

EFFECT OF FINANCIAL RISK ON FINANCIAL PERFORMANCE OF MICRO FINANCE INSTITUTIONS IN KENYA

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ABSTRACT

Financial risk management is at the epicenter of modern management of financial institutions. With the growing number of financial institutions in Kenya being put under receivership owing to serious financial management problems, this study sought to establish the effect of financial risk on financial performance of Micro finance Institutions in Kenya. The study adopted a quantitative research design. The target population were the 13 registered Micro finance institutions as licensed by the Central Bank of Kenya as at 2018. The study was based on secondary data retrieved from the MFIs'

annual financial reports spanning 5 years between 2013 and 2017. The study was based on quantitative data. The study recommends that the micro finance institutions should review their credit rating policies in order to improve the performance and reduce non-performing loans. In addition, to enhance their liquidity position, the micro finance institutions should maintain a sound level of current assets that is able to effectively cover their short-term obligations when they fall due.

Key Words: *financial risk, micro finance institutions, financial performance*

INTRODUCTION

In the epicenter of the modern financial theory we have important ideas that are relevant for managers planning risk management strategies. One such overriding idea is that investors require higher returns to take on higher levels of risk. Investors therefore require risk premium for the risk that they cannot eliminate through diversification. Risk taking is therefore an inherent element of banking and, indeed, profits are in part the reward for successful risk taking in business. Risk is defined as anything that can create hindrances in the way of achievement of certain objectives. It can be because of either internal factors or external factors, depending upon the type of risk that exists within a particular situation. Risk may be often referred as the systematic or unsystematic risk. Systematic risk also referred as un-diversifiable risk or market risk is the risk that is inherent to the entire market or market segment. Unsystematic risk also known as diversifiable risk is the risk which is specific to a firm. Diversifiable risk can be managed through appropriate diversification.

The term financial risk may be used like an umbrella term for multiple types of risk associated with financing, including financial transactions that include company loans in risk of default. Jorion and Khoury (1996) say that financial risk arises from possible losses in financial markets due to movements in financial variables. It is usually associated with leverage with the risk that obligations and liabilities cannot be met with current assets. Our focus in this study will use the term financial risks to broadly cover credit risk, market (price) risk, interest rate risk, liquidity risk and foreign exchange rate risk.

Managing risk is one of the basic tasks to be done, once it has been identified and known. The risk and return are directly related to each other, which means that increasing one will subsequently increase the other and vice versa. The financial risk has three components based

on Balance sheet information as follows (Blach, 2010): Capital structure risk coming up by using debt capital to finance part of company's assets, liquidity risk influenced by the ability of a company to pay its short-term liabilities by using assets that can quickly converted into cash (Current assets); long-term liability risk influenced by the sources of finance used to buy long-term assets (fixed assets) and long-term insolvency risk. The risk is determined through various methods such as: Financial leverage, credit worthiness analysis, econometric models or behavioral models taking into account how the manager's behavior influences the performance by risk assumed (Shapira, 1992). The risk can be computed by different methods most likely used financial ratios (Miles, 2010). The Basel committee defines credit risk as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with the agreed terms. Liquidity Risk arises due to insufficient liquidity for normal operating requirements reducing the ability of banks to meet its liabilities when they fall due. BCBS (2000) defines Foreign exchange settlement risk as the risk of loss when a bank in a foreign exchange transaction pays the currency it sold but does not receive the currency it bought. Foreign exchange settlement failures can arise from counterparty default, operational problems, market liquidity constraints and other factors. Market risk is the risk originating in instruments and assets traded in well-defined markets.

Financial risk management can therefore be defined as a set of financial activities that maximizes the performance of a bank by reducing costs associated with the cash flow volatility. The manager's behavior toward risk (risk appetite and risk aversion) and corporate governance can affect the choice of risk management activities. Iqbal and Mirakhor (2007) notes that a robust risk management framework can help banks to reduce their exposure to risks, and enhance their ability to compete in the market. Today, banks financial risk management is one of the most important key functions in banking operations as commercial banks are in the risk business. Al-Tamimi and Al-Mazrooei (2007) notes that in today's dynamic environment, all banks are exposed to a large number of risks such as credit risk, liquidity risk, foreign exchange rate risk, market risk and interest rate risk, among others – the risks which may create some source of threat for a bank's survival and success.

