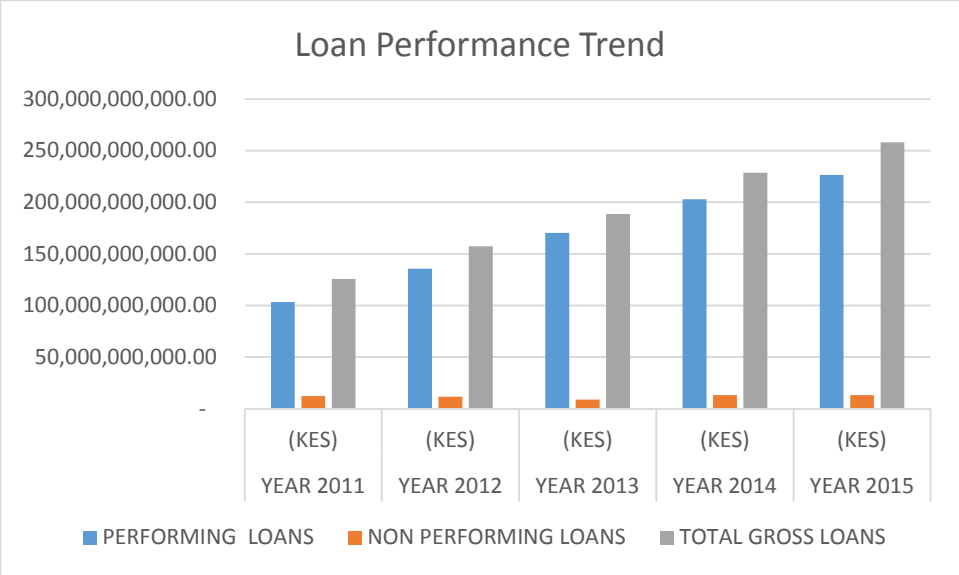


The government based DTSs holds the largest share of net loans held by DTSs SACCO sub-sector in Kenya while community based DTSs holds the least share at 40.80% and 2.70% respectively.

Table 4.8: Trend Analysis on Loan Performance

	YEAR 2012	YEAR 2013	YEAR 2014	YEAR 2015
	%	%	%	%
PERFORMING LOANS	30.93	25.66	19.13	11.54
NON PERFORMING LOANS	-5.30	-22.86	47.13	0.89
TOTAL GROSS LOANS	25.00	19.95	21.17	12.98

Chart 4.7: Loan Performance Analysis

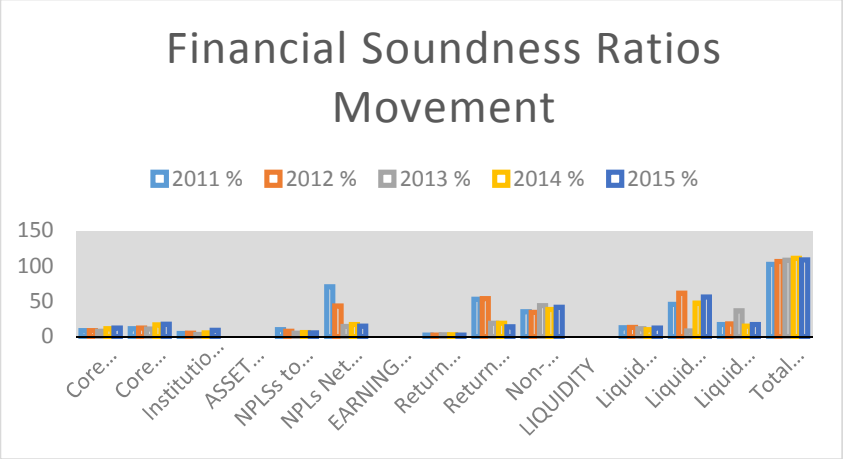


From the analysis above there was a steady growth in the amount of loans that were issued across the period. The quality of the loans had improved from year 2011 to year 2012 and to year 2013. Year 2013 was the best year as it recorded the greatest decline in levels of non-performing loans. Towards the end of the period under study the, the two remaining years experienced deterioration of the loan quality as exhibited to increase in level of non-performing loans whereby year 2014 marked the highest rate of NPLs.

