THE EFFECT OF MORTGAGE FINANCING ON PROFITABILITY OF MICROFINANCE INSTITUTIONS IN KENYA

SAMUEL KARIUKI WACHIRA

D63/60078/2013

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN FINANCE, UNIVERSITY OF NAIROBI

OCTOBER 2014

ACKNOWLEDGEMENTS

DEDICATION

This research project is dedicated to my parents Mr. and Mrs. Wachira and to my wife Emmah Kariuki, without whose support and guidance, would not have been possible to get this far. They have always loved me and supported my every choice.

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LIST OF ABBREVIATION

ANOVA	:	Analysis of the Variance
AMFI	:	Association of Microfinance Institutions
CBK	:	Central Bank of Kenya
CMA	:	Capital Markets Authority
DTMs	:	Deposit Taking Microfinance Institutions
GDP	:	Gross Domestic Product
MFI	:	Micro Finance Institutions
ROA	:	Return on Assets
ROC	:	Return on Capital
ROE	:	Return on Equity
ROI	:	Return on Investment
ROS	:	Return on Sales

ABSTRACT

Mortgage financing helps in reducing poverty levels and the growth of informal settlements and at the same time offering high opportunity for profitability and growth for financial institutions that have decided to pursue such projects. The majority of microfinance institutions however have not expanded their credit lines and financial products to mortgage financing. Additionally, financial performance of microfinance institutions has not been encouraging despite the fact that international and national development programs have been giving high priority on sustainable microfinance to the poor for many years. Therefore, this study sought to determine the effect of mortgage financing on profitability of microfinance institutions in Kenya. The study adopted a descriptive research design using census approach. The population for the study was all the microfinance institutions in Kenya as at December 31st 2013. Secondary data from financial statements of micro finance institutions offering mortgage financing was collected for five years from 2009 to 2013, on the MFIs profitability and mortgage financing. Multiple regression analysis was used to determine whether the independent variable (mortgage financing) affects the dependent variable (MFIs profitability). The study found that mortgage financing has strong and significant positive effect on MFI profitability. MFIs Liquidity was also found to be a key determinant of MFI profitability and has positive and significant effect on profitability of microfinance institutions in Kenya. Loan portfolio to total assets has weak positive effect of profitability of MFIs. Mortgage financing, liquidity and loan portfolio combined were found to have strong positive relationship with MFI profitability and accounted for 99% of MFI profitability. The study also found that mortgage financing in Kenya is under developed among the MFIs with just a small portions of loans relating to mortgage financing. The study recommends that the MFI management to adopt mortgage financing as a way of increasing the profitability of their MFIs and that the Central Bank of Kenya to develop regulatory framework to assist MFIs in financing and venturing into mortgage financing business.

CHAPTER ONE

INTRODUCTION

1.1   Background of the Study

A mortgage is a transfer of a legal or equitable interest in a specific immovable property for the payment of debt. It is a mortgage is a long term commitment that ties a prospective homeowner down to mortgage repayment for at least twenty years and normally commits one to the lender for minimum of three years or so (Dolde, 2006). It is a transfer of title to real estate which is made to secure the performance of some act such as payment of money by the person making the transfer. Thus the possession of the property remains with the borrower, but the lender gets the full legal title (Broadhurts, 1996).

Mortgage business is perceived to be very risky considering the repayment period and the costs associated with arranging a loan and taking the mortgage as security. Therefore, the lender always seeks to establish the ability of the borrower to service the loan through rigorous vetting process. The lending institution considers the applicant age, personal circumstances and earning capacity of the prospective borrowers in order to calculate the maximum amount to be lent over an agreed period (Ngumo, 2012). The risk involved in mortgage business has made mortgage financing an investment of commercial banks who are better placed to manage the risks (Okwir, 2002) and locking out micro finance institutions from the business and hence the need to encourage MFIs to join the line of business for sustained mortgage industry growth (Maina, 2013).

Mortgage lending returns depend on the perceived riskiness of the mortgage loan; that is the likelihood that the funds will be repaid considered as a function of the credit worthiness of the borrower, that if they are not repaid, the lender will be able to foreclose and recoup some or all of its original capital; and the financial interest rate risk and time delays that may be involved in certain circumstances (Dolde, 2006). To be able to properly finance such contractual agreements, financial institutions need

ready market to provide them with longer term funds that they can in turn use to invest in properties and provide the market with mortgage products. Lack of long term finance will implies that the Institutions will not be in a position to finance construction of new properties and thus the mortgage market will reduce or shrink as the providers of funds will not be in a position to offer the public long term finance if they are unable to access it (CBK, 2010). The issue of funding together with the risk involved could account for poor adoption of mortgage financing by most micro finance institutions.

The Mortgage industry in Kenya has undergone rapid changes in the recent past to become the third most developed in Sub-Saharan Africa with mortgage assets equivalent to 2.5 percent of Kenya's GDP. Only Namibia and South Africa rank higher, with Botswana just slightly smaller (Walley, 2011). A handful of financial institutions have entered the industry including commercial banks and lately entry of various micro finance institutions (Maina, 2013). However, the main factor limiting adoption of mortgage financing by financial institutions is inability by the institutions to adequately management mortgage financing risks (kariuki, 2013). Deficiencies in a lender's ability to capture or understand risks mean that lenders have to charge a high 'risk premium' and hence explaining the high interests in Kenya. This is due to the fact that credit bureaus do not yet offer comprehensive credit histories, there is a high level of informality, and the value of collateral is tempered by deficiencies in the foreclosure process, resale market and the valuation process (Walley, 2011).

The Kenya housing sector has been struggling with shortage in financial investment in the low cost housing sector; this has been magnified by rapid population growth that has not been matched with equitable financial and economic growth. As a result there has been a rapid growth of slums in urban areas in Kenya. The increasing number of people moving from rural areas to urban areas in search of employment has led to life-threatening slum conditions that have arisen in urban areas. The Kenyan government seeks to ensure that it provides a sustainable housing finance system that takes care of all its citizens. Sustainable housing system has been defined as one that is broadly assessable and serves the needs of all consumers at market prices. This can

be achieved if the project is funded profitably by agents better able to bear the risk of a mort-gage loan (Onyango, 2010).

1.1.1 Mortgage Financing

Mortgage financing over the years has been a preserve for housing financing companies and commercial banks but with time, microfinance institutions have started to venture into the mortgage line of business (Ngumo, 2012). An efficient mortgage finance system has significant importance in meeting the housing needs of individuals and in reinforcing the development of the construction, finance and other related sectors of an economy. Evidence suggests that widespread availability of residential mortgages has a favourable impact on poverty alleviation, quality of housing, infrastructure, and urbanization (Erbas and Walley, 2005). Hence the importance of mortgage market cannot be underestimated but annoyingly, mortgage financing has remained under-developed in developing countries (Hahm, 2004).

Mortgage loans are secured by the real property, and provide a schedule of payments of interest and repayment of the principal to a bank. Most mortgage contracts arrange for loans to be fully amortized with adjustable mortgage interest rates and either payment or maturity is fixed for the term of the loan (Mehdian, 2001). Mortgage loans are generally structured as long-term loans, the periodic payments for which are similar to an annuity and calculated according to the time value of money formulae. The most basic arrangement would require a fixed monthly payment over a period of ten to thirty years, depending on local conditions. Over this period the principal component of the loan would be slowly paid down through amortization (Tse, 2002).

Mortgage financing seeks to create revenue for the lender allows qualified individuals and business entities to secure properties that can be repaid in terms that are within the ability of the recipient of the loan to pay off in a timely manner (Okwir, 2002). Changes in mortgage design do not always lead to fundamentally different mortgage instruments. The emergence of a fixed rather than a variable rate mortgage would be an example of a new mortgage instrument (Dolde, 2006).

The increase of mortgage financing in Kenya may have been influenced by factors changing mortgage climate, sustained economic growth, cross-selling potential, profitability and market penetration and liberalizations of market. Kenya's mortgage

market has more than tripled in the past five years. The mortgage market has grown from Kshs.19 billion in 2006 to just over Kshs.61 billion by May-2010 year. This translates to an annual average growth of 34%, indicating an exponential increase in mortgage loans (Government of Kenya, 2007).

Housing has a central importance to quality of life with considerable economic, social, cultural and personal significance. Though a country's national prosperity is usually measured in economic terms, increasing wealth is of diminished value unless all can share its benefits and if the growing wealth is not used to redress growing social deficiencies, one of which is housing. Housing plays a huge role in revitalizing economic growth in any country, with shelter being among key indicators of development (Erguden, 2001).

1.1.2   Profitability

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are many different ways to measure firms' performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. Furthermore, the analyst or investor may wish to look deeper into financial statements and seek out margin growth rates or any declining debt (Mido, 2006).

Quantitative measures of firm performance include profitability measures such as gross margin, net margin for example return on sales, return on equity, economic value added, return on equity less cost of equity, return on capital employed; cash flow measures such as free cash flow over sales; and growth measures such as 1-, 3-, and 5-year historical revenue growth. Ideally, forward-looking measures such as expected profitability, cash flow and growth should be used to measure a firm's performance because the current operating conditions (such as number of hierarchical levels or organization form) will influence future performance (Kumar, 2003).

Management researchers prefer accounting variables as performance measures such as return on equity (ROE), return on investment (ROI), and return on assets (ROA), along with their variability as measures of risk. Earlier studies typically measure accounting rates of return. These include: Return on Investment (ROI), return on capital (ROC), return on assets (ROA) and return on sales (ROS). The idea behind these measures is perhaps to evaluate managerial performance-how well is a firm's management using the assets to generate accounting returns per unit of investment, assets or sales. The problems with these measures are well known. Accounting returns include depreciation and inventory costs and affect the accurate reporting of earnings. Asset values are also recorded historically. Return on equity (ROE) is a frequently used variable in judging top management performance, and for making executive compensation decisions. ROE is defined as net income (income available to common stockholders) divided by stockholders equity. On the other hand, ROA is the most frequently used performance measure in previous studies. It is defined as net income (income available to common stockholders), divided by the book value of total assets (Donaldson & Preston, 1995).

For this study, microfinance institutions return on assets (ROA) which is the ratio of net income after taxes divided by total assets will be used. ROA signifies managerial efficiency in other words it depicts how effective and efficient the management of banks has been as they seek to transform assets into earnings. The higher the ratio, the higher is financial performance. Many researchers have presented ROA as an appropriate measure of profitability (Anthony and Ameyaw, 2010).