The financial risk is signified by the failure of financial performance. The fact of increasingly aggressive and dynamic competitive environment, various companies are always experiencing the financial risks from multi-dimensional problems. Corporate incompetence and weakness are mainly caused by lagging and failure of financial risk identification. The financial risk is basically generated in the process of financial activities, accumulation and amplification. This can eventually lead to financial crisis of a company (Ginoglou et al., 2002). Financial risk is the principle of corporate risk and the cyclical manifesting of which is an objective law undecided by will of people (Zhang et al., 2008). Thus, financial risk identification is the key and core of corporate competitiveness.

In addition, Alper and Anbar (2011), concerning bank specific and macroeconomic determinants of commercial bank profitability: empirical evidence from Turkey, found that the interest rate has a significant positive effect on profitability (ROE) and an insignificant positive effect on ROA. This relationship is consistent with the study conducted by Vejzagic

(2014). However, Ramlall (2009) in a study on Taiwanese banking firms using the quarterly categorized financial data of 31 local commercial banks, found a negative impact for real interest rate on bank profitability.

Starting with credit risk, Athanasoglou et al. (2008), on bank-specific, industry-specific and macroeconomic determinants of bank profitability used the GMM technique for a panel of Greek banks covering the period from 1985 to 2001. They found that financial risk in the form of credit risk is a bank specific factor, and that credit risk negatively affects the performance of conventional banks. In addition, Tafri et al. (2009), in their examination of the impact of financial risks on the profitability of Malaysian commercial banks for the period of 1996-2005, using panel data regression analysis of generalized least squares, showed that credit risk has a negative and significant impact on ROA and ROE for both conventional banks and Islamic banks. Qin and Pastory (2012) observed that the level of nonperforming loan has a negative effect on profitability. Dimitropoulos et al. (2010) also found that credit risk has a negative and significant influence on return-earnings. It has been recognized that credit risk has a negative significant effect on both ROA and ROE (Ruziqa, 2013; Tabarin et al., 2013).

Financial risk comprises: credit risk, liquidity risk, interest rate risk and exchange rate risk; all of them contribute to the volatility of financial performance (Dimitropoulos et al., 2010). The credit risk is the core of financial risk that hinders corporate performance mostly in Africa. This risk varies net worth of assets due to the failure of the contractual debt of the counterpart to meet the regulations. Liquidity risk concerns to the inability of the company to reduce its liabilities and increase its assets. Liquidity risk of any company is measured taking the liquid assets over deposits (Al-Khouri, 2011). When corporate borrowing interest rate is greater than the market rate, the company may face interest rate risk. The interest rate factors measure as total loans and deposits (Al-Khouri, 2011).

When a firm fails to manage risk, the risk is high and the profit is low, and when the firm succeeds in managing risk, the risk is low and the profit is high. Similarly, (Boermans 2011), in his study regarding firm performance under financial constraints and risks: recent evidence from microfinance clients in Tanzania has shown a strong negative connection between financial constraints, risk and profits.

STATEMENT OF THE PROBLEM

The recent global financial crisis between mid-2007 and early 2009 revealed the importance of MFIs regulations to hedge against high risks attributed to imbalances in MFIs. René Stulz (2008) argued that there are five ways in which financial risk management systems can break down, all exemplified in the global crisis and other recent ones: failure to use appropriate risk metrics; miss-measurement of known risks; failure to take known risks into account; failure in communicating risks to top management; failure in monitoring and managing risks. (Central Bank Supervision Report, 2015) indicates that many MFIs that collapsed in Kenya in the late 2010's was as a result of the poor management of credit risks which was portrayed in the high levels of non-performing loans. It's important therefore to study how MFIs are

managing the broader financial risk. These studies are limited because they did not look into the effect on the interest rates on the MFIs financial performance and how these changes affect the decision of a person seeking finance. The ongoing shows that there is little study that has been done in Kenya to establish how the broader financial risk management affects the financial performance of MFIs in Kenya. This study therefore sought to assess whether or not risk management was beneficial to MFIs in Kenya. Specifically, the study aimed to empirically analyse the question: Does financial risk management practices have effect in the financial performance of the MFIs in Kenya?