Table 4.9: Ratio Analysis on Financial Soundness

FINANCIAL SOUNDNESS INDICATORS	2011	2012	2013	2014	2015
CAPITAL ADEQUACY	**%**	**%**	**%**	**%**	**%**
Core capital to Total Assets (min. 10%)	8.36	8.64	7.74	11.20	12.17
Core Capital to Total deposit liabilities (min. 8%)	11.36	11.94	10.90	16.40	17.57
Institutional Capital to Total Assets (min. 8%)	4.45	5.02	2.84	5.42	8.75
ASSET QUALITY					
NPLSs to Total Gross Loans	9.6	7.34	4.72	5.73	5.12
NPLs Net of Provisions to Capital	70.4	43.4	14.50	17.06	14.65
PROFIT&EARNINGS RATIO					
Return on Assets (ROA)	1.98	2.02	2.32	2.56	1.87
Return on Equity (ROE)	53.07	53.79	19.03	18.78	13.65
NonInterest Expenditures to GrossIncome Ratio	35.24	34.44	43.76	38.40	41.69
LIQUIDITY					
Liquid Assets to Total Assets	12.62	12.83	10.93	9.99	11.90
LiquidAssets to Shortterm Liab (LiquidityRatio)	45.42	61.39	7.76	47.32	55.99
Liquid Assets to Total Deposit	17.08	17.74	36.40	14.57	17.18
Total Loans to Total Deposit	102.28	106.23	108.06	110.95	108.74

Chart 4.8: Financial Soundness Analysis



The specific ratios used to measure financial soundness of the DTSs were generally consistent across the period under study. However, the ratio of NPLs not of provisions to capital was on the extreme to the higher side in year 2011at 70.40% as compared to the subsequent years which were at 43.40%, 14.50%, 17.16% and 14.65%.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the study and a brief explanation of the model that was used in the study to analyze the data and assess the relationship between the dependent variable and the predictor variables in this study. Conclusions from the study are addressed in this chapter. Limitations of the study are highlighted in this chapter .Further the chapter brings forth policy recommendations as derived from identified areas of need during the research process and suggestions on areas that should be considered for further study.

5.2 Summary of Findings

The study reviewed the studies that have been done on areas around and related to financial risks and return on investment around the world. A brief history of the SACCO sector in Kenya to the emergence of DTSs was discussed to help readers understand the background of the study. The study's objective was to establish the effect financial risks has on the return on investments in DTSs. The study sought to bridge the knowledge gap that exists on the area relating to financial risks and return on investment in Deposit Taking SACCOs since previous studies done on DTSs had not focused this particular subject. The expectation is that the findings of this research will assist in filling that knowledge gap and contribute to further research on unexplored aspects of performance and operations of DTSs as well as related financial institutions.

Descriptive data analysis was conducted using linear regression model to analyze data in this study. The study focused on four independent variables whose effect on the dependent

variable was predicted. The dependent variable in this study was return on investment using the measure of return on assets. The independent variables were financial risks, capital adequacy, management efficiency and asset quality. Secondary data was used for this study and data was analyzed using Statistical packages for social sciences software- SPSS 2.0.

The results of the data analysis indicates that financial risks has significant effect on the return on investment for DTSs. The study shows that in addition to the financial risks, other determinants of return on investments have significant effect on return on investment. The study indicated that the variables under study are correlated to one another.

5.3 Conclusions

The objective of the study was to establish the effect of financial risk on the return on investment for DTSs in Kenya. The results of the study indicate that an inverse relationship exists between the two variables. Other that financial risks, return on investments is also influenced by other factors that were reviewed under literature review as determinants of return on investments which are; - capital adequacy, management efficiency and asset quality. These factors are correlated with financial risks as well. Financial risks is strongly presented as an important factor determining the return on investments for DTSs in Kenya. For the DTSs to achieve desired growth and maintain an increasing trend on return on investments, management should be proactive on implementation of financial risks management tactics and adoption of policies that strive to mitigate financial risks to be able to maintain the risks at the minimum levels possible.

Enactment of the SASRA regulatory body in 2010 greatly improved the way the operations of DTSs were being run which has positively impacted on the performance of the sector

and has strengthened the sector amidst the tough competition faced from the counter parts who are players in the financial sector including micro finance institutions and commercial banks. SASRA has introduced regulatory guidelines and minimum requirement for key financial soundness indicators. A key area where limits have been placed is the capital adequacy whereby a minimum of 10% was set. The regulatory body has ensured that DTSs meet that threshold for their licenses to operate as DTSs to be validated. This has helped the DTSs to establish good capital base by introducing share capital reserves. Need to build-up more reserves on the capital base has assisted the DTSs to drop the tendency of paying unsustainable interest rates and returns on deposits to shareholders (SASRA, 2014). In addition to that this practice has also aided the safeguarding of members deposits in case of financial distress that may arise as a result of economic downturn or constraints from stringent monitoring on to the regulatory bodies' requirements.

5.4 Limitations of the Study

The research approach faced a shortcoming in the identification of the sample size and components while employing a descriptive survey study design. Since the industry is at its early stages post regulatory body was put in place in 2010, the numbers of the DTSs who were compliant and issued with operating licenses has been inconsistent from one year to the other across the period between year 2011and year 2015 under focus. Hence the study opted to focus on the population thus used a census on the licensed DTSs in Kenya based on the comprehensive operations and consolidated performance of the DTSs based on the industry statistics.

