INFLUENCE OF THE LEVEL OF CAPITAL ADEQUACY ON CREDIT RISK FOR DEPOSIT TAKING SACCOS IN KENYA

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Abstract

This Study aspires to examine how Capital adequacy affects the credit risk profile of deposit taking SACCOs in Kenya. Capital Adequacy Ratio is the proportion of a bank's capital to its Risk Weighted Assets. On the other hand, Credit risk is the probability that counterparty will fail to meet its obligations in accordance with agreed terms. Credit risk is postulated by the level of Non-performing loans to Total assets. A Causal research design was adopted upon a panel of all deposit taking SACCOs in the period 2011-2014. The dependent variable is represented by a change in credit risk, while Capital Adequacy is represented by the level of capital to risk weighted Assets. Descriptive and Regression analysis were used to establish the relationship between the variables. The study found out that Capital adequacy as measured in terms of Capital base to Risk weighted assets, has a negative and statistically significant effect on the level of Credit risk of Deposit taking SACCOs in Kenya.

Key Words: *SACCO-Savings and Credit Cooperative Organization, SASRA-SACCO Society Regulatory Authority, Credit risk, Capital Adequacy, Risk Weighted Asset*

Background of the study

Capital adequacy ratios are a measure of the amount of a financial institution's capital expressed as a percentage of its risk weighted credit exposures. Applying minimum capital adequacy ratios serves to protect depositors and promote the stability and efficiency of the financial system.

Two types of capital are measured - tier one capital which can absorb losses without a bank being required to cease trading, e.g. ordinary share capital, and tier two capital which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors, e.g. Regular debt.

Measuring credit exposures requires adjustments to be made to the amount of assets shown on a bank's balance sheet. The loans a bank has made are weighted, according to their degree of riskiness, e.g. loans to Governments are given a 0 percent weighting whereas loans to members are weighted at 100 percent.

The minimum capital adequacy ratios that apply are:

_ tier one capital to total risk weighted credit exposures to be not less than 4 percent;

_ total capital (tier one plus tier two less certain deductions) to total risk weighted credit exposures to be not less than 8 percent.

Deposits taking SACCOs in Kenya are required to remit quarterly disclosure returns which include a range of financial and prudential information. A key part of these Returns is the disclosure of the SACCO's' "capital adequacy ratios". These ratios are a measure of the amount of a SACCOs's capital in relation to the amount of its credit exposures. They are usually expressed as a percentage, e.g. a capital adequacy ratio of 8 percent means that a SACCO's capital is 8 percent of the size of its credit exposures.

The purpose of having minimum capital adequacy ratios is to ensure that a SACCO can absorb a reasonable level of losses before becoming insolvent, and before depositors funds are lost.

Where as the bigger part of the loan portfolio could be supported by the Deposit base, a risk exposure arises when loans exceed the deposit base without extra security facilities. In such a case the exposure would be mitigated if there is an adequate capital resource to support this exposure. It is within this understanding that a financial institution should have adequate capital resources to meet any credit default incidences as a last recourse and thus mitigate its credit risk exposure.

Statement of the Problem

As noted elsewhere above Deposit taking SACCOs is an emerging Niche of the financial sector in Kenya. Further, prior to the enactment of SACCO ACT 2008, these outfits were operating on a system that was not properly regulated and thus the members deposit base which were advanced to other members in form of loans, was at risk of loss. This is because more often than not the loan advanced to the member of the SACCO was secured against his/her deposits, which in most of cases was less than the loan granted. It means that while the SACCO could offset the loan against the member's deposit the amount granted over & above his or her deposit puts the SACCO in a position where if there arises panic redemption of deposits, then it will not be able to satisfy all its depositors. Capital reserves are intended to come by when such a situation arises and to act as a buffer for deposit refund shortfalls.

This paper aspires to test the claim that an increase or decrease in the level of Capital adequacy influences Credit risk exposure of Deposit taking SACCOs in Kenya.

