

**THE RELATIONSHIP BETWEEN MACROECONOMIC FACTORS AND
NON-PERFORMING LOANS IN MORTGAGE FIRMS IN KENYA**

**BY
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DECLARATION

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

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DEDICATION

To my precious family members Jeriah Kwamboka and daughters Neema, Tasha and Sheila for giving me a new purpose for living and a renewed zeal to complete my study. The same also goes to my dad and mum for giving me the opportunity to go to school.

TABLE OF CONTENTS

| | |
|--|-----------|
| DECLARATION..... | 2 |
| ACKNOWLEDGEMENT..... | 3 |
| DEDICATION..... | 4 |
| ABSTRACT..... | 10 |
| LIST OF TABLES | 8 |
| ABBREVIATION..... | 9 |
| CHAPTER ONE: INTRODUCTION..... | 11 |
| 1.1 Background of the Study | 11 |
| 1.1.1 Macroeconomic Factors..... | 13 |
| 1.1.2 Non Performing Loans..... | 13 |
| 1.1.3 Macroeconomic Factors and Non Performing Loans | 14 |
| 1.1.4 Mortgage Firms in Kenya | 15 |
| 1.2 Research Problem | 17 |
| 1.3 Objective of the Study | 18 |
| 1.4 Value of the Study | 18 |
| CHAPTER TWO: LITERATURE REVIEW..... | 20 |
| 2.1 Introduction..... | 20 |
| 2.2 Theoretical Review | 20 |
| 2. 2.1 Agency Theory..... | 20 |
| 2.2.2 Capital Market Theory and the Capital Asset Pricing Model..... | 21 |
| 2.2.3 Lien Theory of Mortgages | 22 |
| 2.3 Determinants of Non Performing Loans in Mortgage Markets | 23 |
| 2.3.1 Inflation Level..... | 23 |
| 2.3.2 Rapid Loan Growth..... | 24 |

| | |
|--|-----------|
| 2.3.3 High Interest Rate | 24 |
| 2.3.4 Unemployment Rate | 25 |
| 2.4 Empirical Review..... | 26 |
| 2.5 Summary of Literature Review and Research gap | 32 |
| CHAPTER THREE: RESEARCH METHODOLOGY | 35 |
| 3.1 Introduction..... | 35 |
| 3.2 Research Design..... | 35 |
| 3.3 Target Population..... | 35 |
| 3.4 Data Collection | 36 |
| 3.5 Data Analysis | 36 |
| 3.6.1 Multiple Linear Regressions | 37 |
| 3.6.2 Correlation Coefficient | 38 |
| CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPREATION | 39 |
| 4.1 Introductions | 39 |
| 4.2 Analysis Descriptive Statistics for 2010-2013..... | 39 |
| 4.3 Correlation Analysis | 41 |
| 4.4 Regression Model Summary..... | 42 |
| 4.4 Regression Coefficients | 43 |
| 4.4. Discussions | 45 |
| CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS | 49 |
| 5.1 Introduction..... | 49 |
| 5.2 Summary of Findings..... | 49 |
| 5.3 Conclusions..... | 51 |
| 5.4 Policy Recommendations..... | 53 |

| | |
|--|-----------|
| 5.5 Limitation of the Study | 54 |
| 5.5 Suggestion for Further Research..... | 54 |
| REFERENCES..... | 56 |
| Appendix I: List of Commercial Banks and mortgage institutions in Kenya..... | 63 |
| Appendix II: GDP Growth Rates | 63 |

LIST OF TABLES

Table 4. 1: Analysis Descriptive Statistics for 2010-2013**Error! Bookmark not defined.**

Table 4. 2: Correlation between Monetary Factors and Level of Nonperforming Loans **Error! Bookmark not defined.**

Table 4. 3: Regression Model Summary.....**Error! Bookmark not defined.**

Table 4. 4: Analysis of Variances in the Regression Model....**Error! Bookmark not defined.**

Table 4. 5: Test of Significance of Independent Variables.....**Error! Bookmark not defined.**