GENERAL OBJECTIVE

The general objective of this study was to establish the effect of financial risk on financial performance of MFIs in Kenya.

THEORETICAL REVIEW

Agency Theory

Agency theory explains the relationship between the principals of the organizations and the operators of the firm. This relationship incorporates partition of possession and control, and administrative inspiration. Agency theory concerns itself mainly in resolving issues that arise in this relationship either due to unaligned goals or because of risk levels of aversion. In corporate risk management issues tend to impact the administration demeanour towards risk taking and hedging (Smith and Stulz, 1985). Agency theory also looks at the interest variations between the owners, administrators and debt holders. Because of variation in profits, management may result in taking too many risks or it may deliberate avoid engaging in projects which may have positive returns (Mayers & Smith, 1987). Therefore, agency theory imply that distinct supporting approaches can have a significant influence on firm value, Stulz (1984) first suggested why it is important for the managers of a firm to take up risk management. He asserts that managers should be working for the shareholders and they are supposed to concern themselves into improving the profitability of the firms and the expected return of the firms' value. For shareholders, good risk management will save them on agency costs because they reduce in variation of returns of their firms.

Stakeholder Theory

Stakeholder theory created by Freeman (1984) as an administrative guide from that point forward it has developed into an instrumental hypothesis which has come to be depended on for administrative utilize. Stakeholder theory urges that the interest of shareholders is the main determinant of corporate policy and procedures in any organization. The main contribution of stakeholder's theory to risk management is the contracts involved in employment ranging from sales to financing (Cornell and Shapiro, 1987). In any business operating environment, consumers will have a trust in the organization which can keep offering them administrations later on henceforth extensively add to the organization's development and esteem However, the estimation of these inalienable cases is regarded to be

exceptionally touchy towards expenses of money related misery and liquidation. Since great corporate hazard administration rehearses prompts to abatement in these normal costs, the organization esteem is likewise anticipated that would rise. Klimczak (2005) Therefore stakeholder theory provides a new insight into possible justification for risk management practices in any organization; however, it has not been tested directly. Along these lines stakeholders gives knowledge into conceivable legitimization for risk management in any organization; in any case it has not been tried specifically. It likewise highlights that littler firms are more inclined to financial issues which ought to drive them to receive a stronger risk management practice.

Stakeholder's theory underlines the requirement for the risk management in insurance companies and its significance in enhancing the value of the organization, but it doesn't show to some degree the impact it has on financial performance of any firm apart from proposing its effect on the organization's development.

Modern Portfolio Theory

Modern portfolio theory (MPT) is a theory of finance that attempts to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully choosing the proportions of various assets. Prior to Markowitz's work, "Portfolio Selection," published in 1952 by the *Journal of Finance*, investors focused on assessing the risks and rewards of individual securities in constructing their portfolios intuitively. Markowitz formalized this intuition. Detailing mathematics of diversification, he proposed that investors focus on selecting portfolios based on those portfolios' overall risk-reward characteristics instead of merely compiling portfolios from securities that each individually has attractive risk-reward characteristics. This means that investors should select portfolios not individual securities. Treating single-period returns for various securities as random variables, we could assign them expected values, standard deviations and correlations. Based on these, we can calculate the expected return and volatility of any portfolio constructed with those securities. We may treat volatility and expected return as proxies for risk and reward. Out of the entire universe of possible portfolios, certain ones will optimally balance risk and reward. These comprise what Markowitz called an efficient frontier of portfolios. An investor should select a portfolio that lies on the efficient frontier.