Research Objective

To determine the effect of Capital adequacy on the credit risk for deposit taking SACCOs in Kenya.

Hypothesis development

H01-The level Capital Adequacy has no effect on Credit risk for deposit taking SACCOs in Kenya.

H11-The level of Capital adequacy affects credit risk in Deposit taking SACCOs in Kenya.

Literature Review

This chapter reviews theoretical foundations that discuss and explain the relationship between Credit risk as a dependent variable on one hand and Capital adequacy as independent variables.

Theoretical Review

This section reviews theoretical foundations upon which this study will be anchored and is presented within a theoretical framework. A theoretical framework consists of concepts, together with their definitions, and existing theory/theories that are used for a particular study (Van Ryan & Heaney, 1992). The study adopted Bank Risk Management Theory. It was developed by David H. Pyle University of California and it was used to study why risk management is needed, and outlines some of the theoretical underpinning of contemporary bank risk management, with an emphasis on market and credit risks. This theory indicates that credit and market risks have an effect directly or indirectly on the banks survival. As applied to this study, this theory holds that researcher would expect the independent variables credit risk indicators to influence or explain the dependent variable which are banks profitability because without effective and efficient credit risk management, banks profitability, liquidity, solvency are unthinkable (David, 1997).

Conceptual Framework

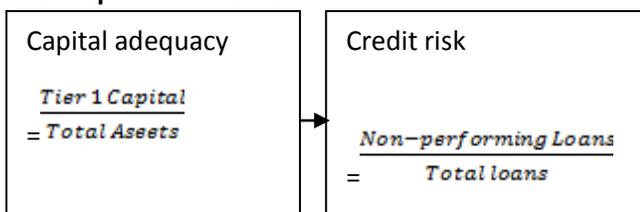| Capital adequacy	Credit risk
$= \dfrac{Tier\ 1\ Capital}{Total\ Assets}$	$= \dfrac{Non-performing\ Loans}{Total\ loans}$

Figure 2.1-Conceptual Framework.

Empirical Review

Deposit taking SACCOs is an emerging niche of the Financial sector in Kenya. With the enactment of SACCO Act, 2008 the Niche now fell under the financial sector regulatory framework. In addition to the Act, itself, there are certain prudential regulations that guide the day to day operations of the sub-sector as it were. These regulations to a major extent, replicate those of main stream financial institutions, mainly regulated by the Central Bank of Kenya. While

This paper dwells on the effects of Capital adequacy on credit risk for Deposit taking SACCOs in Kenya.

Capital Adequacy.

The Capital Adequacy Ratio is the percentage of a bank's capital to its Risk Weighted Assets. Weights are defined by risk-sensitivity ratios whose calculation is dictated under the relevant Accord. Basel II requires that the total capital ratio must be no lower than 8%. Each national regulator normally has a very slightly different way of calculating bank capital, designed to meet the common requirements within their individual national legal framework.

A key part of SACCOs regulation is to make sure that SACCOs operating in the Sub-sector are prudently managed. The aim is to protect the firms themselves, their customers and the economy, by establishing rules to make sure that these institutions hold enough capital to ensure continuation of a safe and efficient market and able to withstand any foreseeable problems.

The main international effort to establish rules around capital requirements has been the Basel

Accords, published by the Basel Committee on Banking Supervision housed at the Bank for International Settlement. This sets a framework on how financial institutions must calculate their Capital. In 1988, the Committee decided to introduce a capital measurement system commonly referred to as Basel1. This framework has been replaced by a significantly more complex capital adequacy framework commonly known as Basel 11. Which was replaced by Basel 111 in 2012? Another term commonly used in the context of the frameworks is Economic Capital, which can be thought of as the capital level bank shareholders would choose in the absence of capital regulation.