ABBREVIATIONS

| | |
|------|---|
| CBK | - Central Bank of Kenya |
| GDP | - Gross Domestic Product |
| HFCK | - Housing Finance Company of Kenya |
| MFI | - Micro Finance Institutions |
| NPL | - Non Performing Loan |
| REER | - Real Effective Exchange Rate |
| SPSS | - Statistical Package for Social Sciences |

ABSTRACT

It is argued that the non-performing loans are one of the major causes of the economic stagnation problems and the current study sought to determine relationship between non-performing loans and macroeconomic factors in mortgage banks in Kenya. The general objective of the study is to identify the major macroeconomic causes of nonperforming loans in the mortgage institutions in Kenya. Specifically, it is aimed at determining the trend of incidence of NPLs in mortgage institutions and identifying factors accounting for the incidence of non-performing loans. The research design was selected as it helps in establishing the relationship between group borrowing and non performing loan in mortgage firms in Kenya. The population of this study was all 36 mortgage firms including banks, corporation and government ministry of housing. The study adopted a census survey where the entire 36 mortgage provider Institutions. The study used secondary data information that was obtained from articles, books, newspapers, internet and magazines. The study collected for a period of four years from 2010 to 2013. Data was analyzed through description statistics, means and standard deviations to determine the extent to which macroeconomic factors influence level of nonperforming loans in mortgage institutions. Further inferential statistics regression analysis was done to establish whether there exists a significant relationship between macroeconomic factors and non performing loans in mortgage institutions. The study concluded that GDP growth rate, high rate of unemployment, high rate of real interest rate, loan losses reserve ratio, significantly led to occurrence of Non Performing Loans. The study concluded that there existed significance strong and positive correlation between unemployment, real Interest rates in the economy contribute to Non-Performing loans in mortgage firms in Kenya. The study concluded that rate of unemployment would lead to a significant positive increase in Non Performing Loan as without salary, Mortgage loan could not be paid and therefore when unemployment rate is high, NPLs increase. The study recommends that management in mortgage sectors should carefully study the growth rate of the economy when determining their mortgage loan. The study recommend that management in mortgage sectors should consider employment status of their customers as high rate of employment would results to high rate of salary which empowers customer to honor their obligation to pay for their mortgage loan and reduces occurrence of Non Performing Loan as without salary, Mortgage loan could not be paid and therefore when unemployment rate is high, NPLs increase

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Mortgage financing is the process of underwriting and extending a home loan or mortgage on commercial property to a qualified applicant. The aim or focus of mortgage financing normally centers around two specific goals (Dolde, 2006). First, the financing seeks to create revenue for the lender and secondly the extension of mortgages 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). 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. The mortgage market is important for housing because it makes the investments of real property divisible thereby allowing households more flexibility in adjusting intertemporal allocation of savings and housing consumption between the present and the future as desired (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. In practice, many variants are possible and common worldwide and within each country (Tse, 2002).

Lenders provide funds against property to earn interest income, and generally borrow these funds themselves. The price at which the lenders borrow money therefore affects the cost of borrowing. Lenders may also, in many countries, sell the mortgage loan to other parties who are interested in receiving the stream of cash payments from the borrower, often in the form of a security (by means of a securitization (The World Bank. 2006). Mortgage lending will also take into account the perceived riskiness of the mortgage loan, that is, the likelihood that the funds will be repaid usually considered a function of the creditworthiness of the group 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 (Stiglitz and Weiss 2005).

Some of the loans given out by the lending institutions unfortunately become non performing and eventually result in bad debts with adverse consequences for the overall financial performance of the institutions. The issue of loan default (NPLs) is becoming an increasing problem that threatens the sustainability of MFIs (Asare and Whitehead 2006). The causes of the problem are multi-dimensional and non uniform among different literatures.

NPLs are always a source of misery for lenders because if an MFI has too much of it on its balance sheet, it can adversely affect its operations in terms of liquidity, profitability, debt- servicing capacity, Lending capacity and ability to raise additional capital. The incidence of non-performing loans in the Ghanaian banking and non-banking industries including MFIs has been on the rise in recent years as their loan portfolio increases despite efforts by these financial institutions to deal with it (Schreiner, 2003).