Tobin (1958) expanded on Markowitz's work by adding a risk-free asset to the analysis. This made it possible to leverage or deleverage portfolios on the efficient frontier. This led to the notions of a super-efficient portfolio and the capital market line. Through leverage, portfolios on the capital market line are able to outperform portfolio on the efficient frontier. Sharpe (1964) formalized the capital asset pricing model (CAPM). This makes strong assumptions that lead to interesting conclusions. Not only does the market portfolio sit on the efficient frontier, but it is actually Tobin's super-efficient portfolio.

According to CAPM, all investors should hold the market portfolio, leveraged or deleveraged with positions in the risk-free asset. CAPM also introduced beta and relates an

asset's expected return to its beta. Portfolio theory provides a context for understanding the interactions of systematic risk and reward. It has shaped how institutional portfolios are managed and motivated the use of passive investment techniques. The mathematics of portfolio theory is used in financial risk management and was a theoretical precursor for today's value-at-risk measures.

Liquidity Preference Theory

Bibow (2005) Keynes describes liquidity preference theory saying that people value money for both the transaction of current business and its use as a store of wealth. Thus, they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution. On the other hand, when interest rates increase, they become willing to hold less money for these purposes in order to secure a profit.

Elgar (1999) One needs money because one has expenditure plans to finance, or is speculating on the future path of the interest rate, or, finally, because one is uncertain about what the future may have in store so it is advisable to hold some fraction of one's resources in the form of pure purchasing power. These motives became known as transactions-, speculative and precautionary motives to demand money. The banks liquidity preference approach suggests that banks pursue active balance sheet policies instead of passively accommodating the demand for credit.

RESEARCH METHODOLOGY

This study adopted a quantitative research design to collect panel data which is time series in nature. The data analysis was done using STATA version 12.1 software. Quantitative data were estimated for all the variables and information was presented in form of tables and graphs. For the purpose of analyzing the relationship between the study variables, the study used correlation and regression analysis. Next, the correlation matrix was computed to verify if any two independent variables have high correlations. If any two variables are highly correlated, then one of the variables with a higher standard deviation was dropped from the regression analysis. The study conducted further inferential data analysis using an ordinary least square regression model. The study utilized the regression analysis with the equation of the form. The model provided a statistical technique for estimating the relationship between the financial risk and the financial performance of the MFIs. The multiple regression model specification was as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y = Financial performance (the dependent variable); X₁ = Credit risk; X₂ = Liquidity risk; X₃ = Interest rate risk; X₄ = Exchange rate risk; β₀ = Constant; β₁ – β₄ = Beta coefficients of the independent variables; ε = Error term

The coefficient of determination (R²) was used to measure the extent to which the variation in financial performance of the MFIs (dependent variable) is explained by the financial risk (independent variable). Further, the t-test with a critical value of 1.96 and a p value of 0.05

was used to test the significance of the study variables. According to Kothari (2004) an independent variable has a significant effect if the t statistics is greater than + or – 1.96 or if the p value is less than 0.05.

RESEARCH FINDINGS AND DISCUSSION

Correlation Analysis

Results of the Pearson’s correlation coefficient (Table 1) depict that there is a significant negative relationship between credit risk and the financial performance of the micro finance institutions ($\rho= 0.764$, $p\text{-value} <0.05$). Therefore, it can be implied that an increase in credit risk is associated with decreased financial performance among the MFIs. The findings also showed that there is a significant negative relationship between interest rate risk and the financial performance of the MFIs ($\rho= 0.661$, $p\text{-value} <0.05$), implying that an increase in interest rate risk is associated with decreased financial performance among the MFIs. However, the findings indicate that there is a significant positive relationship between liquidity risk($\rho=0.682$, $p\text{-value} <0.05$) as well as exchange rate risk($\rho=0.419$, $p\text{-value} <0.05$)and the financial performance of the MFIs, implying that positive changes in the levels of liquidity risk and exchange rate risk are associated with an increased financial performance of the MFIs.

The findings concurred with Qin and Dickson (2012) who also found that credit and interest rate risks were negatively associated with the financial performance of commercial banks in Tanzania while liquidity risk as measured by the ratio of current assets to current liabilities was found to be positively correlated with the financial performance of commercial banks in Tanzania. Similar findings were also reported by Ahmed et al. (2011) in Pakistan and Ayanda et al. (2013) in Nigeria.