The 5 Cs of Credit - Character, Cash Flow, Collateral, Conditions and Capital- have been replaced by one single criterion. While the international standards of bank capital were laid down in the 1988 Basel 1 accord, Basel ii makes significant alterations to the interpretation, if not the calculation, of the capital requirement. In Kenya Deposit taking SACCOs are subject to risk-based capital guidelines issued by SASRA. These guidelines are used to evaluate capital adequacy based primarily on the perceived Credit risk associated with Balance Sheet Assets, as well as certain Off balance exposures . The risk-based capital guidelines are supplemented by a Leverage Ratio requirement. To be adequately capitalized under SASRA definition a SACCO must have regulatory capital of at least Ksh 10 million.

In the Basel11 accord bank capital has been divided into two "tiers", each with some subdivisions.

Tier 1 capital

This consists largely of shareholders' equity and disclosed reserves. This is the amount paid up to originally purchase shares of the SACCO and retained earnings and are now commonly referred to as "Core" Tier 1 capital.

Tier 2.capital

Tier 2 capital, or supplementary capital, comprises undisclosed reserves, revaluation reserves, general provisions.

Boudriga *et al.*(2009) conducted a study on the title "bank specific determinants and the role of the business and the institutional environment on Problem loans in the Middle East and North Africa(MENA) countries" for 2002-2006 periods. The finding revealed that Capital adequacy ratio is positively significant justifying that highly capitalized banks are not under regulatory pressures to reduce their credit risk and take more risks.

Djiogap & Ngomsi (2012) were investigates the determinants of bank long-term loan in the Central African Economic and Monetary Community (CEMAC). They used the panel data of 35 commercial banks from six African countries over the period 2001-2010. They used fixed effect model to examine impact of bank size, GDP growth and capital adequacy ratio on NPLs. The study found negative significant impact of CAR on the level of NPLs. Their finding justifies as more diversified banks and well capitalized banks are better able to withstand potential credit.

Capital adequacy requirement was introduced by Basel committee with intention to reduces or control risk taking by the banks. Commercial banks including Islamic banks are required to follow the capital adequacy ratio which is consisting of TIER 1 and TIER 2 capital. All commercial banks must maintain a minimum total capital of 8% from risk weighted assets (RWA) of the bank (Basel, 2001). Under this framework, TIER 1 must exceed at least 4% of the risk weighted assets and 3% of total assets. In TIER 2, the amount must not exceed the amount of TIER 1. This system therefore requires at least 50% of the amount of total capital to be

supplied by TIER 1 capital. There are mixed result regarding relationship between capital ratios (CAPR) with credit risk. Berger & DeYoung (1997) suggest that capital ratios will have negative relationship with credit risk. Hussain & Hassan (2004), in the context of 11 developing countries have also shown a negative relationship between capital ratio and portfolio risk.

Theoretically, the capital adequacy ratio (CAR) might serve as a tool to control excessive risk taking by banks and to prevent them from being insolvent through recapitalization (Basel accord). Banks with CAR less than the regulatory minimum are forced to adjust their balance sheet to comply with the regulatory requirements either by raising more capital (holding assets constant) or reducing risk-weighted assets (holding capital constant). In fact, raising the level of capital relative to risky assets by either means could have a beneficial impact on the bank performance and soundness (Fries et al., 2002). Indeed, Koehn & Santomero (1980) show theoretically that the portfolio risk increases with the increase of the minimum capital ratio. They state that banks under pressure to increase capital will reach the desired level by increasing the risk of assets.

Empirically, there is no consensus on the relation between capital adequacy and NPLs. On one hand, Sinkey & Greenawalt (1991) show that banks with adequate capital ratio experience lower rates of NPLs. On the other hand, banks with high levels of CARs might be encouraged to embark in riskier activities leading to riskier credit portfolios. Rime (2001) corroborates this argument. He observed a positive relationship between bank risk and capital ratio for a panel of Swiss banks during the period 1989-1995:

Ahmed et al (2011) studied the Islamic banks of Pakistan with a sample of 6 Islamic banks for the time period of 2006 to 2009. The data was collected through secondary sources. Pearson correlation was used to find the relationship between variables and linear regression was used to find the coefficients. The results indicated that the relationship of capital adequacy with credit risk and operational risk is significant and negative. Hussain & Hassan (2004), in the context of 11 developing countries have also shown a negative relationship between capital ratio and portfolio risk. In the European context and especially in Switzerland, Rime (2001) has examined the relationship between regulatory capital and risk-taking by banks. She has concluded that the regulatory pressure has induced Swiss banks to increase their capital levels while keeping stable levels of risk-taking.