1.1.3 Effect of Mortgage Financing on Profitability

Studies have found that mortgage financing is positively related to the profitability. Mortgage credit creates a long term source of revenue for the financial institutions offering mortgage credit (Sharpele, 2000). Mortgage financing also brings other revenue such as facility or negotiation fees and penalties for defaulting or paying before the life of facility comes to end. There is however, need to have an efficient mortgage credit management to minimize the costs involved in loan allocation and the on other hand maximize the returns from such undertakings and thus making the bank more profitable (Vong & Nourzad, 2009).

Microfinance institutions adopt mortgage financing for various reasons such as high interest rates, market penetration and cross selling which are strategies to increase profit. The relationship between mortgage financing and profitability is therefore expected to be positive (Andreas, and Gabrielle, 2011). In Kenya, investment in mortgage financing will lead to higher profitability since the mortgage market in Kenya is the third most developed in Sub-Saharan Africa with mortgage assets equivalent to 2.5 per cent of Kenya's GDP (Walley, 2011). The size and growth of mortgage market has seen growth in profitability of the microfinance institutions that have been offering mortgage credit to Kenyans. Advancing mortgage credit to applicants implies that the MFIs money is tied up somewhere whose payment is in the future and can only happen if financial institutions expect to make profit from the investment (Kariuki, 2013).

1.1.4   Microfinance Institutions in Kenya

Microfinance sector in Kenya is organized into various categories which include regulated MFIs: commercial banks, non-bank financial institutions (Post Bank), transforming MFIs under MFIs Act, non-regulated, credit only MFIs, financial wholesalers, micro-insurance providers and capacity providers/development institutions. There are 50 microfinance institutions in Kenya serving more than 6.5 million people throughout the country. Out of these, eight MFIs are classified as deposit taking microfinance (DTMs) and 42 as retail MFIs (Association of microfinance institutions in Kenya, 2014).

Microfinance institutions in Kenya have ventured into mortgage financing recently starting with Select management services, Jamii bora and Rafiki microfinance. Mortgage financing is an emerging sector in microfinance sector with mortgage products being provided in same terms and flexibility like those of commercial banks. However, the uptake of the business line has been poor with less information being known of profitability effect of the business line (AMFI, 2013).

With the Kenyan government and the Central Bank of Kenya emphasizing financial access as a key to modernizing the economy, the microfinance sector has been strengthened by progressive policies and innovative approaches to delivering financial services. A large deposit base, along with the existence of well-developed MFIs, have

allowed financial and operational expenses to remain relatively low and have led to some of the highest profitability measures in the African region. Innovative forms of microfinance and progressive government policies have helped to make Kenya's microfinance sector one of the most developed in Sub-Saharan Africa. A strong culture of savings has meant that MFI outreach to depositors has far outweighed outreach to borrowers, although overall loan portfolio and total deposits have both increased steadily since 2008. High product-line diversification has allowed MFIs to evolve to meet customer needs, although growth has primarily targeted an urban clientele. Deposits account for nearly 70 percent of the funding base for the sector, with the savings of micro depositors contributing the majority of these funds (Kimando, 2012).

Microfinance industry plays an important role in the financial system in Kenya. Its growing importance undoubtedly requires prudent financial management for sustainability. MFIs in Kenya have continued to experience steady increase in both loan portfolio and total deposits. MFIs target low income earners through innovative approaches which include group lending, progressive lending, regular repayment schedules, and collateral substitutes. The Kenyan financial system is comprised of forty four licensed commercial banks, one mortgage finance institution and several microfinance institutions (Central bank of Kenya, 2011).

1.2 Research Problem

Mortgage financing reduces poverty levels and at the same time offer higher opportunity for profitability and growth for financial institutions that have decided to pursue such projects. The majority of microfinance institutions however have not expanded their credit lines and financial products in financing housing for mortgage to all income classes (CBK, 2011). To encourage the move, the government has placed incentives such as tax relief and preferential treatment for the institutions offering low-cost financing for the development of cheaper housing but has yet to receive substantial support from the financial institutions (Onyango, 2010).

The financial performance of microfinance institutions has not been encouraging despite the fact that international and national development programs have been

giving high priority on sustainable microfinance to the poor for many years (Kimando, Kihoro, & Njogu, 2012). Microfinance institutions which have invested on mortgage financing include Select management services, Faulu Kenya, Jamii bora and Rafiki microfinance (AMFI, 2013). The mortgage market in Kenya has also been drastically growing in the recent past with greater proportion of the new housing stock that came to market in 2011 being at 38 per cent of new builds, compared with 34 per cent in 2010. The market has increased from 7600 homes in 2006 to 20,000 homes in 2012 with high interests interest rates has slowed mortgage uptake by more than the entire house price boom and tripling in house prices (Kariuki, 2013). Could MFIs performance be improved by investment in mortgage financing considering the growth potential of mortgage market?

Various studies have been done separately on microfinance and mortgage financing. Kimando et al (2012) studied the factors influencing the sustainability of micro-finance institutions in Murang'a Municipality. The study found out that lending to individual clients contributed to higher repayment which is necessary for the profitability of the MFIs. Ngumo (2012) studied the effect of interest rates on the financial performance of firms offering mortgages in Kenya. The study found that the amount of mortgage advanced by mortgage firms led to a high financial performance and raised the institutions revenue. Murugu (2003) undertook a study on the perceived quality of service in the mortgage sector. The study found that Commercial Banks in Kenya offered quality mortgage products as perceived by the customer. Ndirangu (2004) studied the effect of types of mortgages on financial performance of the mortgage institutions in Kenya his study revealed that adopting different types of mortgage positively affect the financial performance of mortgage institutions in Kenya.

None of these studies reviewed the effect on mortgage financing on profitability of microfinance institutions. Therefore, this study bridged this gap and provided evidence that could further promote financial performance of microfinance institutions. It sought to answer the question; what is the effect of mortgage financing on microfinance institutions profitability?

1.3   Objective of the Study

To determine the effect of mortgage financing on profitability of microfinance institutions in Kenya.

1.4   Value of the Study

This study is of great benefit to MFIs and financial institutions at large in Kenya since it had outlined the effect of mortgage financing on profitability of microfinance sector. The MFI financial performance depends on several factors of which mortgage financing plays a major role in the growth of the industry. This study has ascertained the benefits of mortgage financing to microfinance institutions in Kenya. This will help in developing more innovative strategies of financing mortgages to enhance MFIs profitability.

The study is also of significant to the government and policy makers in developing policy pertaining to mortgage financing in that it has provided key insights on areas of policy concern so as to boost MFIs sustainability. It is also of significant to the researchers and scholars as it will form basis of reference for future studies and has contributed to the existing body of knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1   Introduction

This chapter reviews literature in line with the study objectives which is to examine the effect of mortgage financing on financial performance of microfinance institutions in Kenya. Chapter has sections 2.2 on theoretical review, 2.3 on empirical review and section 2.4 on chapter summary.

2.2   Theoretical Review

The study was guided by the following theories; title theory, welfare theory and mortgage value theory which states how financial institutions makes strategic business decision on mortgage financing.

2.2.1   Title and Lien Theory

The theory was propounded by Werner (1988) and states that mortgagors only hold an equitable interest in the mortgaged property. The mortgagor is left with an equity of redemption, but legal title revests in the mortgagor on payment of the debt. The mortgagee has title, the right to possession, and absolute ownership rights in the mortgaged property. However, the mortgagor remains in possession, even though the mortgagee has all the incidents of ownership. Although the mortgagee has the right of possession to the property, there is generally an express agreement giving the right of possession to the mortgagor. The mortgagee is said to hold the title for security purposes only. The mortgagor is given the right of possession (Buckley and Kalarickal, 2004). In title-theory states, a mortgage continues to be a conveyance of legal title to secure a debt, while the mortgagor still retains equitable title.

In lien theory, mortgages and deeds of trust have been redesigned so that they impose a non-possessory lien on the title to the mortgaged property, while the mortgagor still holds both legal and equitable title. In a Lien situation, the deed stays with the borrower (mortgagor), and the lender (mortgagee) places a lien on the property using the mortgage instrument. Generally, foreclosure in title theory occurs through a non-

judicial proceeding, while Lien situations are conducted via judicial methods; it varies with each state.

This theory implies that mortgage financing is not very expensive line of business as perceived since the title of the acquired property through mortgage financing does not transfer the rights to the borrower. The borrower only maintains the occupancy but the rights to the property remains with the lender and hence managing the risk associated with mortgage financing.

2.2.2 Welfare Theory of Microfinance

The theory was proposed by welfare economist Kenneth (1951). Welfare theory views microfinance institutions as existing to take part in social well being of their customers that include poverty reduction and provision of mortgage financing to ensure quality housing for the society (Brau and Woller, 2004). Therefore, welfare theory views microfinance institutions as established mainly to reduce poverty for which they should give higher priority; one of the ways to achieve this is to provide affordable mortgage to the poor. Ganka (2010) asserts that MFIs should be, as far as possible, able provide to the financial needs of many poor clients as possible regardless of their profitability. The deficit in operations should be filled with donor and government support or social investors (Woller et al., 1999).

It is from the welfare perspective of MFIs that many groups especially non-governmental organizations (NGOs) argue about the existence of trade-off between MFI profitability and services provided because some of the services may not be profitable to provide to the poor which calls for continued dependence on donations (Paxton, 2002).

The proponents of poverty lending evaluate sustainability of MFIs based on MFIs contribution to social welfare of the poor. Morduch (2000) argued that MFIs can achieve profitability and continued operations without achieving self-sufficiency regardless of donor support or not. They support their argument by considering any subsidy to or finance injected in MFIs as equity invested by social investors who may not necessarily mean to make profit but to have social impact. Those who oppose commercialization of MFIs fear that along with the drive towards profitability, the poorest clients will not qualify for loans anymore. Value assumptions explicit in the

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social welfare function used and implicit in the efficiency criterion chosen tend to make welfare economics a normative and perhaps subjective field. This can make it controversial.

2.2.3 Mortgage Value Theory

The theory was proposed by Greenblatt (1989). The theory views MFIs primary objective as that of maximization of expected profits under the constraints of liquidity, soundness, standing and lawfulness. Therefore micro finance institutions adopting mortgage financing should do so in attempt to maximize their profits (Glenn and Wayne, 2007). The mortgage value theory requires MFIs to take invest in mortgage financing only where the investment would lead to improved financial performance and that enables the firms to make strategic and tactical decisions based on future profitability (Doling, 1997). The theory contradicts the welfare theory which argues that MFIs should engage in projects which will lead to reduction of poverty irrespective of the same being profitable.