The study was limited to the degree of accuracy and validity of the data obtained from the DTSs comprehensive and consolidated financial reports as presented by Sacco Societies

Regulatory body. The comprehensive reports had been derived from audited financial accounts of the DTSs as submitted to the authority and their regulatory filings. The study therefore relied on the auditors assurance that the audited accounts represented a true and fair view of the status of the various Sacco's financials for the years audited. No independent verification of the data was carried out as the audited accounts were assumed to represent a true and fair view.

The study faced limitations in acquisition some of the required information in a timely manner from the SASRA regulatory body. The research department was unresponsive towards the request presented to offer a chance to obtain some data from the organization at least within the short time frame that the data collection phase was scheduled to take place. This occasioned to reliance on the information from their website (www.sasra.go.ke). Thus the data used in this study is limited to SASRA annual supervisory reports that are readily accessible on the internet.

Limitations of time and financial resources needed to conduct the study. The study also faced challenges in effective time management as some of the phases scheduled were overlapping and it involved a balancing act to have all the tasks accomplished with efficiency and within required time lines. The research process involved travelling from one location to the next which consumed finances. Other costs incurred were cyber fees, stationery and printing cost.

The study was limited to a time frame of 5 years from 2011 to 2015. SASRA was set up in 2010 and the guiding Regulations 2010 became operational from June 18th in 2010. The study focus was limited to the period post the regulatory body set up because that DTSs operations were from then standardized by the guidelines and regulations put in place. Thus

analysis of the financial reports was hence possible as the DTSs were subject to the same reporting standards as opposed to the period prior to the regulatory authority. Therefore the first complete year to have the DTSs business regulated was year 2011 and the last complete year to have the annual reports already published was year 2015.

5.5 Recommendations

5.5.1 Policy Recommendations

The findings from the study shows that financial risks have a significant effect on return on investment for DTSs. Financial risks in DTSs exhibited as credit risks and liquidity risk exposures. These are attributed by the performance of loans in terms of loan default rate and non-performing loans levels. Other factors contributing to the financial risks exposure are the fluctuations in country's inflation rates and interest rates. The regulatory body should intervene and set limits for the other key financial soundness indicators beyond the capital adequacy ratios which they have already implemented. The other key financial soundness indicators includes asset quality, earnings& profitability and liquidity. The regulatory authority should borrow heavily from the regulatory bodies regulating their counterparts' players in the financial sectors majorly the Central Bank of Kenya.

There was notable increase in the asset class referred to as other assets. The supervisory reports expressed that the Authority was concerned with the practice by DTSs to classify some a huge portion of their assets amounting to KES 4.51 Billion, and constituting about 1.3% of the total assets merely as others. This is because such classification is a recipe for fraud and abuse, particularly through related party transactions and unreconciled assets accounts. Regulatory bodies should implement policies that safe guards use of members savings in DTSs against misuse by the management teams. The authorities should set limits

of the level of investments in assets that are not explicitly classified into either financial investments or property plant and equipment which are blankly referred to as other assets should be, this being measured as other assets value expressed as a percentage of total assets value.

5.5.2 Suggestions for further Research

The study focused on effects of financial risks on R.O.I for DTSs in Kenya, it did not focus on the unique attributes that defines DTSs under the different clusters classified according to the original bond for members. Likewise, following the devolution of government to the counties, DTSs have been grouped according to their geographical locations. Thus DTSs are likely to be operating in different business environment unique to their cluster group or to their county which would bring about unique challenges, opportunities and exposures. I recommend a study on effect of devolution on performance of DTSs. This would enlighten the national government policies when making policies to govern the co-operative societies and guide regulatory authorities in monitoring the DTSs based on their unique exposures.

This study focused on the effects of financial risks on R.O.I in general, it did not dwell into depths on the factors that manifests financial risks distinctly. Financial risks exposures for players in the financial sector of the economy is accelerated by insider lending. In the recent past the banking sector has experienced such scenarios with commercial banks to an extent that have occasioned the affected institutions to go under. DTSs operating within almost similar business environment with the commercial banks they are exposed to the challenges posed by insider lending as well. A study around this area would give insights to the DTSs' regulatory bodies that would be helpful in implementation of policies that controls how management in DTSs are controlled and limited when it comes to obtaining loans from the

institutions they lead. Thus I recommend a study on impacts of insider lending on performance of DTSs.

Another manifestation of financial risks exposure is the interest rates risks. When the demand for loans in DTSs supersedes the deposits available for lending, DTSs obtain loans from commercial banks to obtain funds to meet their members' demands. The interest charged forms financing costs part of the DTSs' expenses which consequently has an influence on their net incomes. Whenever the interest rates fluctuates the ripple effect is felt across the economy as it affects the performance of the loan holders. The governments through the regulatory bodies, Central Banks, from time to time imposes policies that controls the movements of the interest rates which is basically done by interest rates capping. I recommend a study effects of interest rats capping on performance of DTSs. Such study findings would educate the management of DTSs on good financial planning and decision making when it comes to seeking of loan financing.