Nor & Mohamed (2007) have presented a comparative study of all factors contributing to the credit risks of commercial banks in a multi-country setting: Australia, France, Japan and the U.S. represent developed economy banking systems while emerging ones are represented by India, Korea, Malaysia, Mexico and Thailand. They have found that the regulatory capital is an important factor influencing the credit risk of any banking system that offers a range of services. This study also highlights that the credit risk in emerging economy banks is higher than that in developed economies and that risk is formed by a larger number of bank-specific factors in emerging economies compared to their counterparts in developed economies.

Credit Risk

Credit risk is the risk of loss due to the inability or unwillingness of a counter-party to meet its contractual obligations (Bank of Uganda, 2007). Models proposed by Straka (2000) and Wheaton et al, (2001) have expressed default as the end result of some trigger event, which makes it no longer economically possible for a borrower to continue offsetting a credit obligation. Though there are various definitions of credit risk, one outstanding

concept portrayed by almost every definition is the probability of loss due to default. However, a lot of divergences emerge on defining what default is, as this is mainly dependent on the philosophy and/or data available to each model builder. Liquidation, bankruptcy filing, loan loss (or charge off), nonperforming loans (NPLs) or loan delayed in payment obligation, are mainly used at banks as proxies of default risk (Calcagnini et al., 2009; Maudos and Solis, 2009). According to Ahmed and Nizam (2004), Das and Ghosh (2007), and Al-Smadi (2010), credit risk is a dependent variable and is measured by Non Performing Loans(NPL) as a proxy.

Gatimu and Mukoma (2014) conducted a study by assessing institutional factors contributing to loan defaulting in microfinance institutions in Kenya. The main goal of every microfinance institution (MFI) is to operate profitably in order to maintain its stability and improve growth and sustainability. However, existence of high levels of loan default problem in microfinance industry negatively affect the level of private investment and constrain the scope of microfinance institution credit to borrowers as MFIs have to compensate for loan default/delinquency losses. The success of individual MFIs in credit risk management is largely reflected in the proportion of delinquency's loans to gross lending. Factors such as credit policies, loan recovery procedures, and loan appraisal process are viewed as critical drivers of loan delinquency occurrence; each of these factors significantly affects loan delinquency performance in MFIs in Kenya. The study used primary data. The study target population compromise 59 MFIs registered by Association of Microfinance Institutions of Kenya (AMFIK). A descriptive survey design was used to carry out a census of 59 microfinance institution in Kenya, this is because of the small size population .The data was collected through a structured questionnaire and administered to MFIs loan

officers for response. Multiple regression analysis was used to establish relationship between loan delinquency and credit policies, loan recovery procedures, and initial loan appraisal in MFIs in Kenya. A total of 48 questionnaires were administered of which 45 were adequately respondent to and considered for analysis, this formed 94% response rate. The findings indicated that all the three factors tested had a significant impact on the loan default rate, thus the micro-finance institutions have a cause to worry if they have to reduce the loan default rates by considering the three factors under the study.

Other scholars like Bandyopadhyay (2007) and Avery et al. (2004), have explained credit risk using the creditworthiness parameters like borrower's quality, financial distress and collateral position. They contend that individual borrowers with characteristics such as divorced or separated, having several dependants, with unskilled manual occupation, uneducated, unemployed most of the year; are prone to defaulting on their credit obligations. This is supported by economic theories, most especially the human capital theory which regard education and training as an investment that can increase the scope of gainful employment and improve net productivity of an individual and hence their incomes.