2.3 Determinants of Microfinance Institutions Performance

Numerous factors affect the performances of microfinance institutions as identified in literature. These factors can either be internal, that is, within the control of management of MFI or external factors which are outside the control of the management. The factors within the control of management are usually MFI specific while external factors are market related.

2.3.1 Mortgage Financing

Mortgage by their nature are long term investments that will involve credit agreements spanning from 5 years to 30 years. To be able to properly finance such contractual agreements, Mortgage Finance Institutions need ready market to provide them with longer term funds that they can in turn use to invest in properties and provide the market with mortgage products. Lack of long –term finance will implies that the Institutions will not be in a position to finance construction of new properties and thus the mortgage market will reduce or shrink as the providers of funds will not be in a position to offer the public long term finance if they are unable to access it (CBK, 2010).

Mortgage contracts attract fees and costs that are levied on the mortgage that increase the cost of procurement. Such costs include; legal fees. stamp duty, arrangement fees, valuation fees, mortgage protection policy all of which add to increase the cost of mortgage and this pushes the costs of mortgages out of reach from most individuals as one not only has to bear in mind the cost of the property but also consider the additional costs which on average amount to 10% of the property value.

2.3.2 Liquidity

Microfinance institution's liquidity is the ability of the firm to meet its financial obligations when they come due without incurring unacceptable losses of business. An MFI without adequate liquidity may not invest much in mortgage financing and an institution has to consider the long term liquidity since mortgage financing involve long term commitment and affects long term liquidity of the firm (Ngumo, 2012). San and Heng (2013) found that liquidity issue was a serious factor that had a significant impact on the performance of commercial banks.

Managing liquidity is a daily process requiring bankers to monitor and project cash flows to ensure adequate liquidity is maintained. Maintaining a balance between short-term assets and short-term liabilities is critical. For an individual MFIs, clients' deposits are its primary liabilities (in the sense that the bank is meant to give back all client deposits on demand), whereas reserves and loans are its primary assets (in the sense that these loans are owed to the bank, not by the bank) (Tse, 2002). The investment portfolio represents a smaller portion of assets, and serves as the primary source of liquidity. Investment securities can be liquidated to satisfy deposit withdrawals and increased loan demand. Financial institutions have several additional options for generating liquidity, such as selling loans, borrowing from other banks, borrowing from the central bank, and raising additional capital. In a worst-case scenario, depositors may demand their funds when the bank is unable to generate adequate cash without incurring substantial financial losses (Dolde, 2006).

2.3.3   Size

The size of a firm plays an important role in determining the kind of relationship the firm enjoys within and outside its operating environment and hence profitability. The larger a firm is, the greater the influence it has on its stakeholders and hence the likely profitability. Bhayani, (2010) argue that size of financial institution will determine the amount invested in loans and mortgage financing level and overall profitability of the firm. In this study, the firm will be measured by number of branches and used as a control variable.

2.3.4   Age

Muriu (2011) indicate that older institutions perform worse which imply that the new entrants into the market are better able to pursue new profit opportunities. Moreover, newer institutions appear to enjoy more autonomy in their decision-making, and are more willing to innovate. Studies indicate that an institution's age is significant and positively linked to financial performance (Bhayani, 2010). Muriu (2011) found that the magnitude of MFI profitability is very sensitive to MFI age.

2.3.5   Quality of Loan Portfolio

Empirical evidence on the impact of quality of loan portfolio on profitability indicates that credit risk is a significant determinant of performance (Muriu, 2011). Additionally (Dolde, 2006) found statistically significant impact of loan loss reserves to loans on profitability, which implies that financial institutions can reduce the variability of reported income by making higher provisions than necessary when credit quality and net income are high, during favourable economic conditions. The quality of loan portfolio is also dependent on existing macroeconomic environment. Empirical evidence suggests that better mcroeconomic environment will have a positive impact on net interest margins. MFIs operating in countries with better protection of property rights are also able to reach more borrowers.

2.4   Empirical Review

This section reviews the local and international studies on microfinance institution performance and mortgage financing. The studies have been discussed in relation to the methodology adopted, the findings and the conclusions of the study.

2.4.1   International Evidence

Fang (2004) conducted a study on the relationship between home mortgage loan and real estate market in China and their effect on banks financial performance. The study sought to analyze the correlation between the development of real-estate market and home finance and their effect on banks financial performance. The study found that although residents' sustainable income, macroeconomic factors were all the reasons for the development of the China's real estate market, but the mortgage could not be ignored which is also an important factor for rising home prices, and at different times, different regions show different characteristics. The study found that in the short term, the function of mortgage was more apparent in promoting house prices. While the real estate market in a region or city getting gradually mature, the effect of mortgage on the house prices tends to be less evident, but it remains an important factor that cannot be ignored. The study further revealed that both real estate financing and mortgage had positive effects on the banks on the banks profitability.

Tsatsaronis and Zhu (2004) studied the drivers of housing price dynamics using cross country evidence. The study found positive relationship between mortgage credit and banks performance. The study recognized the importance of mortgage credit on banks financial performance in 17 countries, where the analysis finds that fundamentals relating to mortgage finance, including bank credit and the real interest rate, explain approximately one-third of the long run variation in house prices and banks performance.

Glenn and Wayne (2007) carried out a study on the community reinvestment Act and the profitability of mortgage-oriented banking. They analyzed their data using regression analysis, where they found that there existed a positive relationship between home purchase lending in lower income neighbourhoods and profitability; they also found that lenders active in lower-income neighbourhoods and with lower-income borrowers appear to be as profitable as other home purchase lenders. Their

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study also revealed that there was no compelling evidence of lower profitability at commercial banks that specialize in home purchase lending in lower income neighbourhoods or to lower-income borrowers.

Muriu (2011) studied microfinance institutions profitability in United States and with a main focus on Africa. The study found that unique line of business adopted by microfinance institution including mortgage financing affected profitability. Further, proportionally higher deposit as a percentage of total assets was associated with improved profitability. However, the magnitude of this effect was very sensitive to MFI age. Institutional environment of the host economy also played a major role in MFIs profitability and that the young MFIs suffer more from political instability and weak enhancement of the rule of law, which was consistent with accumulation of information capital and relationship lending. The quality of contract enforcement on mortgages, loans and overall political stability in the country affected the extent of moral hazard that MFIs face when making loans.

San and Heng (2013) studied the factors affecting the profitability of Malaysian Commercial banks. The study found that financial institutions investment patterns on mortgages and long term loan portfolio depended on their liquidity levels. The study noted that liquidity concerns among financial institutions caused liquidity risk which arose from the possible inability of a bank to accommodate increase in long term assets, since it becomes hard to raise funds for increasing demand for loans. The study concluded that Liquidity risk was a serious factor that had a significant impact on the performance of commercial banks. The study also found that mortgage financing affected commercial banks loan loss provision to total loans which was an indicator of asset quality held by the financial institutions. An increase in loan loss provision ultimately had a negative impact of profitability, and hence an increase in credit risk.

2.4.1 Local Evidence

Murugu (2003) carried out a study on perceived quality of service in the mortgage sector. In his study it was found that Commercial Banks in Kenya offered quality mortgage products as perceived by the customer. Ndirangu (2004) studied the effect of types of mortgages on financial performance of mortgage institutions in Kenya. The study revealed that adopting different types of mortgage positively affect the

financial performance of mortgage institutions in Kenya. The study further found that the growth rates of banks ranged between 40-50% in 1990 to 70% in 2004. This was linked to mortgage firms' ability to match services to the need of the customers which generated adequate risk-adjusted returns, besides being influenced by the overall growth in the mortgage finance market. Nkirote (2004) did a study on environmental challenges and the strategic responses in the mortgage industry in Kenya, his study found that that there was stiff competition in the industry , the study also found that mortgage firms were responsive to environmental challenges by having produced tailored to suit their clients.

Mutero (2007) did a study on access to housing finance in Africa, exploring the issues, he found that that Kenya has a well-developed and regulated financial system and, in recent years, the mortgage finance sector has become competitive and innovative, this sector serves only those households at the top of the income pyramid. Mutero (2007) recommends that there was need to assess the effects of mortgage financing on financial performance in commercial banks in Kenya.

Ndungu (2010) studied survey of mortgage financing by commercial banks in Kenya. The study found that Kenya's mortgage market had been growing with the industry being dominated by commercial banks indicating barriers to entry or high risk for medium and smaller banks. The study further found that the growth rates of small sized banks had been the fastest, with a growth rate of 38% on average, followed by medium banks which are growing at 25% on average with large banks closely following at 24% on average.

Kimando et al. (2012) studied the factors influencing the sustainability of microfinance institutions in Murang'a Municipality. The study found that the challenges that were experienced in running the microfinance institutions were non-payment of loan by the customers, interest rate risk, poor management of the institutions, so much borrowing from the customers and also government policies, which sometimes posed a very great challenge to the institutions. The study concluded that the repayment rate from the credit offered that is, clients paying back loan on time, also ensured profitability of microfinance institutions. Lending to

individual clients was found to contribute to higher repayment which is necessary for the sustainability of the MFIs.

Ngumo (2012) studied the effect of interest rates on the financial performance of firms offering mortgages in Kenya. The study adopted a survey research design and targeted all organizations registered for mortgage lending as of 31st December 2011 which were 33. The study used secondary data sources from CMA library and Central Bank of Kenya which was analyzed using multiple linear regression analysis conducted at 95% confidence level. The study established a positive relationship between financial performance and the amount of mortgage loans advanced. The study recommended that mortgage firms in Kenya to charge interest rates on the mortgage appropriately as ineffective interest rate policy raised the cost of mortgage borrowing, negate its demand thus lowers financial performance.

Juma (2012) investigated the factors inf1uencing mortgage uptake Kenya using a case of housing finance. The study revealed that laws and institutions that are created to stimulate financial development and centralized/powerful governments which are incompatible with financial development affect mortgage financing in Kenya. The study concluded that interest rate setting on mortgage debt; government instruments and fiscal measures were the major policies that governed mortgage financing. The study concluded that policies in mortgage financing facilitated smooth completion of property transactions and foreclosures.

Okelo (2013) studied response strategies to the changes in interest rates by institutions in the mortgage industry in Kenya using secondary data obtained mainly from existing publications by such institutions as well as the Central Bank of Kenya. The study found out that interest rate was a key concern for most institutions within the mortgage industry and actually had a direct impact on the firm's strategies. Interest rates on mortgages were found to be generally increasing over the study period. Increased interest rates had the greatest impact on default rate and attrition rates than on profitability, market share and reputation. Reduced interest rates, on the other hand, had considerable impact on the loan book and profitability as per the findings of the study.