Table 1: Correlation Matrix

	ROA	Credit risk	Liquidity risk	Interest rate risk	Exchange rate risk
ROA (r)	1.000				
(p) Sig. (2 tailed)					
Credit risk (r)	0.764*	1.000			
(p) (2 tailed)	0.000				
Liquidity risk (r)	0.682*	0.118	1.000		
(p) Sig. (2 tailed)	0.000	0.207			
Interest rate risk (r)	0.661*	0.342	0.149	1.000	
(p) Sig. (2 tailed)	0.026	0.093	0.241		
Exchange rate risk (r)	0.419*	0.086	0.187	0.272	1.000
(p) Sig. (2 tailed)	0.038	0.315	0.270	0.194	

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

Pearson’s product moment correlation analysis was used to assess the relationship between the study variables.

Regression Analysis

The panel regression analysis was conducted to establish the effect of credit risk on the financial performance. The findings were as shown in Table 2.

Table 2: Panel Regression Analysis

Financial performance	Coef.	Std. Err.	t	P>t
_cons	0.911	2.095	4.23	0.000
Credit risk	0.787	1.515	8.93	0.000
Liquidity risk	0.713	0.113	5.513	
Interest rate risk	0.789	0.144	2.910	
Exchange rate risk	0.513	0.239	3.452	
Source	SS	df	MS	Number of obs =65;
Model	1023.318	4	255.830	F (4, 60) = 24.865
Residual	617.316	60	10.289	Prob > F = 0.000
Total	1640.634	64		R-squared = 0.624
				Adj R-squared = 0.599
				Root MSE = 3.130

The regression results presented in Table 2 show that a unit change in the credit risk would lead to 0.787 change in the financial performance of MFIs and a unit change in liquidity risk would lead to 0.713 increase in financial performance of MFIs. In addition, the study established that a unit change in interest rate risk and exchange rate risk would lead to 0.789 and 0.513 change in the financial performance of MFIs respectively. The coefficients are positive and statistically significant at 5% percent level as signified by p-values of 0.000. The R2 of 0.599 indicate that credit risk, liquidity risk, interest rate risk and exchange rate risk explained 59.9% of the financial performance of MFIs. This is in line with Greuning and Iqbal (2007) define credit risk as the risk of losses caused by the default of borrowers. Default occurs when a borrower cannot meet his financial obligations. Credit risk can alternatively be defined as the risk that a borrower deteriorates in credit quality. Credit risk is managed at both the transaction and portfolio levels. But, institutions increasingly measure and manage the credit risk on a portfolio basis instead of loan-by-loan basis.

DISCUSSION OF FINDINGS

Credit Risk and MFIs’ Financial Performance

The study found that a unit change in the credit risk would lead to 0.787 change in the financial performance of MFIs. The study found out that there was an overall negative change in the credit risk mean values of the MFIs in Kenya over the 5-year period. The steady decrease in the credit risk mean values of the MFIs over the 5-year period indicated that on average the proportion of the MFIs’ total non-performing loans to total loans was on the decline over the 5-year period, implying that the MFIs effectively managed their credit

risk over the 5-year period. Regression analysis results showed a significant negative relationship between credit risk and the MFIs' financial performance, depicting that an increase in the level of credit risk was associated with a decreased financial performance among the MFIs in Kenya. This agreed with Yakup and Asli (2010) who established that currency risk exposures did affect the operations of financial institutions especially when they were involved with foreign clients.

Liquidity Risk and MFIs' Financial Performance

The study found that a unit change in liquidity risk would lead to 0.713 increase in financial performance of MFIs. The study found out that there was an overall positive change in the liquidity risk mean values of the MFIs in Kenya over the 5-year period. The steady increase in the liquidity risk mean values of the MFIs over the 5-year period indicated that on average the proportion of the MFIs' current assets to current liabilities increased over the 5-year period, implying that the MFIs effectively managed their liquidity risk over the 5 year period. Regression analysis results showed a significant positive relationship between liquidity risk and the MFIs' financial performance, implying that an increase in the liquidity position of the firms was associated with an increase in their financial performance. This is in line with Vossenand (2010) who argues that liquidity creation helps customers and companies stay liquid, for companies especially when other forms of financing become difficult. Managing liquidity risk is to ensure the firm's own liquidity so that the firm can continue to serve its function.