1.1.1 Macroeconomic Factors

The macroeconomic environment has an impact on the assessment of borrowers and their ability to have a loan. An economy in growth is favorable to an increase in revenues and a decrease in financial distress. As a result, real GDP growth and employment are negatively associated with the NPL. Conversely, unemployment is positively related to the NPL. Several empirical studies have found a negative association between NPL and real GDP growth (Fofack, 2005). The justification provided in the empirical literature of this association is that higher positive level of real GDP growth habitually entails a higher level of income. This improves the capacity of the borrower to pay its debts and contributes to reduce bad debts. When there is a downturn in the economy (slowed or negative growth of GDP) the level of bad debts will increase. The interest rate affects also the amount of bad debt in the case of floating interest rate. This implies that the effect of interest rates should be positive, and therefore, there is an increase in the debt caused by the increase in payments of interest rates and hence the rise of non-performing loans.

Fofack (2005) argues that economic growth and the real interest rate are important determinants of bad loans in the sub-Saharan African countries. He attributes the relationship between macroeconomic factors and doubtful accounts to the undiversified environment of some economies and their high exposure to external shocks.

1.1.2 Non Performing Loans

Non-performing Loans (NPLs) generally refer to loans which for a relatively long period of time do not generate income; that is the principal and/or interest on these loans has been unpaid for at least 90 days Caprio and Klingebiel (1999). Non-performing Loans (NPLs) could also occur when the amortization schedules are not realized as at when due resulting in over-bloated loan

interest due for payments. Non-Performing Loans (NPLs) reduces the liquidity of banks, credit expansion, it slows down the growth of the real sector with direct consequences on the performance of banks, the firm which is in default and the economy as a whole. According to the theory of finance, there are various risks facing financial institutions. They include: credit risk, liquidity risk, market risk, operating risk, reputation risk and legal risk. The system is highly sensitive while the activities of the operators need to be conducted within the laid down and agreed rules and procedures, in order to achieve a reasonable level of efficiency.

The immediate consequence of large amount of non-performing loans in the banking system is mortgage firm's failure. Many researches on the cause of mortgage firms' failures find that asset quality is a statistically significant predictor of insolvency (Siems 1994), and that failing banking institutions always have high level of non-performing loans prior to failure (Kieso et al., 2001).

Non-performing loans can lead to efficiency problem for mortgage market. It is found by a number of economists that failing mortgage tends to be located far from the most-efficient frontier, because mortgage firms do not optimise their portfolio decisions by lending less than demanded. In a high NPL condition, mortgage firms increasingly tend to carry out internal consolidation to improve the asset quality rather than distributing credit. Further, the high level of nonperforming loans requires mortgage to raise provision for loan loss that decreases the mortgage firm' revenue and reduces the funds for new lending.

1.1.3 Macroeconomic Factors and Non Performing Loans

Bloem and Gorter (2001) suggested that a more or less predictable level of non-performing loans, though it may vary slightly from year to year, is caused by an inevitable number of 'wrong

economic decisions' by individuals and plain bad luck (inclement weather, unexpected price changes for certain products, *etc.*). Under such circumstances, the holders of loans can make an allowance for a normal share of non-performance in the form of bad loan provisions, or they may spread the risk by taking out insurance. Enterprises may well be able to pass a large portion of these costs to customers in the form of higher prices. For instance, the interest margin applied by financial institutions will include a premium for the risk of nonperformance on granted loans.

Bercoff, Giovanniz *and* Grimardx (2002) The macroeconomic variables such as money multiplier, and reserve adequacy, institutional characteristics and *tequila* effect had positive influence on NPLs.

Fuentes and Maquieira (1998) undertook an in-depth analysis of loan losses due to the composition of lending by type of contract, volume of lending, cost of credit and default rates in the Chilean credit market. Their empirical analysis examined different variables which may affect loan repayment: (a) limitations on the access to credit; (b) macroeconomic stability; (c) collection technology; (d) bankruptcy code; (e) information sharing; (f) the judicial system; (g) prescreening techniques; and (h) major changes in financial market regulation.