2.5   Summary of Literature Review

Theories reviewed provide contradicting arguments where the welfare theory requires MFIs to undertake projects aimed at reducing poverty and solving social problems. Therefore, MFIs should invest in mortgage financing either being profitable or not. However, the mortgage value theory requires MFIs to invest in mortgage financing only if the segment is profitable. Due to the risks associated with mortgage financing and capital requirements, many MFIs have been reluctant to join the mortgage industry. What remains unknown is whether adoption of mortgage financing will lead to increased MFIs profitable.

Mortgage financing is important to financial performance of microfinance institutions from increased revenues streams. However, no known local study has been conducted to establish the relationship between mortgage financing and profitability of microfinance institutions Kenya, hence the research gap. Internationally, Fang (2004) found that both real estate financing and mortgage had positive effects on the banks on the banks profitability. Tsatsaronis and Zhu (2004) also recognized the importance of mortgage credit on banks financial performance the study found that mortgage finance, including bank credit and the real interest rate, explained approximately one-third of the long run variation in house prices and banks performance. All the studies reviewed both locally and internationally had only reviewed the mortgage financing in relation to commercial banks and leaving out other financial institutions like micro finance institutions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was adopted in carrying out the study. It has section 3.2 which discusses research design, section 3.3 on study population, 3.4 on sampling frame and techniques, 3.5 on data collection and 3.6 on data analysis.

3.2 Research Design

The study adopted a descriptive research design using census approach. Descriptive research design enables the researcher to define clearly what he/she wants to measure and can also be used to establish the relationship between variables (Kothari, 2008). This design was ideal for the study as it aimed at identifying possible effect of mortgage financing on profitability of microfinance institutions by establishing the relationships between the two variables (Mugenda and Mugenda, 2003). The study also necessitated the use of cross-sectional time-series data set (or panel data) in which the mortgage financing and profitability was assessed over period of time.

3.3 Population

The population for this study was all the microfinance institutions in Kenya as at December 31st 2013 (Appendix 1). The population in the study comprised of all MFIs classified as retail and DTMs in Kenya who are members of the Association of Microfinance Institutions. The total number of retail MFIs and DTMs registered with AMFI was 50 as at 31st December, 2013 (AMFI, 2014). All the 50 MFI in Kenya were studied. Mugenda and Mugenda, (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.

3.4 Data Collection

Secondary data from financial statements of micro finance institutions offering mortgage financing was collected. The study collected secondary data for five years from 2009 to 2013, on the MFIs profitability and mortgage financing. The data obtained from the MFIs published financial reports from AMFI annual reports, Central Bank of Kenya annual and market mix information.

3.5 Data Analysis

Data collected was checked for completeness after which it was grouped into various categories for easy analysis. Statistical Package for Social Sciences (SPSS) software was used to apply multiple regression analysis in the analysis of primary data to establish a causal effect relating independent variable to the dependent variable. The data was presented in tables, charts and graphs.

3.5.1 Analytical Model

Multiple regression analysis was used to determine whether the independent variable (mortgage financing) affects the dependent variable (MFIs Profitability). The independent variables in model below were individually regressed with profitability and jointly to get the exact effect of each variable. To achieve the overall study objective, the following regression model was be used:

$Ys = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Ys = Profitability as measured by return on assets

β_0 = Constant (coefficient of intercept)

X_1 = Mortgage financing as measured by a percentage of mortgage advances to total assets

X_2 = Liquidity of MFI as measured by ratio of Deposits to total assets

X_3 = Size of MFI as measured as a percentage of total loans advanced to total assets

B1… B4 = regression coefficient of four variables

ε = Error term which will be assumed to be zero for this study

3.6.2 Test of Significance

Inferential statistics was used to test the significance of the relationship between the dependent and independent variables. Such techniques included analysis of variance (ANOVA) which the Researcher used to test the significance of the overall model at 95% level of significance. Coefficient of correlation (R) was used to determine the magnitude of the relationship between the dependent and independent variables. Coefficient of determination (R^2) was used to show the percentage for which each independent variable and all independent variables combined were explaining the change in the dependent variable.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.0   Introduction

The results and findings of the study were based on the research objectives. The section links the various variables included in the model and aims at establishing the relationship between mortgage financing and profitability of microfinance institutions in Kenya. This chapter presents the data analysis, interpretation and discussion. Data was collected from secondary sources and analysis done through SPSS version 21. Frequencies, percentages and mean were used to display the results which were presented in tables and graphs.

4.2   Descriptive Statistics

Descriptive statistics summarises the observations made after data analysis.

4.2.1   Microfinance Loan Portfolio

As shown in figure 4.1 below, wide range of loans offered relate to business financing with 75.98%, consumption with 14.82%, agriculture 3.58%, emergency 5.03%, asset finance 0.56% and mortgage financing 0.05%. From the figure, it is clear that mortgage financing is lowest financed taking 0.05% of total microfinance institutions loan portfolio. This indicates the under development in mortgage among the microfinance.

Figure 4.1: Microfinance Average Loan Portfolio

Microfinance Loans Portfolio
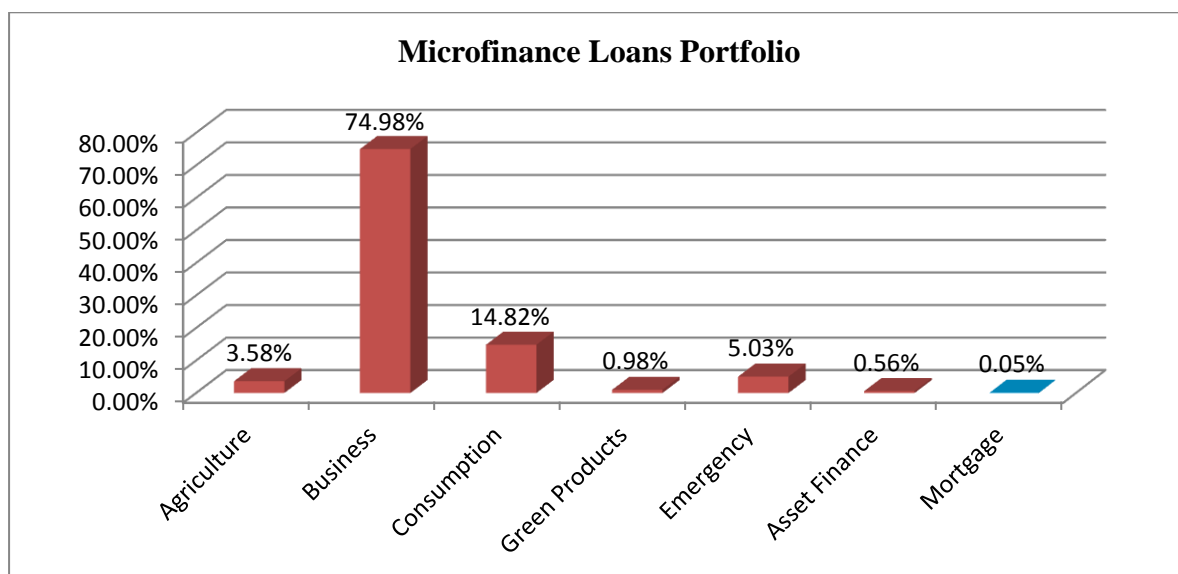
Source: Research Findings

4.2.2 Microfinance Lending Behaviour

MFI lending is usually associated with group lending with critics feeling that mortgage financing is likely not to develop among MFIs since it does not relate to group lending and hence has higher risk. However, as shown in figure 4.2 below, 51% of total lending on MFIs on average relate to individuals while 49% were group lending. This shows the changing trend in MFIs lending habits where more MFIs are lending to individuals as opposed to group.

Figure 4.2: Microfinance Institutions Lending Habits

MFIs Lending Habits
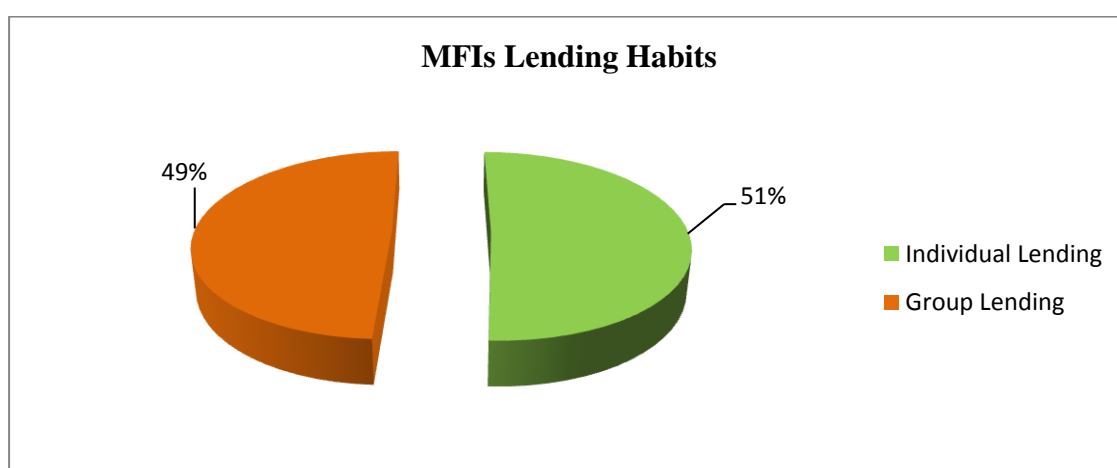
Source: Research Findings

4.2.3 Differences between Microfinance and Commercial banks Mortgage Financing

In attempt to understand the reasons for differences on adoption of mortgage financing and MFIs, the average terms are highlighted in table 4.1 below. As shown in the table below, there are significant differences between commercial banks mortgage financing terms and those of MFIs. The table shows that the average MFIs mortgage flat interest rates are 24% for MFIs and 18% for commercial banks, reducing rates are 20% for MFIs and 25% for commercial banks. On average, MFIs charge a 3% fees on mortgage loans while banks do not charge the fee. On mortgage repayment period, MFIs have maximum repayment period of 120 months and commercial banks 240 months. MFIs mortgage financing range from Ksh. 100,000 to Ksh. 7,500,000 while commercial banks minimum limit is Ksh. 300,000 with no maximum. The low limit of amount of mortgage financing per applicant can be explained by the low income target customers while the higher limit can be explained by need to minimize credit risk and lack of adequate liquidity.