This study was limited to DTSs in Kenya, further to it I recommend a study to establish the effects of financial risks on Non-Deposit-Taking SACCOs in Kenya. To Such a study would give guidance on whether the research findings based on the study on DTSs would apply to them as well or rather the whole co-operative societies industry. The results from such a study would be useful to the government as it sets regulations to regulate the entire co-operative societies industry with an aim of promoting their presence as major stakeholders in the building and growth of a sustainable economy.

Default rate has been one of the major manifestation credit risk type of financial risks faced by DTSs. Different avenues have been employed to mitigate this exposure including Credit

Information Sharing (CIS). This involves players in the financial sector sharing both negative and positive information which is beneficial to them amongst themselves. So far one of the avenue that financial institutions have utilized CIS is through use of Credit Reference Bureaus (CRB) to verify the credit worthiness of loan applicants in quest to mitigate default risks. I recommend a study on effects of CIS on financial risk management in financial institutions.

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APPENDICES

APPENDIX I: SASRA LICENCED DTSs AS AT THE END OF 2015

	NAME OF DTS	TOTAL ASSETS (KES)	TOTAL DEPOSITS (KES)	NET LOANS (KES)	TOTAL INCOME (KES)
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
3	STIMA	20,270,591,000	15,893,502,000	16,283,858,000	2,662,913,000
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	UNAITAS	9,286,190,757	5,382,365,571	7,426,024,678	1,455,370,763
8	UKULIMA	9,212,277,075	6,716,211,924	6,839,384,151	1,092,061,489
9	METROPOLITAN	8,550,627,577	4,777,870,785	7,255,037,324	1,227,499,577
10	IMARISHA	7,241,046,105	4,462,216,857	5,631,812,700	1,082,385,748
11	KENYA BANKERS	6,334,560,585	4,701,828,747	3,966,803,034	653,378,438
12	KAKAMEGA TEACHERS	6,103,386,889	3,555,809,138	4,876,446,162	957,717,347
13	GUSII MWALIMU	6,091,424,725	3,990,728,429	4,695,365,500	953,473,748
14	BANDARI	6,036,096,289	3,968,010,260	5,327,822,355	918,362,936
15	HAZINA	5,029,370,321	4,066,533,585	4,127,091,824	605,776,399
16	NYERI TEACHERS	4,635,491,734	2,806,251,829	3,208,912,431	582,112,189
17	IMARIKA	4,368,067,480	3,103,022,125	3,471,060,285	768,468,029
18	BORESHA	4,315,403,536	2,532,715,776	3,148,710,840	681,205,645
19	MAGEREZA	4,125,331,003	3,061,146,742	2,087,417,273	472,820,414
20	SHERIA	4,125,135,039	2,896,960,130	3,431,040,503	530,633,700
21	TOWER	4,007,925,071	3,034,923,586	3,029,621,393	548,883,467
22	MENTOR	3,926,234,298	3,007,206,335	3,150,143,542	557,411,649
23	MOMBASA PORT	3,404,355,398	1,507,138,549	2,348,074,425	606,248,081
24	COSMOPOLITAN	3,371,820,654	2,867,642,031	2,774,201,015	427,311,173
25	SAFARICOM	3,224,119,317	2,521,776,609	2,772,999,628	335,123,794
26	BINGWA	3,192,079,633	1,877,015,451	2,304,727,610	590,082,290
27	KWETU	2,982,763,598	1,553,173,678	798,960,485	247,312,816
28	SOLUTION	2,959,581,619	1,906,252,548	2,040,829,725	455,716,130
29	KITUI TEACHERS	2,826,986,065	2,121,764,928	2,238,502,257	517,201,706
30	NACICO	2,822,230,130	1,661,230,929	1,476,608,803	446,731,782
31	WINAS	2,786,816,388	1,971,397,188	2,319,267,992	483,294,267
32	WAUMINI	2,773,956,585	2,158,733,453	2,470,796,743	323,231,873
33	OLLIN	2,628,987,129	1,932,917,519	2,183,483,726	422,604,712
34	K-UNITY	2,562,786,803	1,916,099,121	1,065,861,912	490,568,502