By far the biggest risk facing banks and financial intermediaries remains credit risk- the risk of customer or counterparty to default (Reserve Bank of Australia, 1997). In Uganda, the 1980s and 1990s saw the banking system coming under severe stress where many banks were riddled by high levels of non-performing assets (credit risk) with some banks going insolvent. By 1995 the non performing loans in the banking sector had accumulated to US$34million (Tumusiime, 2005). Moreover Mugume and Ojwiya (2009) indicated that credit risk peaked during the 1990s and early 2000.

Mugume and Ojwiya blame this on the "adverse selection predicament" caused by information asymmetries that makes it hard to select good borrowers from a pool of loan applications.

Research Methodology

This chapter contains the research design that was used to integrate the various components of the study into a coherent form .

Research Design

Causal research design was adopted in this study since the objective is to assess cause and effect relationship. The study elements consisted of a panel of all Deposit taking SACCOs in the period 2011-2014.

Data

The Data supporting this study was derived from the SACCO societies Regulatory Authority (SASRA), and the audited accounts of each Deposit taking SACCO. As observed elsewhere above SASRA is the regulator of this financial sub sector. Besides being in different county settings, these SACCOs are chosen because they operate under different economic activities.

Data Analysis and Econometric model

To test the hypothesis, statistical analyses were carried out using Linear regression method, with the following general model:

$CR,i,t = a,i,t + \Sigma\ CAR\ +e\ i,t$.

Where the i subscript denotes the cross-sectional dimension across SACCOs, t denotes the time dimension, CR is the variable accounting for SACCO's credit risk, CAR is the Capital Adequacy Ratio score and,e, is the random error term. The Model Equation tests if capital adequacy changes, precede variations in credit risk for deposit taking SACCOs in kenya.

Table 1-Two Paired sample test.

Data analysis

This chapter provided a critical analysis of the study findings and results emerging from an interactive process of variables. The study used a comprehensive yearly dataset comprised of SACCO-specific variables that spans the period 2011-2014.

General Information

Findings indicate that all SACCOs under study were licensed by Sasra between the years 2010 to 2014, to conduct the business of Deposit taking as per a new legal framework enshrined in SACCO act 2008. Before this dispensation, virtually all those SACCOs operated unregulated deposit taking business in the name of Front office activity shortened for FOSA. It was not until 2008 that the government of Kenya felt a need to bring in these institutions into a financial system web, in order to control the bonafide members deposits. The date of licensing is critical in the sense that it is from this point onwards that the risk of loss of members deposits was fixed by means of regulatory mechanisms. At the same time, granting of loans to members form the main activity contributing to the SACCO's main stay. The granting of those facilities are secured by the deposit base among other securities. Any misallocation of loans or deposit is manifested in credit risk.

Descriptive Statistical Analysis

(a)- Test for distribution and normality of Variables
The measures of central tendency for the study variables, Credit risk and Capital adequacy were done. The statistical manipulation of collected data for these indicators returned a mean value of 0.064, & 0.0863 for Credit risk and Capital adequacy respectively.

The standard deviation for the variables under study was again, 0.025, and 0.0215 for credit risk, and Capital adequacy respectively.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Credit Risk - Capital Adequacy	-.02197	.0435824	.0043366	-.0305740	-.0133666	-5.066	100	.000

Regression Analysis

The objective of the study was to establish the influence of Capital Adequacy on Credit risk for Deposit taking SACCOs in Kenya.

The study used regression analysis in establishing this relationship. The dependent variable of the study was the Credit risk of the SACCOs, while the independent variable was Capital Adequacy.

The results from the regression analysis are discussed next.

Table 2-Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.823[a]	.677	.670	.0145109	2.116

From the results in Table 2 above, it is clear that the independent variable, i.e, Capital adequacy, explain 67.7% of the variance in Credit risk. The balance of 32.3% is explainable by other factors which are outside the scope of this study.