Table 4.1: Differences between Microfinance and Commercial banks Mortgage Financing

	Flat Interest rate	Reducing balance rate	Fees	Max Term	Amount Advanced
MFIs mortgage Financing	24%	20%	3%	120	100, 000 to 7, 500,000
Commercial Banks Mortgage Financing	18%	25%	0	240	Min Ksh. 300,000

Source: Research Findings

4.2.4 Microfinance Institutions Profitability

As shown in figure 4.3 below, the five years average microfinance institutions profitability was as high as 37.2% and to the minimum of -28.4%. The figure shows that microfinance industry profitability remains volatile and low. Overall five years

average industry profitability was found to be -3.7915% implies the continued poor performance of MFIs.

Figure 4.3: Microfinance Institutions Average ROA
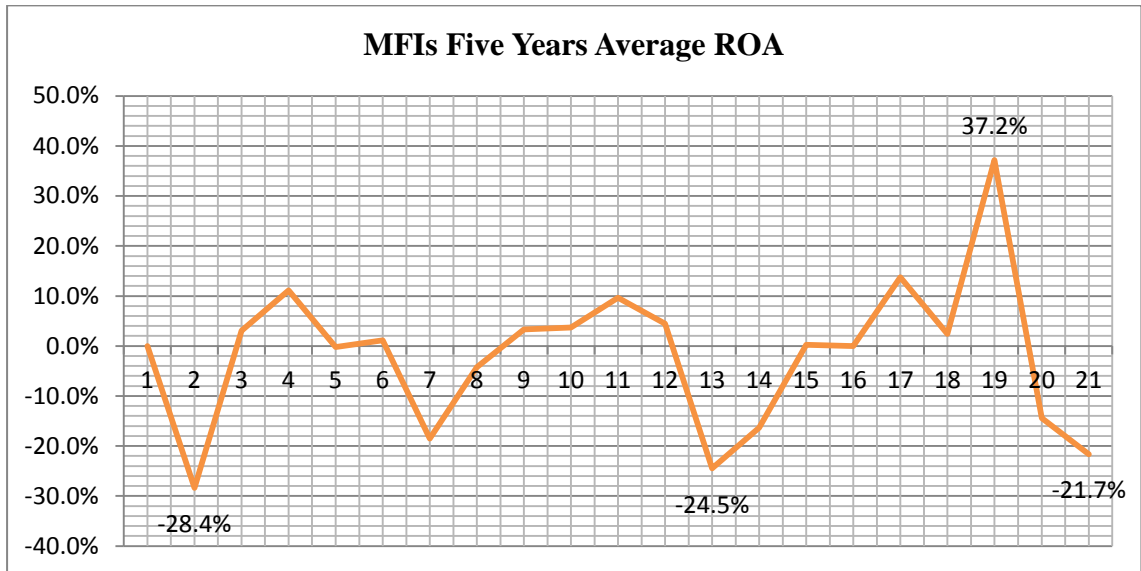
Source: Research Findings

As shown in figure 4.4 below, 42.85% had five years ROA of 0% to 5%, 38.1% of the MFIs had five year average ROA being less than zero, 9.52% ROA of 10-15%, 4.76% ROA of 5% to 10% and 4.76% over 15%. This indicates that big number MFIs in Kenya continue to have unfavourable profitability.

Figure 4.4: Microfinance Institutions Profitability
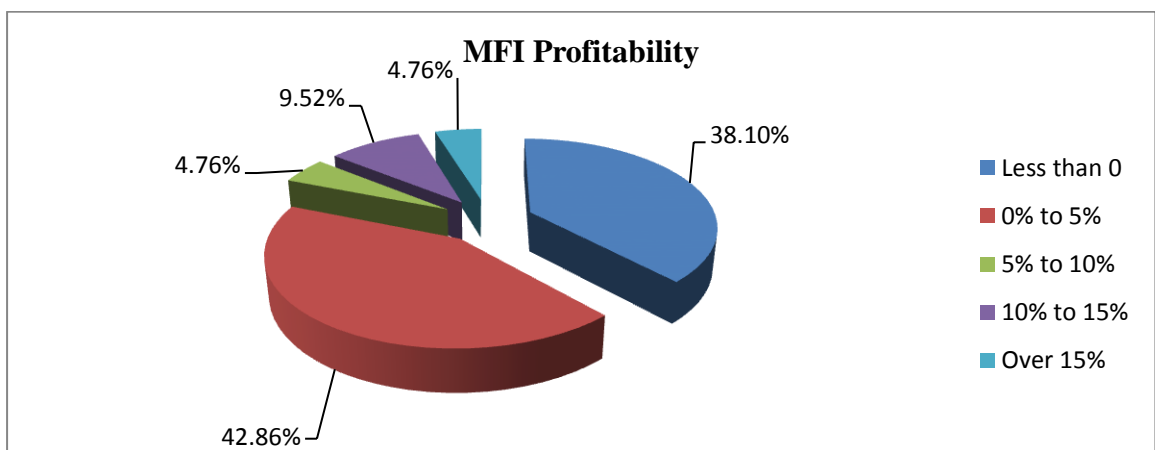
Source: Research Findings

4.2.5   Microfinance Institutions Liquidity

Most MFIs in Kenya were found to be faced with liquidity challenge as shown in figure 4.5 below. Most of the MFIs at 53.57% had deposit to total assets ratio of less than one, 25% had ratio of 1.5 to 2.5, 10.71% 1 to 1.5 and 10.71% over 2.5%. Overall, 79% of the MFIs had deposits to assets ratio of less than 2 which implies that the MFIs had liquidity problem.

Figure 4.5: Microfinance Institutions Liquidity
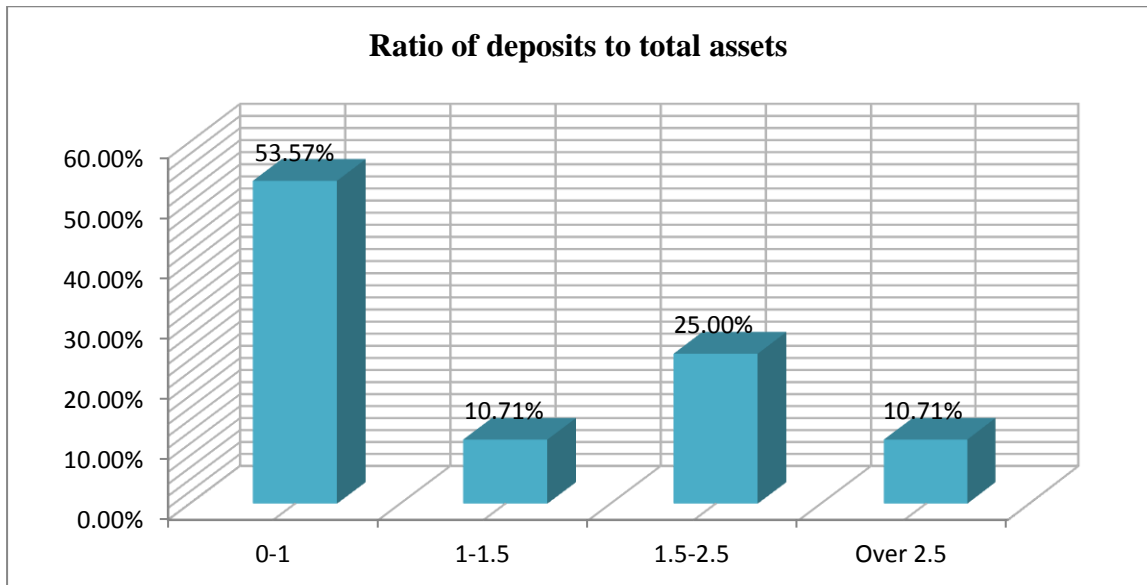
Source: Research Findings

4.2.6   Microfinance Institutions Loan Portfolio to Total Assets

This variable was used as a control variable since the amount of loans advanced highly affects profitability of MFIs since interest constitutes to the main source of MFIs income. As shown in figure 4.6 below, 28.1% had loan portfolio to total assets ratio of 1 to 2, 28.1% a ratio of 3 to 4, 25% had a ratio of less than 1 while 18.8% had a ratio of 2 to 3.

Figure 4.6: Microfinance Institutions Loan Portfolio to Total Assets
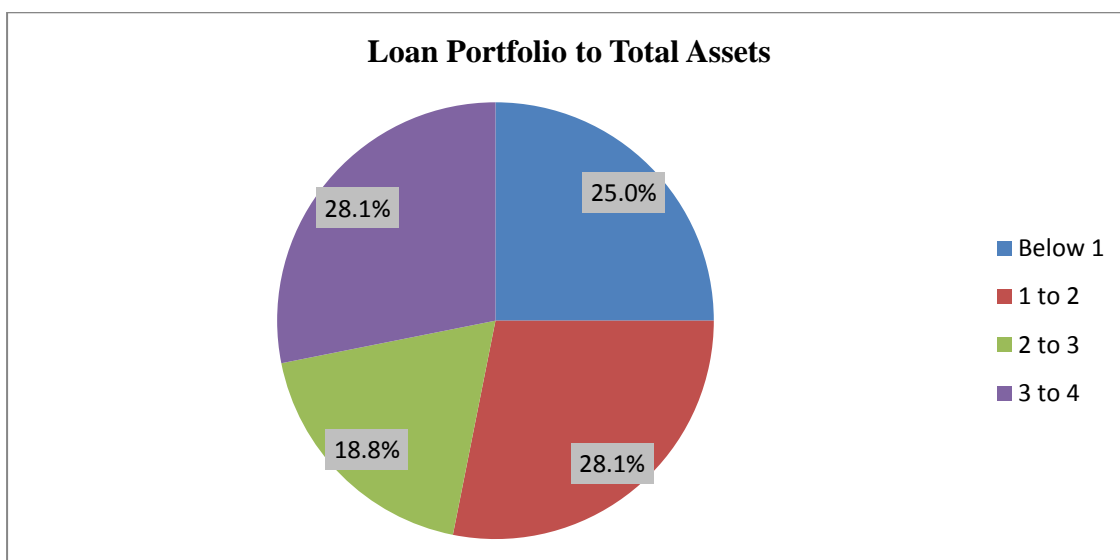
Source: Research Findings

4.2.7   Microfinance Institutions Offering Mortgage Financing

90% of MFIs in Kenya have not ventured into mortgage financing business with only 10% of the MFIs investing in mortgage financing. The results are shown in figure 4.7 below.