35	JAMII	2,551,608,245	1,837,812,556	2,007,130,870	393,128,791
36	MURATA	2,456,204,875	1,662,033,885	1,674,560,037	372,772,027
37	CHAI	2,288,630,479	1,583,416,413	2,001,886,818	334,709,124
38	TRANSNATION	2,267,110,433	1,748,156,401	1,816,620,551	353,877,623
39	NDEGE CHAI	2,265,307,871	1,431,543,419	1,783,113,083	395,824,934
40	TAIFA	2,154,836,874	1,674,889,546	1,263,584,967	350,531,962
41	EGERTON UNIVERSITY	2,141,033,487	1,354,536,663	1,470,325,356	256,314,043
42	CAPITAL	2,086,526,581	1,674,083,793	1,242,738,756	382,781,015
43	MAISHA BORA	2,062,035,290	1,685,235,165	1,811,049,780	233,035,014
44	CHUNA	2,010,255,141	1,364,215,289	1,946,930,199	223,734,996
45	YETU	1,995,648,187	1,301,662,001	1,189,398,328	314,967,423
46	NAKU	1,960,365,573	1,474,225,316	1,525,053,210	305,417,429
47	KENPIPE	1,911,379,005	1,456,226,695	1,519,341,793	252,177,968
48	NYATI	1,879,584,461	1,370,267,727	1,677,862,005	299,461,592
49	ASILI	1,862,205,414	1,321,868,337	1,137,889,826	251,247,775
50	FORTUNE	1,826,461,520	936,824,511	1,166,168,524	346,294,635
51	UNISON	1,806,368,922	1,259,933,662	1,438,997,871	289,685,139
52	SHIRIKA	1,741,852,628	1,404,972,923	1,338,388,183	204,776,133
53	KENYA HIGHLANDS	1,694,992,701	1,160,327,108	770,839,152	262,204,987
54	TAI	1,579,974,200	945,371,221	988,122,101	224,818,681
55	KENVERSITY	1,537,519,007	1,203,974,756	1,261,845,061	230,583,940
56	ARDHI	1,463,597,131	1,224,501,041	1,174,645,111	149,805,934
57	NG'ARISHA	1,459,119,753	873,049,466	889,067,757	260,889,391
58	MOI UNIVERSITY	1,442,036,071	822,498,414	610,438,193	37,363,939
59	TEMBO	1,403,699,652	976,274,861	1,172,562,157	202,926,941
60	NOBLE	1,388,990,310	996,521,404	1,053,414,364	225,361,228
61	WANANDEGE	1,330,103,320	1,080,963,016	748,472,884	201,643,941
62	NATION	1,262,699,084	1,006,077,139	1,108,444,299	156,834,196
63	WAKENYA PAMOJA	1,243,568,688	433,688,339	578,216,427	325,376,116
64	WANANCHI	1,158,367,768	678,279,195	743,369,598	226,247,420
65	WANAANGA	1,157,985,221	967,148,865	810,794,136	163,116,420
66	MWITO	1,123,635,627	886,799,179	982,330,443	124,141,885
67	NASSEFU	1,122,214,663	799,461,462	967,159,731	197,339,638
68	UKRISTO NA UFANISI	1,120,048,500	969,018,005	1,056,510,249	149,797,218
69	QWETU	1,101,178,030	785,441,058	761,793,544	220,201,939
70	NAWIRI	1,034,351,434	717,313,249	395,004,532	177,049,827
71	TELEPOST	1,023,305,929	524,644,265	680,104,501	121,807,953
72	ELIMU	1,013,242,020	695,300,139	558,868,746	155,020,013
73	KENYA CANNERS	1,000,323,610	714,161,275	703,249,793	147,988,702
74	TRANS NATIONAL	993,532,583	598,205,360	510,494,346	159,168,581
75	DIMKES	984,951,923	868,681,336	858,546,929	107,394,192