Durbin-Watson critical value is between 1.5-2.5. So our value of 2.116 shows that, our model is credible and the residuals are not auto-correlated. Our model's Durbin-Watson value is as shown in the table 2:

Test for Autocorrelation of Variables.

The Durbin-Watson test was used to test if the residuals of the models were auto-correlated ("residuals" is the difference between the observed values of the dependent variable and the predicted values).

Auto-correlated residual arises either when the scope of the data is not wide enough to give a valid representation of the overall picture, or the test data is not normally distributed. If the residuals are auto-correlated, this would in effect discredit our test for Heteroscedasticity.

Model Coefficients

Table 4, reveals that the coefficient of Credit risk variable is positive and statistically significant for the panel data estimations. The results seem to suggest that for Deposit taking SACCOs, the intensity of explanatory variables (either positively or negatively) influences, their credit risk exposure. Capital Adequacy has a negative coefficient of -0.422. Further if the independent variables return a value of zero, then Credit risk will be .081. A regression equation can be developed from the Regression coefficient table 3 with the aim of

modeling the effect of explanatory variable upon credit risk. As such therefore, the equation derived from the regression model will take the form of:

CR = 0.081 -0.422CA + e. This equation clearly explains the effect of Explanatory variable under study, on Credit risk of Deposit taking SACCOs in Kenya.

Table 3-Overall Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.081	.011		7.500	.000
	Capital Adequacy	-.422	.096	-.359	-4.416	.000

The outcome of the regression between dependent variable (Credit risk) and Capital adequacy are reported in Table 3.

Test for Heteroscedasticity.

Heteroscedasticity is the circumstance in which the variability of a variable is unequal across the range of values of a second variable that it predicts. The problem of heteroscedasticity can be tested using numerous statistical methods such as White test, Test Park and Test Glejser.

This study employed the SPSS' Glejser test to test for heteroscedasticity and the results were as per table,4.

Table, 4-Test for heteroscedasticity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.022	.006		3.462	.001
	Capital Adequacy	-.113	.057	-.0149	-3.964	.059

Using the SPSS' Glejser test involves running a regression analysis of the independent variables against the absolute residuals from the normal regression analysis. Heteroscedasticity is then tested by checking the p-values of the regression. If any of the p-values corresponding to the different independent variables is less than 0.05, then there

is a problem of heteroscedasticity with that particular variable; conversely if the value sig. is greater than 0.05, then there is no problem of heteroscedasticity.

It can therefore be concluded that the data for this study has no problem of heteroscedasticity and is normally distributed since all the sig. values are greater than 0.05.

Visual representation of the Data on Scatter plots.
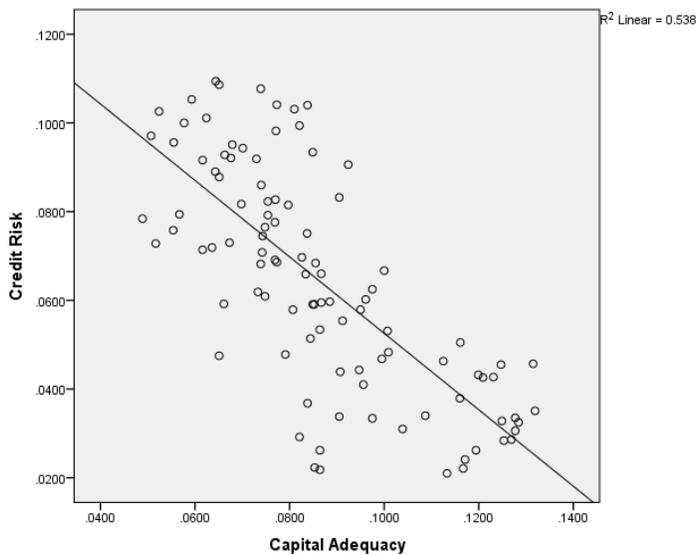
Fig 2: scatter plot, Credit risk vs Capital adequacy

DISCUSSION

The result of each explanatory variable including its impact on the level of Credit risk for the SACCOs under study is discussed here in as follows.