Figure 4.7: Microfinance Institutions Offering Mortgage Services
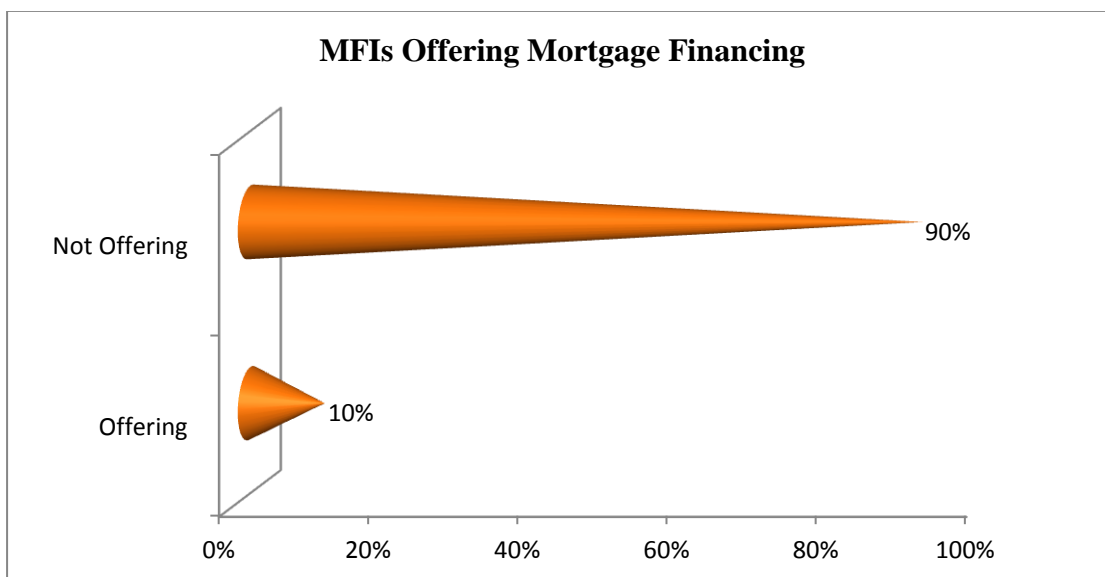
Source: Research Findings

4.3 Regression Analysis

Regression analysis was used to establish the relationship between various variables and profitability.

4.3.1 The effect of MFI Liquidity on Profitability

Liquidity has positive effect on profitability of microfinance institutions in Kenya as shown by coefficient of correlation of 0.32 and coefficient of determination of 0.1. The results are shown in table 4.2 below.

Table 4.2: Correlation between Liquidity and Profitability

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.3219	0.1036	0.0629	0.0059

Source: Research Findings

The relationship between liquidity and profitability is significant at 95% since the p value obtained of 0.0125 is less than 0.05. The result of analysis of variance is shown in table 4.3 below.

Table 4.3: Liquidity and Profitability ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1 415.797	1	115.797	2.5427	0.0125
Residual	12 249.623	22	6.801		
Total	13 665.420	23			

Source: Research Findings

The coefficients obtained from the regression analysis of liquidity and profitability is detailed in table 4.4 below.

Table 4.4: Liquidity and Profitability Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
Constant	-14.7203	8.2050		-1.7941	0.0087
Liquidity	7.2911	4.5724	0.3219	1.5946	0.0125

Source: Research Findings

4.3.2 The effect of MFI Loan Portfolio on Profitability

Ratio of loan portfolio to total assets has weak positive effect of profitability of MFIs. This is shown by coefficient of correlation of 0.0118 and coefficient of determination of 0.0001. The results are shown in table 4.5 below.

Table 4.5: Correlation between Loan Portfolio and Profitability

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.0118	0.0001	0.0453	0.0021

Source: Research Findings

The relationship between loan portfolio and profitability is significant at 95% since the p value obtained of 0.0021 is less than 0.05. The result of analysis of variance is shown in table 4.6 below.

Table 4.6: Loan Portfolio and Profitability ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.90	1	1.9003	0.0031	0.0021
Residual	63.52	22	21.0691		
Total	65.42	23			

Source: Research Findings

The coefficients obtained from the regression analysis of loan portfolio and profitability is detailed in table 4.7 below.

Table 4.7: Loan Portfolio and Profitability Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
Constant	-4.7868	12.9457		-0.3698	0.0072
Loan Portfolio	0.2749	4.9692	0.0118	0.0553	0.0096

Source: Research Findings

4.3.3 The Effect of Mortgage Financing on MFI Profitability

The relationship between mortgage financing is linear and positive as shown by the scatter diagram presented in figure 4.8 below. Increase in mortgage finance as a percentage of total assets leads to increase in MFI return on assets.

Figure 4.8: Microfinance Institutions Offering Mortgage Services

Effect of Mortgage Financing on Profitability
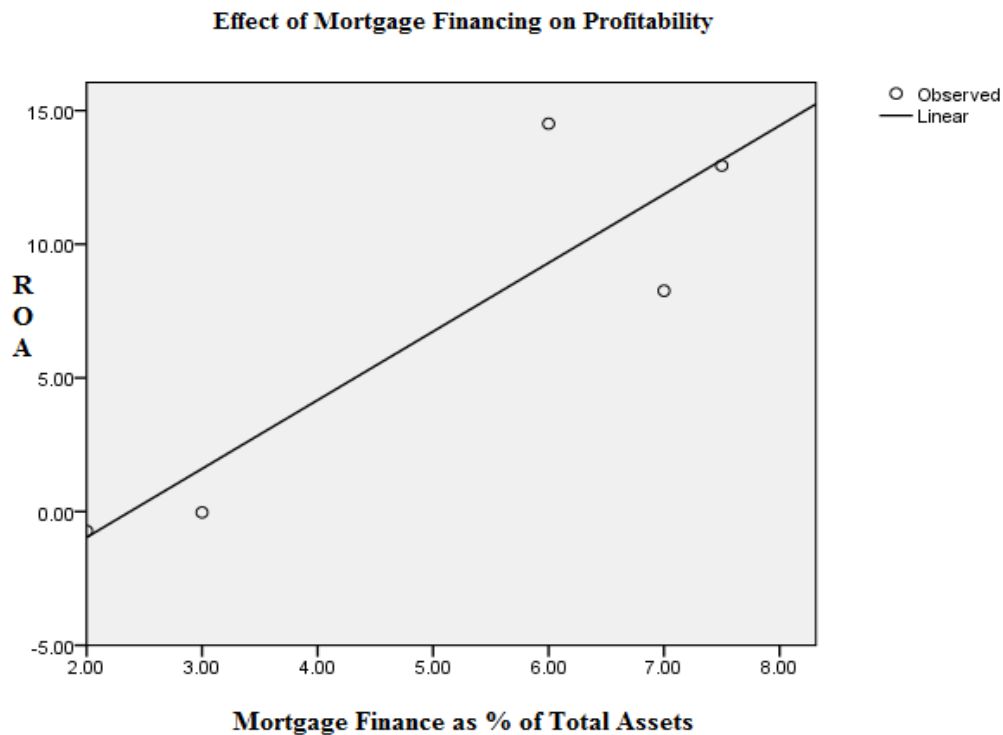
Source: Research Findings

The finding is confirmed by regression analysis between profitability and mortgage financing. As shown in table 4.8 below, mortgage financing is strongly and positively related to MFI profitability as shown by coefficient of correlation of 0.888 and coefficient determination of 0.788.

Table 4.8: Correlation between Mortgage Financing and Profitability

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.888	0.788	0.717	3.782

Source: Research Findings

The relationship between mortgage financing and profitability is significant at 95% since the p value obtained of 0.0445 is less than 0.05. The result of analysis of variance is shown in table 4.9 below.

Table 4.9: Mortgage Financing and Profitability ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	159.376	1	159.3763	11.1416	0.0445
Residual	42.914	3	14.3047		
Total	202.290	4			

Source: Research Findings

The coefficients obtained from the regression analysis are detailed in table 4.10 below.

Table 4.10: Mortgage Financing and Profitability Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
Constant	-6.096	4.270		-1.428	0.249
Mortgage Financing	2.566	0.769	0.888	3.338	0.044

Source: Research Findings

4.3.4 Analytical Model

Mortgage financing, liquidity and loan portfolio have strong positive relationship with MFI profitability. This is shown by coefficient of correlation of 0.9967 and coefficient of determination of 0.9934 implying that the model developed accounts for 99% of MFI profitability. The results are shown in table 4.11 below.

Table 4.11: Analytical Model Correlation Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.9967	0.9934	0.9736	0.1552

Source: Research Findings

The model developed is significant at 95% since the p value obtained of 0.0103 is less than 0.05. The result of analysis of variance is shown in table 4.12 below.

Table 4.12: Analytical Model ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	200.956	3	66.9853	50.1957	0.0103
Residual	1.334	1	1.3345		
Total	202.290	4			

Source: Research Findings

The coefficients obtained from the regression analysis are detailed in table 4.13 below. The model developed by the study is $Ys = -6.5522 + 2.2581X_1 + 0.268X_2 + 0.0711X_3$ where Ys is profitability as measured by return on assets, X_1 is mortgage financing as measured by a percentage of mortgage advances to total assets, X_2 is the liquidity of MFI as measured by ratio of deposits to total assets and X_3 is the size of MFI as measured as a percentage of total loans advanced to total assets.

Table 4.13: Analytical Model Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
Constant	-6.5522	1.6801		-3.8998	0.0160
Mortgage Financing	2.2581	0.3029	0.7810	7.4542	0.0149
Loan Portfolio	0.2680	0.0223	0.6977	3.4918	0.0018
Liquidity	0.0711	0.0984	0.9109	0.1549	0.0122

Source: Research Data

4.4 Interpretation of the Findings

The study sought to determine the effect of mortgage financing on profitability of microfinance institutions in Kenya. The study found that MFIs Liquidity had positive and significant effect on profitability of microfinance institutions in Kenya as shown by coefficient of correlation of 0.32 and coefficient of determination of 0.1. The relationship between liquidity and profitability is significant at 95% since the p value obtained of 0.0125 is less than 0.05. Ratio of loan portfolio to total assets was found to have weak positive effect of profitability of MFIs as shown by coefficient of correlation of 0.0118 and coefficient of determination of 0.0001. The relationship between loan portfolio and profitability was found to be significant at 95% since the p value obtained of 0.0021 is less than 0.05.

The relationship between mortgage financing and Micro Finance Profitability was found to be linear and positive as shown by the scatter diagram. The findings were confirmed by regression analysis between profitability and mortgage financing where coefficient of correlation of 0.888 and coefficient determination of 0.788 were obtained. The relationship between mortgage financing and profitability was found to be significant at 95% since the p value obtained of 0.0445 is less than 0.05.