76	SIMBA CHAI	946,072,969	617,933,043	793,179,778	153,135,332
77	GITHUNGURI DAIRY	944,919,448	682,571,617	666,237,484	140,337,211
78	SUKARI	920,923,098	566,471,241	550,138,335	126,817,862
79	SOUTHERN STAR	890,081,482	568,210,937	460,323,691	123,926,483
80	SMARTLIFE	885,664,257	559,427,732	675,109,341	78,466,273
81	TRANS -ELITE COUNTY	835,410,663	590,357,693	332,588,597	93,012,300
82	BIASHARA	791,450,658	537,052,729	580,137,292	146,493,098
83	2NK	771,365,683	532,463,972	306,683,409	77,863,106
84	SKYLINE	759,765,706	602,250,897	504,562,844	119,368,141
85	KINGDOM	752,520,813	597,489,018	626,673,238	96,070,403
86	KITE	738,309,036	611,613,850	505,155,968	71,167,804
87	ECO-PILLAR	735,114,996	493,551,220	251,297,076	82,952,796
88	COMOCO	709,115,524	557,704,320	575,485,464	111,308,004
89	STEGRO	707,229,839	272,823,651	88,192,342	79,824,376
90	ORIENT	686,028,629	400,968,241	614,481,056	113,725,409
91	FUNDILIMA	680,607,605	541,428,717	523,969,741	88,094,361
92	JITEGEMEE	678,213,682	311,202,443	349,600,502	92,069,793
93	UNIVERSAL TRADERS	666,755,312	375,885,986	523,121,578	107,060,909
94	FARIDI	644,907,610	454,814,431	368,181,779	86,064,432
95	MAFANIKIO	604,188,621	370,403,370	376,107,614	109,849,160
96	NAROK TEACHERS	587,930,577	426,408,234	480,609,502	64,813,921
97	DAIMA	587,702,064	403,318,206	293,979,376	116,831,114
98	MUKI	583,481,752	402,574,126	424,787,727	124,170,939
99	PRIME-TIME	569,990,431	455,547,931	405,989,499	46,753,086
100	AIRPORTS	550,591,313	444,321,386	435,151,961	93,547,546
101	DHABITI	465,989,150	212,267,002	256,157,959	89,152,273
102	KWALE TEACHERS	457,553,538	330,594,065	68,716,697	156,523,521
103	CENTENARY	434,207,337	347,613,382	341,087,834	54,383,314
104	MAGADI	431,325,354	304,939,926	319,184,009	67,659,595
105	NITUNZE	430,467,183	182,136,386	171,881,383	56,761,481
106	THAMANI	427,454,176	242,672,345	233,874,147	82,898,832
107	TARAJI	394,959,409	249,628,357	142,437,705	41,533,217
108	MARSABIT TEACHERS	391,354,788	312,975,736	270,369,276	38,926,419
109	PATNAS	386,160,781	148,858,939	93,010,285	75,757,598
110	NDETIKA RURAL	378,437,768	268,749,348	309,946,598	46,500,386
111	VISION POINT	372,930,027	246,714,659	173,905,924	74,366,694
112	KIMBILO DAIMA	371,066,357	264,059,509	223,011,787	59,970,402
113	MWINGI MWALIMU	370,451,283	258,336,187	284,498,171	71,066,487
114	NAFAKA	370,419,394	258,973,892	314,865,398	64,679,078
115	MMH	321,640,933	198,055,488	228,444,423	61,832,544
116	COUNTY	313,711,124	200,157,108	142,122,189	64,945,909

117	LAINISHA	311,148,805	114,728,089	136,550,892	36,118,142
118	KENYA ACHIEVAS	310,132,321	132,143,972	102,362,885	94,966,896
119	NYAMIRA TEA FARMERS	295,954,410	127,015,413	190,344,865	46,489,079
120	TIMES U	294,393,286	234,997,881	235,693,386	57,065,191
121	JUMUIKA	285,464,131	170,258,234	153,940,147	48,595,560
122	WEVARSITY	271,552,067	181,652,981	222,027,920	53,282,128
123	KONOIN	268,944,558	153,324,712	141,700,630	47,978,609
124	KMFRI	264,520,822	210,919,192	201,247,018	46,438,313
125	PUAN	254,915,072	162,518,780	173,340,183	26,648,091
126	WAKULIMA COMMERCIAL	254,188,122	175,193,316	171,860,289	37,360,813
127	SIRAJI	245,280,275	169,399,352	173,897,202	48,106,828
128	BARAKA	238,297,289	152,551,884	129,524,053	10,107,846
129	SUPA	235,294,331	184,339,323	192,251,195	26,794,767
130	IMENTI	233,895,557	168,513,104	144,542,184	33,835,832
131	NANDI HEKIMA	230,045,652	99,427,688	171,109,239	22,278,855
132	DUMISHA	221,186,935	130,430,290	126,123,433	30,922,232
133	NYALA	216,440,086	156,508,072	125,719,268	40,515,625
134	VISION AFRICA	197,911,158	155,480,990	144,715,918	30,277,919
135	LAMU TEACHERS	194,972,140	113,317,359	91,657,945	36,819,394
136	TENHOS	194,924,687	115,063,737	111,350,461	42,063,624
137	STAKE KENYA	187,948,724	131,511,018	101,727,657	24,100,745
138	JOINAS	177,863,956	131,495,525	139,899,038	21,462,680
139	MUDETE TEA FACTORY	175,866,116	115,805,010	65,646,998	29,678,596
140	NYAMBENE ARIMI	175,013,818	115,396,264	91,753,513	44,669,722
141	NDOSHA	172,072,797	97,002,848	119,325,631	25,919,214
142	SMART CHAMPION	168,719,060	80,891,270	126,841,858	28,933,039
143	WASHA	161,969,095	113,727,362	109,053,223	27,928,721
144	KENYA MIDLAND	154,423,479	90,965,094	124,200,446	34,733,957
145	UFANISI	153,425,587	119,249,584	126,155,637	24,294,551
146	ELGON TEACHERS	152,178,764	105,411,450	84,548,564	22,678,438
147	RACHUONYO TEACHERS	149,701,019	96,950,875	114,081,003	17,536,854
148	SOTICO	135,691,022	91,883,770	96,219,503	21,538,464
149	ENEA	130,146,560	93,535,461	39,102,034	24,684,385
150	LENGO	128,410,393	79,812,392	74,276,878	25,990,296
151	NYAHURURU UMOJA	125,790,259	91,757,805	87,975,748	16,376,640
152	NANDI FARMERS	125,384,530	74,798,842	80,428,892	13,545,625
153	SUBA TEACHERS	123,058,899	102,905,867	77,669,160	15,449,792
154	NANYUKI EQUATOR	119,905,340	30,051,188	69,888,326	16,290,896
155	TRANS-COUNTIES	119,250,577	92,047,766	65,179,381	16,535,489
156	JACARANDA	116,036,479	92,004,278	58,900,580	11,323,493
157	NUFAIKA	110,666,415	84,631,430	80,432,915	18,372,813