Interest Rate Risk and MFIs' Financial Performance

The study found that a unit change in interest rate risk would lead to 0.789 change in the financial performance of MFIs. The study found out that there was an overall negative change in the interest rate risk mean values of the MFIs in Kenya over the 5-year period. The steady decrease in the interest rate risk mean values of the MFIs over the 5-year period indicated that on average the proportion of the MFIs' interest rate sensitive assets to interest rate sensitive liabilities was on the decline over the 5-year period. This implied that the MFIs did not effectively manage their interest rate risk over the 5-year period. Regression analysis results showed a significant negative relationship between interest rate risk and the MFIs' financial performance, depicting that an increase in the level of interest rate risk was associated with a decreased financial performance among the MFIs in Kenya. These findings are in line with Den (2007) who noted that if banks borrow short-term and lend long-term, and if their interest rates are not fully flexible, banks will be exposed to reprising and yield curve risk. In such a case, the negative relationship between short term interest rates and bank profitability has mostly been offered by the literature.

Exchange Rate Risk and MFIs' Financial Performance

The study established that a unit change in exchange rate risk would lead to 0.513 change in the financial performance of MFIs. The study found out that there the exchange rate risk means values of the MFIs in Kenya fluctuated over the 5-year period. The fluctuations in the

exchange rate risk mean values of the MFIs over the 5-year period indicated that on average the MFIs experienced fluctuating changes in their foreign exchange gains and/or losses over the 5-year period. This implied that the MFIs did not effectively manage their exchange rate risk over the 5-year period. Regression analysis results showed a significant positive relationship between exchange rate risk and the MFIs' financial performance, implying that a positive change in the foreign exchange gains over losses would lead to an increase in the financial performance of the MFIs in Kenya. These findings are in line with Rasid et al. (2011) who further revealed that risk analysis of financial statement was allegedly the largest contributor towards risk management while budgeting and strategic planning are indispensable players in managing risk which affect the bank's profitability.

CONCLUSIONS

The steady decrease in the credit risk mean values of the MFIs over the 5-year period and the corresponding increase in the financial performance of the MFIs in Kenya over the same period, the study concludes that credit risk as a financial risk component negatively impacted on the financial performance of the micro finance institutions in Kenya over the 5-year period.

The steady increase in the liquidity risk mean values of the MFIs over the 5-year period and the corresponding increase in the financial performance of the MFIs in Kenya over the same period, the study concludes that liquidity risk as a financial risk component positively impacted on the financial performance of the micro finance institutions in Kenya over the 5-year period.

The steady decrease in the interest rate risk mean values of the MFIs over the 5-year period and the corresponding increase in the financial performance of the MFIs in Kenya over the same period, the study concludes that interest rate risk as a financial risk component negatively impacted on the financial performance of the micro finance institutions in Kenya over the 5-year period.

The significant positive relationship established between exchange rate risk and the financial performance of the MFIs in Kenya, the study concludes that exchange rate risk as a financial risk component positively impacted on the financial performance of the micro finance institutions in Kenya over the 5-year period.

RECOMMENDATIONS

The study recommends there is need for the management of micro finance institutions to control their credit risk, through non-performing loan level as it was revealed that credit risk negatively affect the value of the micro finance institutions in Kenya. Full disclosures of all charges related to credit facilities should be done by the financial institutions to enable Micro finance institutions customers make informed decisions this also includes disclosure on various components that might affect the effective interest rate year to year. Also, the micro finance institutions in Kenya should review their credit rating policies in order to effectively

separate good from bad borrowers so as to reduce their total non-performing loans to total loans ratio to as low as possible as a way of reducing their credit risk levels.

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