Capital Adequacy.

The objective of the study was to examine the effect of Capital adequacy on credit risk in Deposit taking SACCOs in Kenya.

To achieve this objective, the null hypothesis that, Capital Adequacy has no effect on credit risk of Deposit Taking SACCOs in Kenya, was tested.

According to table 4, the estimated coefficients and test statistics of Capital adequacy was, -0.149 and -3.964 respectively. This reveals Negative and statistically significant impact of Capital adequacy on the levels of Credit risk and implies that for one unit change measured in terms of Capital adequacy, keeping other thing constant result in 0.149 unit change on the level of Credit risk in the opposite direction.

Secondly a Two-paired sample test was carried out on the Credit risk indicator and its findings presented in table 1.The hypothesis was tested by checking whether there exists a significant difference in the quality of paired means between the Capital adequacy and Credit risk. The test returned a P value of Zero (0) implying that there was a very low probability that the observed difference between the Capital adequacy and Credit risk was by chance. The study therefore found a significant difference in the mean responses between Capital adequacy and Credit risk. This led to rejection of the null hypothesis that, Capital Adequacy has no effect on credit risk of Deposit Taking SACCOs in Kenya.

Further, Underpinning the objective, was the need to test existence of any relationship between Capital adequacy and credit risk. Measuring the effect of Capital adequacy upon Credit risk returned a P value of zero (0). A *P* value of Zero is interpreted to mean that there is a very low probability that the established relationship was due to chance. Considering the p value, Capital adequacy, was found to have a significant effect on Credit risk. Consequently, the null hypothesis that the Capital adequacy has no effect on credit risk of Deposit Taking SACCOs in Kenya, was rejected. By extension, rejecting the null hypothesis implies that Capital adequacy affects Credit risk in Deposit taking SACCOs in Kenya. To Support this claim further, Figure 4.1 shows the effect of Capital adequacy on Credit risk for Deposit taking SACCOs in Kenya in a scatter diagram. The scatter diagram depicts a Negative slope which indicates that, the higher the Loan Capital adequacy level, the lower is the credit risk exposure.

The finding revealed that Capital adequacy ratio is negatively significant justifying that highly capitalized banks are not under regulatory

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pressures to reduce their credit risk and take more risks.

The findings are further supported by, Djiogap and Ngomsi (2012) who investigates the determinants of bank long-term loan in the Central African Economic and Monetary Community (CEMAC). They used the panel data of 35 commercial banks from six African countries over the period 2001-2010. They used fixed effect model to examine impact of bank size, GDP growth and capital adequacy ratio on NPLs. The study found negative significant impact of CAR on the level of NPLs. Their finding justifies that, more diversified banks and well capitalized banks are better able to withstand potential credit.

Congruence is also found in the study by Shingjergji (2013), who examined the "impact of bank specific factors on NPLs in Albanian banking system". In the study, Capital adequacy, loan to asset ratio, net interest margin, and return on equity were considered as a determinant factors of NPLs. The study utilized simple regression model for the panel data from 2002 to 2012 period and found out that loan to asset ratio has negative significant effect on NPLs. The study also justified that an increase of the CAR will cause a reduction of the NPLs ratio.

Hussain and Hassan (2004), in the context of 11 developing countries have also shown a negative relationship between capital ratio and portfolio risk.

Still further Ahmed, et al., (2011) state that the credit risk is highly affected by, capital adequacy and debt equity ratios. They also find a negative and statistically significant relationship with credit risk at 0.05 per cent and 0.01 per cent levels respectively.

Summary,Conclusions and Recommendations.