Mortgage financing, liquidity and loan portfolio combined were found to have strong positive relationship with MFI profitability. This was shown by coefficient of correlation of 0.9967 and coefficient of determination of 0.9934 implying that the model developed accounted for 99% of MFI profitability. The model developed was significant at 95% since the p value obtained of 0.0103 is less than 0.05. The model developed by the study was $Ys= -6.5522 + 2.2581X_1 + 0.268X_2 + 0.0711X_3$ where Ys is profitability as measured by return on assets, X_1 is mortgage financing as measured by a percentage of mortgage advances to total assets, X_2 is the liquidity of MFI as measured by ratio of deposits to total assets and X_3 is the size of MFI as measured as a percentage of total loans advanced to total assets. This implies that of all the independent variables, mortgage financing was the most important in determining MFI profitability since it had the highest coefficient of 2.2581. Internationally, these findings agree with those of Fang (2004) who found that both real estate financing and mortgage had positive effects on the banks on the banks profitability. Locally,

Ndirangu (2004) found that adopting different types of mortgage positively affected the financial performance of mortgage institutions in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Introduction

This chapter provides the summary of the findings from chapter four, and also provides the conclusion of the study based on the objectives of the study. The conclusions and recommendations drawn are in quest of addressing the research objective of the study that was to establishing the effect mortgage financing on profitability of microfinance institutions in Kenya. This chapter presents the summary and description of findings derived from the stud, conclusions and recommendations for policy as well as recommendations for further research.

5.2   Summary

The objective of this study was to determine the effect of mortgage financing on profitability of microfinance institutions in Kenya. The objective was achieved by analyzing secondary data obtained from MFIs relating to mortgage financing and MFI profitability. To get the relationship between independent and dependent variables, regression analysis was conducted on each independent variable separately on dependent variable and independent variables jointly. The study found that mortgage financing had strong positive relationship with MFI profitability with coefficient of correlation of 0.888 and coefficient determination of 0.788. The relationship between mortgage financing and profitability was found to be significant at 95% with a p value 0.0445.

The study also found that MFIs Liquidity had positive and significant effect on profitability of microfinance institutions in Kenya as shown by coefficient of correlation of 0.32 and coefficient of determination of 0.1. The relationship between liquidity and profitability was also significant at 95% with p value of 0.0125. Ratio of loan portfolio to total assets was found to have weak positive effect of profitability of MFIs as shown by coefficient of correlation of 0.0118 and coefficient of

determination of 0.0001. The relationship between loan portfolio and profitability was found to be significant at 95% with the p value of 0.0021.

Mortgage financing, liquidity and loan portfolio combined were found to have strong positive relationship with MFI profitability with coefficient of correlation of 0.9967 and coefficient of determination of 0.9934 implying that the model developed accounted for 99% of MFI profitability. The model developed was significant at 95% since the p value obtained of 0.0103 was less than 0.05. The model developed by the study was $Ys = -6.5522 + 2.2581X_1 + 0.268X_2 + 0.0711X_3$ where Ys is profitability as measured by return on assets, X_1 is mortgage financing as measured by a percentage of mortgage advances to total assets, X_2 is the liquidity of MFI as measured by ratio of deposits to total assets and X_3 is the size of MFI as measured as a percentage of total loans advanced to total assets.

The study found that wide range of loans offered by MFIs in Kenya related to business financing constituting to 75.98% of the total loan portfolio, consumption with 14.82%, agriculture 3.58%, emergency 5.03%, asset finance 0.56% and mortgage financing 0.05%. Notably, mortgage financing is under developed among the microfinance since it accounts for the lowest percentage of total loans advanced. The study found that majority of MFIs were lending at 51% related to individuals while 49% were group lending. MFIs mortgage flat interest rates were found to be expensive than those of commercial banks at 24% for MFIs compared to 18% for commercial banks while reducing rates were 20% for MFIs and 25% for commercial banks. On average, MFIs charged a 3% fees on mortgage loans while banks were not charging the fee. On mortgage repayment period, MFIs had maximum repayment period of 120 months and commercial banks 240 months. MFIs mortgage financing ranged from Ksh. 100,000 to Ksh. 7,500,000 while commercial banks minimum limit was Ksh. 300,000 with no maximum. The low limit of amount of mortgage financing per applicant can be explained by the low income target customers while the higher limit can be explained by need to minimize credit risk and lack of adequate liquidity.

The performance of MFI industry was found to be poor with the five years average microfinance institutions profitability ranging from 37.2% and -28.4%. Overall five years average industry profitability was found to be -3.7915% implying the continued

poor performance of MFIs. 42.85% of MFIs had five years ROA of 0% to 5%, 38.1% of the MFIs had five year average ROA being less than zero, 9.52% ROA of 10-15%, 4.76% ROA of 5% to 10% and 4.76% over 15%. This indicates that big number MFIs in Kenya continue to have unfavourable profitability.

Most MFIs in Kenya were found to be faced with liquidity challenge. Most of the MFIs at 53.57% had deposit to total assets ratio of less than one, 25% had ratio of 1.5 to 2.5, 10.71% 1 to 1.5 and 10.71% over 2.5%. Overall, 79% of the MFIs had deposits to assets ratio of less than 2 which implies that the MFIs had liquidity problem. 28.1% of the MFIs had loan portfolio to total assets ratio of 1 to 2, 28.1% a ratio of 3 to 4, 25% had a ratio of less than 1 while 18.8% had a ratio of 2 to 3. On MFIs that had ventured into mortgage financing, the study found that 90% of MFIs in Kenya had not ventured into mortgage financing business with only 10% of the MFIs investing in mortgage financing.

5.3   Conclusion

From the findings of this study and the ensuing discussion, this research concludes that mortgage financing has strong and significant positive effect on MFI profitability. MFIs Liquidity is also a key determinant of MFI profitability and has positive and significant effect on profitability of microfinance institutions in Kenya. Loan portfolio to total assets has weak positive effect of profitability of MFIs. Mortgage financing, liquidity and loan portfolio combined have strong positive relationship with MFI profitability and account for 99% of MFI profitability.

The study also concludes that mortgage financing is under developed among the MFIs with wide range of loans offered by MFIs in Kenya relating to business financing at, consumption agriculture, emergency, asset finance and mortgage financing closing the list. The study also concludes that majority of MFIs are no longer lending mostly to the groups but individuals currently constitutes to majority of MFI clients.

The study also concludes that the underdevelopment of mortgage financing among MFIs as compared to commercial banks is due to the differences in lending terms. MFI mortgages are expensive with application fees, higher interest, have shorter repayment period and amount given has a maximum limit and hence locking out

clients requiring higher amounts. The performance of MFI industry has remained poor with the five years average microfinance institutions profitability being negative. Most MFIs also have liquidity challenge with majority of them having the MFIs having deposit to total assets ratio of less than one.

Finally, the study concludes that mortgage industry continue to be faced by numerous challenges which include availability of suitable land at an affordable price in the urban areas has been a major challenge in addressing housing for the low and middle income, high cost of land is that the prices of houses have increased significantly, high interest rates on mortgages and increase in poverty levels in the country.

5.4   Recommendations for Policy

The study found that mortgage financing has positive effect on profitability of MFIs and that adoption of mortgage financing line of business remains low in addition to continued poor financial performance of MFIs. The study therefore recommends that the MFI management to adopt mortgage financing as a way of increasing their profitability. This recommendation is not withstanding the finding that majority of MFIs may not be able to finance mortgages since they have liquidity challenges. To remedy this, the study recommends that the MFI management to come up with ways of getting long term finance to enable them to cater for mortgage finance needs. Due to the low profitability on MFIs, the study recommends for the continued support of the MFIs to ensure they are sustainable and capable of continuing with their role on availing microfinance to the low income groups.

To ensure the development of mortgage financing among the MFIs, the study recommends that the MFIs management to harmonize their mortgage lending terms to those of commercial banks. This will ensure that their mortgages are as competitive like those of commercial banks. Finally, optimal results on MFI mortgage financing cannot be a success if not supported by appropriate regulatory framework. As a result, the study recommends that the Central Bank of Kenya to develop regulatory framework to assist MFIs in financing and venturing into mortgage financing business. CBK needs to recognize the important role played by MFIs in availing home

ownership finances to low and middle income population who constitute to majority of citizens.

5.5 Limitations of the Study

The study was faced by various challenges where the data available from Central Bank of Kenya, Association of Microfinance Institutions in Kenya and other sources with published information relation to MFIs in Kenya including market mix were found to have incomplete information in relation to MFIs. The information available from each source was not adequate alone and the researcher had to obtain missing information from other sources. This was more specifically in relation to small MFIs. Secondly, the study relied entirely on secondary data as published. The researcher had no means of verifying the accuracy of the data and therefore the findings may be distorted if the data was in accurate. In addition, no adjustments were done on secondary data obtained.

The third limitation of the study was the fact that just very few MFIs in Kenya had ventured into mortgage financing. The low number of the regressed results implies that the data analyzed was not following the normal distribution and hence could not be much relied on making generalizations. Finally, the study model developed and analyzed did not consider the opportunity cost of investing in mortgage financing nor the risk involved and therefore, the incorporation of these variables may change the findings.

5.6   Recommendations for Further Research

A number of challenges and gaps were identified by the study which should form the basis of future research. First, the number of MFIs dealing with mortgage financing was low making it hard to generalize the findings. Further research can be done using commercial banks as opposed to MFIs since the number of commercial banks that have invested in mortgage financing is high and therefore can provide more accurate results.

Further study can be done on the effect of mortgage financing on microfinance institutions profitability but incorporating the opportunity cost and risk of investing in

mortgage financing. Thirdly, further research can be done on mortgage financing and MFIs profitability but not entirely relies on secondary data but also use primary data. Primary data can provide useful insights that are usually not captured in secondary data in addition to verifying secondary data obtained. Finally, further research is recommended using a case study approach on the effect of mortgage financing on MFIs profitability. This will make it possible to capture firm specific variables that have had a significant effect on profitability.