158	BARATON	109,725,393	68,471,378	93,109,694	17,152,136
159	FARIJI	107,558,456	66,021,829	84,032,624	31,472,722
160	AGRO-CHEM	102,958,111	70,120,846	81,718,842	15,971,472
161	AINABKOI RURAL	99,684,396	76,714,580	31,709,389	9,780,567
162	ILKISONKO	97,289,267	69,449,867	73,982,457	18,275,504
163	KOLENGE TEA	94,008,220	51,356,423	38,538,659	8,669,163
164	KIPSIGIS EDIS	88,861,494	63,225,224	76,270,222	12,193,210
165	UNI-COUNTY	87,206,374	61,890,610	64,932,049	13,431,472
166	MWIETHERI	71,853,650	50,894,990	31,990,019	9,465,554
167	ALL CHURCHES	65,696,992	44,690,478	43,672,662	9,476,143
168	KATHERA	63,992,202	45,278,369	47,612,174	9,537,929
169	UCHONGAJI	62,958,635	46,971,096	53,744,924	5,864,935
170	KORU	60,648,919	38,895,555	32,589,509	8,421,094
171	GOOD FAITH	59,765,720	53,155,363	49,178,182	10,282,779
172	GASTAMECO	54,889,191	25,722,890	37,791,856	10,156,560
173	KAIMOSI	40,670,382	18,739,885	22,837,364	8,291,923
174	VIHIGA FARMERS COUNTY	35,461,758	18,962,441	14,559,583	11,486,405
175	GOODWAY	33,124,969	17,167,911	25,191,850	6,251,893
176	MILIKI	29,921,786	14,703,190	21,172,231	21,071,475
	TOTALS	**342,847,707,299**	**237,439,941,355**	**251,080,186,023**	**48,219,882,695**

APPENDIX II: EXTRACTS OF LOAN PERFORMANCE SCHEDULE FOR YEARS 2011-2015

	YEAR 2011	**YEAR 2012**	**YEAR 2013**	**YEAR 2014**	**YEAR 2015**
	(KES)	**(KES)**	**(KES)**	**(KES)**	**(KES)**
PERFORM. LOANS	103,543,494,571	135,569,493,664	170,356,230,904	202,950,000,000	226,363,000,000
NON PERFORM. LOANS	12,185,308,345	11,540,001,024	8,901,896,401	13,097,000,000	13,214,000,000
TOTAL GROSS LOANS	125,783,625,291	157,231,271,748	188,596,812,588	228,524,000,000	258,183,000,000

APPENDIX III: EXTRACTS OF CONSOLIDATED BALANCESHEEET YEARS 2011-2015

	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014	YEAR 2015
	(KES)	(KES)	(KES)	(KES)	(KES)
Cash & Cash Equivalent	14,908,356,187	17,724,927,916	24,878,000,000	26,136,000,000	29,330,000,000
Prepayments & Sundry Receivables	8,028,029,923	10,675,365,071	12,417,000,000	18,113,000,000	19,029,000,000
Financial Investments	7,659,625,328	8,121,036,238	6,180,000,000	13,183,000,000	20,585,000,000
Gross Loan Portfolio	125,596,266,019	154,416,602,694	184,538,000,000	223,230,000,000	251,080,000,000
Accounts Receivables	124,962,214	26,932,042	1,826,000,000		
Property,Plant& other Equipment	10,778,550,070	10,941,373,078	11,782,000,000	20,875,000,000	22,824,000,000
Total Assets	**167,095,789,741**	**201,906,237,040**	**241,621,000,000**	**301,537,000,000**	**342,848,000,000**
Total Deposit liabilities	120,339,874,156	146,084,735,714	172,526,000,000	205,974,000,000	237,439,941,355
Creditors& Other Liab.	19,110,446,096	14,839,530,689	19,434,000,000	23,799,000,000	63,660,587
External Borrowing	5,612,072,126	14,119,822,773	4,064,000,000	19,380,000,000	
Total Liabilities	**145,062,392,378**	**175,044,089,176**	**206,025,000,000**	**249,153,000,000**	**301,136,000,000**
Share Capital	6,147,087,161	7,292,311,128	10,664,000,000	16,939,000,000	
Capital grants	109,271,963				
Retained Earnings	5,146,928,347	16,089,864,320	20,525,000,000	26,146,000,000	41,712,000,000
Other Equity Accounts	10,630,109,892	3,479,972,416	4,408,000,000	9,298,000,000	
Total Equity	**22,033,397,363**	**26,862,147,863**	**35,587,000,000**	**52,384,000,000**	**41,712,000,000**
Total Liab.& Equity	**167,095,789,741**	**201,906,237,040**	**241,621,000,000**	**301,537,000,000**	**342,848,000,000**