The previous chapter presented descriptive & regressional analysis of the effects of certain SACCO-Specific indicators on the Credit risk of Deposit taking SACCOs in Kenya. The results of the findings and discussion were also made.

This chapter sums up the findings of the study. Accordingly, the first section provides a summarized analysis of the findings; the second section indicates the conclusion, while the third reveals the recommendation arising from the finding. Limitations of the study are in section four and the last section is on direction for further studies.

Summary

The Influence of Capital Adequacy on Credit risk for deposit taking SACCOs in Kenya.

It was noted that capital adequacy which was measured in terms of Tier 1 capital to Risk weighted assets, had a negative and statistically significant influence on credit risk for Deposit taking SACCOS. As noted in the literature, tier one capital is made up of share capital and other institutional reserves that arise from the operating business. When this ratio is high, SACCOs will be disposed towards a risk adverse stance and vice versa. SACCOs that have a low capital adequacy ratio will take a risk seeker stance simply because they will tend to be reckless in their credit risk mitigation processes in return for a bigger but low quality customer base.

Conclusion

This study investigated the influence of Capital Adequacy on Credit risk in deposit taking SACCOs in Kenya. Although several studies on credit risk determinants have been conducted in the past, they are mostly confined to post deterministic factors without considering the antecedent indicators. The unique nature of this Niche of the financial sector, and its role in the country's

financial system provides the rationale for seeking to identify the influence of Capital adequacy, on credit risk for the institutions in this sub-sector. The results of this study reveal that, the Deposit Taking SACCOS in Kenya have significant credit risk as measured by the size of the non-performing loans and that credit risk is determined by capital adequacy, among other factors.

This determinant was tested empirically to reveal its claimed influence.

This study support the findings of Das and Ghosh (2007) that microeconomic determinant affects credit risk in commercial banks holding other macro variables constant.

Recommendations
General

While there have been a number of studies on credit risk, studies on the influence of Capital adequacy on credits risk in the financial sector and particularly in Deposit taking SACCOS have been limited and therefore this study aspired to address this gap .Based on the study findings, and consistent with the available empirical literature, the following recommendations are worth considering.

Capital Adequacy.

The regulatory authority should monitor those Deposit taking SACCOs that operate below the regulatory threshold of 8% and put in place sanctions to be within the minimum capital adequacy. This way and other indicators remaining constant any approaching credit risk cloud would abort before it takes any form.

SACCOs should raise the level of capital relative to risky assets by either raising more capital or reducing risk-weighted assets. The latter option can be accomplished by disposing the bulk of non –core assets .In doing so they increase the weight of the earning assets relative to capital base.

Limitations of Study

This study has generally achieved its objective. However, like other research, this study is also subject to a number of limitations. First, it would be difficult to generalize the findings of the study to the wider financial sector as deposit taking SACCOs is a new niche in the financial sector and hence has immaturity spots. Secondly, Sasra regulates all deposit taking SACCOs and one would expect homogeinty in credit risk management. However there are other factors that are very specific to different sub regions where the SACCOs come from. This is to say that there are some SACCO-Specific factors which were not represented in this study and which could pose some contextual influence on the SACCOs credit risk profile. Finally, while this study has proven the suitability of financial factors to predict credit risks, the role of non-financial factors remains ambiguous. Despite these challenges, the study shed light on some antecedent factors that influence credit risk profile of Deposit taking SACCOs in Kenya.

Suggestions for Further Research

From the analysis of this study, there are interesting opportunities for future research. Such as; it would be interesting to extend the research other SACCO specific factors so that the bigger picture of credit risk influence is captured. Future researchers may also be interested in including other Macroeconomic variables like political influence, competition between other players in the financial sector and the like. Among the limitations was the fact that this financial sector is immature going by the time it fell under competent regulatory framework. On this note it will be necessary to replicate this study after some time and establish the position then. Finally, this study should be compared with findings from other players in the wider financial sector in order to establish the similarities and differences that may be evident as a way of guiding regulatory supervision and policy.

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