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APPENDICES

Appendix I:List of Microfinance Institutions In Kenya As At 31st December 2013

1. Blue Limited
2. K-rep Development Agency
3. Eclof Kenya
4. KADET
5. BIMAS
6. SISDO
7. Micro Africa Ltd
8. Opportunity Kenya
9. Yehu Microfinance Trust
10. Fusion Capital Ltd
11. Canyon Rural Credit Ltd
12. One Africa Capital Ltd
13. Jitegemea Credit Scheme
14. AAR Credit Services
15. Agakhan Foundation
16. Microcredit Programme
17. ADOK TIMO
18. Pamoja   Women   Development Programme
19. Juhudi Kilimo Co.Ltd
20. Musoni Kenya Ltd
21. Molyn Credit Ltd
22. Renewable   Energy   Technology Assistance Programme(RETAP)
23. Rupia Ltd
24. Taifa Options Microfinance
25. U&I Microfinance Ltd
26. Select Management Services Ltd
27. Greenland Fedha Ltd
28. Youth Initiatives – Kenya
29. Biashara Factors
30. Platinum Credit Limited
31. Ngao Credit Ltd
32. Indo Africa Finance
33. Springboard Capital
34. Mini Savings & Loans Ltd
35. KEEF-Kenya   Entrepreneurship Empowerment Foundation
36. Women Enterprise Solutions
37. Focus Capital Limited
38. Samchi Credit Limited
39. Fountain Credit Services Ltd
40. Milango Financial Services
41. Nationwide Credit Kenya Ltd
42. Fort Credit Limited
43. Kenya Women Finance Trust-DTM
44. Rafiki Deposit taking Microfinance Ltd
45. Faulu Kenya DTM
46. SMEP DTM
47. Remu DTM Ltd
48. Uwezo DTM Ltd
49. Century DTM Ltd
50. Sumac   Credit   DTM   Ltd

Source: AMFI, 2013

Appendix II: Research Data

MFI name	Fiscal Year	Assets	Deposits	Gross Loan Portfolio	Gross loan portfolio to total assets	Return on assets
ACDF	2012	7428353	2010579	5781119	77.83%	-14.52%
ACDF	2011	5642831	1127050	1324805	65.35%	-8.54%
ACDF	2010	6283539	951258	1129650	48.33%	-13.95%
Adok Timo	2012	102785712	27274603	89747744	54.08%	0.68%
Adok Timo	2011	10291533	29704400	86947477	55.97%	-2.73%
Adok Timo	2010	92231533	16135690	74946727	81.26%	2.24%
Adok Timo	2009	80983967	13430764	66038417	81.55%	0.90%
BIMAS	2014	627855907	241085274	423536505	67.46%	30%
BIMAS	2012	627696390	198365872	400267795	63.77%	16%
BIMAS	2011	537943400	202002108	400697367	72.80%	-0.48%
BIMAS	2010	402797101	159855769	263218345	65.35%	3.12%
BIMAS	2009	413012853	171897611	199623577	48.33%	-2.65%
Century MFB	2013	163608000	66006000	88483000	54.08%	-21.54%
Century MFB	2012	93590990	13509225	26015470	27.80%	-21.00%
Century MFB	2011	88765180	929892	1482982	1.67%	-3.43%
ECLOF - KEN	2013	1005968135	178911257	595244146	59.17%	-0.77%
ECLOF - KEN	2012	824361534	314427396	470400975	57.06%	1.28%
ECLOF - KEN	2011	989142398	275911857	451268230	60.98%	0.68%
ECLOF - KEN	2010	728396802	218624237	376043996	51.63%	1.40%
ECLOF - KEN	2009	589942390	187434485	330187323	55.97%	3.43%
Faulu MFB	2014	18701376563	11865127067	11509412225	61.54%	4.47%

Faulu MFB	2012	7637676000	4464501000	5052440000	66.15%	0.51%
Faulu MFB	2011	5140576000	1965002000	3308513000	64.36%	-0.50%
Faulu MFB	2010	4390079000	1854604000	2677259000	60.98%	-3.43%
Faulu MFB	2009	4307180000	1995495000	3006959000	69.81%	-1.77%
Greenland Fedha	2011	539917000	0	530713000	98.30%	1.12%
Greenland Fedha	2010	238676000	0	232365000	97.36%	-0.92%
Jamii Bora	2013	5925266	2259081	3675865	62.04%	1.30%
Juhudi Kilimo	2014	826494299	0	576065031	69.70%	-14.52%
Juhudi Kilimo	2011	265280292	0	163761100	61.73%	-8.54%
Juhudi Kilimo	2010	174544647	0	105159417	60.25%	-13.95%
Juhudi Kilimo	2009	121457899	34273266	74590865	61.41%	0.68%
KEEF	2013	310636496	4283105176	276256590	88.93%	-2.73%
KEEF	2012	99676843	4283105000	72542875	72.78%	1.30%
KPOSB	2009	15353585068	10462830924	276256590	0.00%	-4.22%
KWFT MFB	2014	24325669748	15076598538	15891630520	65.33%	2.13%
KWFT MFB	2013	21739116191	12953673229	14932047542	68.69%	1.72%
KWFT MFB	2012	20384438000	9353971000	13168917000	64.60%	0.92%
KWFT MFB	2011	17035784989	7076859775	11456622989	67.25%	1.29%
KWFT MFB	2010	18958394000	6162814000	12277392000	64.76%	1.61%
KWFT MFB	2009	14749566000	4283105000	10182147000	69.03%	5.27%
Makao Mashinani	2011	50102799	19220000	35027888	64.60%	0.92%
Makao Mashinani	2010	35102864	9828722	16337968	46.54%	-12.62%
MCL	2011	265493283	27865431	189782207	70.78%	-18.20%
MCL	2010	234046326	38920000	169248242	72.31%	7.17%
MCL	2009	185241523	25000000	129530803	69.93%	7.34%

Micro Kenya	2014	1377181364	260169947	1292142205	93.83%	10.14%
Micro Kenya	2012	1281660000	199482000	751404000	58.63%	-2.12%
Micro Kenya	2011	281310000	119770154	441279016	65.33%	1.13%
Micro Kenya	2010	675849000	48244000	247116000	36.56%	4.05%
Micro Kenya	2009	507309000	0	162815000	32.09%	-0.94%
Musoni	2014	604856798	161771252	357867307	59.17%	-19.21%
Musoni	2013	548836664	128232857	240064887	43.74%	-21.27%
Musoni	2012	280476793	0	161374205	57.54%	-4.90%
Musoni	2011	89107894	0	78978690	88.63%	-8.51%
Musoni	2010	70966639	0	73106291	103.02%	-1.70%
Opportunity Kenya	2014	897448000	263510000	471271000	52.51%	-5.93%
Opportunity Kenya	2013	281310000	263211085	526007091	73.51%	-3.34%
Opportunity Kenya	2012	715936000	224343191	437545000	61.12%	-2.12%
Opportunity Kenya	2011	604096000	207186000	413898000	68.52%	-8.94%
Opportunity Kenya	2010	394829373	149830539	318378009	80.64%	-12.62%
Opportunity Kenya	2009	358005322	118110890	256146614	71.55%	-18.20%
PAWDEP	2014	622578643	502394411	690876544	110.97%	-2.12%
PAWDEP	2012	604856798	527986211	657366948	59.17%	1.13%
PAWDEP	2010	548836664	487778624	628175075	43.74%	4.05%
PAWDEP	2009	659537847	475165208	622564356	94.39%	0.24%
Platinum Credit	2014	1077213425	263211085	1475180293	136.94%	-8.54%
Platinum Credit	2012	77213425	224343191	1160030000	73.51%	-13.95%
Rafiki MFB	2014	5108252033	2179215027	2667154843	52.21%	-0.35%
Rafiki MFB	2013	3678751000	1419271000	1901969000	51.70%	0.32%
Rafiki MFB	2012	440661000	101991000	104348000	23.68%	-3.5

RAFODE	2011	48369520	7921000	27292000	54.51%	-8.54%
RAFODE	2010	48536640	7707000	26678000	54.96%	-13.95%
RAFODE	2009	35673000	7200000	20498000	57.46%	0.68%
Remu	2012	131997000	137922000	174817462	132.44%	-4.90%
Remu	2011	131997000	20069000	42444000	94.39%	-11.60%
Riverbank	2009	3319550	1007469	2193737	66.09%	13.72%
SISDO	2014	302100658	108859301	245063136	93.83%	-18.20%
SISDO	2012	26678000	211807107	305872813	58.63%	7.17%
SMEP MFB	2014	2584863338	1375255702	2095942361	65.33%	1.84%
SMEP MFB	2012	2289511000	1014002000	1573161000	68.71%	2.24%
SMEP MFB	2011	1998220000	813893000	1532088000	76.67%	0.90%
SMEP MFB	2010	1789564405	614027500	1181881528	66.04%	0.30%
SMEP MFB	2009	1326317334	526719288	939407512	70.83%	1.01%
Sumac MFB	2013	302100658	108859301	190504548	63.06%	2.70%
Sumac MFB	2012	198676000	559031	177874547	89.53%	0.51%
Sumac MFB	2011	3319550	137922000	168076408	51.70%	-0.50%
Sumac MFB	2010	113451674	20069000	100443970	88.53%	-3.43%
Sumac MFB	2009	107975724	526719288	73669117	68.23%	-1.77%
Taifa	2012	11881528	28572000	21691000	23.68%	1.12%
Taifa	2011	29844000	939407512	168076408	54.51%	-0.92%
Taifa	2010	20726000	23580000	9974000	48.12%	2.24%
UBK	2010	12713829	9589957	10182736	80.09%	37.15%
UBK	2009	7300442	308279097	6577356	90.10%	0.92%
Uwezo MFB	2013	107597437	36269000	74305000	69.06%	1.29%
Uwezo MFB	2012	81224419	22253280	45139777	55.57%	-21%
Uwezo MFB	2011	58668791	9589957	33801496	57.61%	1.12%
VisionFund Kenya	2014	880403234	308279097	466242118	52.96%	-12.21%
VisionFund Kenya	2013	302100658	307907499	462340241	65.33%	-3.43%
VisionFund Kenya	2013	906491447	314935849	506153458	55.84%	-6.01%

VisionFund Kenya	2012	81224419	311576385	456895259	68.71%	2.24%
VisionFund Kenya	2011	794348000	318922000	375558000	47.28%	-8.88%
VisionFund Kenya	2010	871640000	339147000	511089000	58.64%	-6.31%
VisionFund Kenya	2009	794237414	297017908	468777601	59.02%	-9.91%
Yehu	2014	511089000	190238358	403596666	74305000	-13.95%
Yehu	2012	486688530	145757147	271121856	55.71%	0.68%
YIKE	2012	5884352	36269000	1175275	19.97%	-2.73%

Source: MFI's Statements of Financial Position and Statements of Comprehensive Income