APPENDIX IV: CLUSTERING OF DTSs BASED ON ORIGINAL COMMON-BONDS IN 2015

Original common-bond	Total Assets-(KES Millions)	Total Deposits-(KES Millions)	Net Loans-(KES Millions)	Members '000'
Government-based	133,390	95,338	102,361	467
Teachers-based	115,591	77,632	83,444	607
Farmer-based	46,736	29,492	29,390	1,658
Private-based	38,780	28,825	29,067	204
Community-based	8,351	6,152	6,817	209
Total	**342,848**	**237,440**	**251,080**	**3,146**

APPENDIX V: EXTRACTS OF COMPREHENSIVE INCOME STATEMENTS YEARS 2011-2015

	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014	YEAR 2015
INCOME	**(KES)**	**(KES)**	**(KES)**	**(KES)**	**(KES)**
Income from Loans	18,049,845,464	23,624,194,521	29,004,000,000	33,057,000,000	41,789,000,000
Income from Investments	628,367,209	1,337,702,192	1,028,000,000	1,092,000,000	1,679,000,000
Other Operating Income	2,669,716,486	2,787,860,888	3,683,000,000	5,190,000,000	4,752,000,000
Total Income	**21,347,929,159**	**27,749,757,600**	**33,715,000,000**	**39,339,000,000**	**48,220,000,000**
EXPENSES					
Expense on Deposits Interest	5,887,784,774	13,685,809,267	15,767,000,000	17,021,000,000	17,985,000,000
External Borrowings Costs	1,895,382,203				
Dividend Payments (on member shares)	739,707,191				
Fees & Commission Expense	42,162,870				
Other Financial Expenses	669,659,304				
Net Financial Income	**12,113,232,817**	**14,063,948,334**	**17,948,000,000**	**22,318,000,000**	**26,492,000,000**

APPENDIX VI: FINANCIAL DATA EXTRACTS ON VARIABLES UNDER STUDY YEARS 2011-2015

	YEAR 2011	**YEAR 2012**	**YEAR 2013**	**YEAR 2014**	**YEAR 2015**
NET INCOME	12,113,232,817	14,063,948,334	17,948,000,000	22,318,000,000	26,492,000,000
TOTAL ASSETS	167,095,789,741	201,906,237,040	241,621,000,000	301,537,000,000	342,848,000,000
R.O.I(ROA=NET INCOME/TOTAL ASETS	**0.072492747**	**0.069655839**	**0.074281623**	**0.074014134**	**0.077270394**
NET LOANS	125,596,266,019	154,416,602,694	184,538,000,000	223,230,000,000	251,080,000,000
NET DEPOSIT LIABILITIES	120,339,874,156	146,084,735,714	172,526,000,000	205,974,000,000	237,439,941,355
FINANCIAL RISKS(1/(NET LOANS/NET DEP LIAB)	**0.958148502**	**0.946042933**	**0.934907715**	**0.922698562**	**0.945674452**
CAPITAL	15,777,038,240	19,569,836,740	24,933,000,000	35,444,000,000	41,712,000,000
TOTAL DEPOSIT LIABILITIES	120,339,874,156	146,084,735,714	172,526,000,000	205,974,000,000	237,439,941,355
CAPITAL ADEQUACY RATIO	**0.131103995**	**0.133962228**	**0.144517348**	**0.172079971**	**0.175673898**
PERFORMING ASSETS	103,543,494,571	135,569,493,664	170,356,230,904	202,950,000,000	226,363,000,000
TOTAL ASSETS	167,095,789,741	201,906,237,040	241,621,000,000	301,537,000,000	342,848,000,000
MANAGEMENT EFFICIENCY MEASURE	**0.619665491**	**0.671447775**	**0.705055566**	**0.673051732**	**0.660243023**
NON-PERFORMING LOANS	12,185,308,345	11,540,001,024	8,901,896,401	13,097,000,000	13,214,000,000
TOTAL GROSS LOANS	125,783,625,291	157,231,271,748	188,596,812,588	228,524,000,000	258,183,000,000
ASSET QUALITY MEASURE	**0.096875156**	**0.073395075**	**0.047200673**	**0.057311267**	**0.051180752**