1.1.4 Mortgage Firms in Kenya

The Kenyan housing finance system has grown rapidly over recent years in both value of loans and number of loans. The market has now gone through the initial 'germination' stage and is preparing to enter its next development phase. Consideration now needs to be given to the requirements for ensuring continued growth. The mortgage market is 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. Mortgage products

are widespread and are offered by virtually all banks. A typical loan would be done at variable rates for around 14 percent for an amount of Ksh 4 million over a period of 15 years. Based on this, 2.4 percent of the total population could afford a mortgage for a basic house. This rises to 11 percent of the urban population.

There is no viable market in rural areas given the low levels of income together with the high costs of developing a distribution network. The potential size of the mortgage market is currently around Ksh 800 billion or \$9.9 billion around 13 times the current level. Mortgage lending is predominantly done by banks in Kenya. Of the 45 banks and one Mortgage Finance Company in the Kenyan banking system, 25 of them have mortgage portfolios of differing sizes. Some of the lenders have just one or two loans on their books which may be to staff members or special customers and other banks are much larger players who see mortgages as a major business center.

There are two types of lenders which can be authorized by the Central Bank of Kenya. These are ordinary banks, which have the right to engage in mortgage business and mortgage companies. The Housing Finance Company of Kenya (HFCK), which still has a small government investment (7 percent), is the sole remaining Mortgage Finance Company at present. There are no major differences in the regulations applying to the two types of institutions and they each compete on a level playing field. The largest lender in Kenya is now Kenya Commercial Bank (KCB) following its acquisition of Savings & Loans, which remains as a mortgage subsidiary of KCB. Overall the two largest lenders control over half the market and only 9 banks (6 large, 2 medium and 1 small bank) have a mortgage portfolio exceeding Ksh 1 billion (HFC, 2013).

1.2 Research Problem

Loan portfolio constitutes the largest operating assets and source of revenue of most financial institutions. However, some of the loans given out become non-performing and adversely affect the profitability and overall financial performance of the lending institutions. Many lending institutions in Kenya are confronted with the challenge of rising non-performing loan portfolios despite efforts at stemming the tide.

Mortgage loans have created several problems for financial sectors and have seriously hindered the growth of the functioning of the financial institutions and the development of the economies (Murugu 1998). It is argued that the non-performing loans are one of the major causes of the economic stagnation problems. Each non-performing loan in the financial sector is viewed as an obverse mirror image of an ailing unprofitable enterprise. From this point of view, the eradication of non-performing loans is a necessary condition to improve the economic status. If the non-performing loans are kept existing and continuously rolled over, the resources are locked up in unprofitable sectors; thus, hindering the economic growth and impairing the economic efficiency (Sultana, 2002).

Kroszner (2002) indicated that, non-performing loans are closely associated with mortgage funds crisis. The Japanese financial crisis to non-performing loans was also linked as group borrower. Japanese banks still suffer under the weight of thousands of billions of yen of bad loans resulting from the collapse in asset prices a decade ago in the country's financial system (Sultana, 2002). The situation calls for an effective strategy to remedy it before it gets out of hand and this

research work seeks among other objectives to come up with recommendations that will help arrest this deteriorating trend or at least help reduce the rate of loan default in MFIs.

NPLs create problems for the financial sector's balance sheet on the asset side. They also create a negative impact on the income statement as a result of provisioning for loan losses. In the worst scenario, a high level of NPLs in a banking system poses a systemic risk, inviting a panic run on deposits and sharply limiting financial intermediation, and subsequently investment and growth. In addition, it could be further exacerbated if it is combined with external shocks, an unfavorable phase of the macroeconomic cycle, or inadequate political or legal support. In this regard, an endeavor has been made in order to determine the inherent factors that cause NPLs. Hence, the current study tends to find out the relationship between non-performing loans and macroeconomic factors in mortgage banks in Kenya.

1.3 Objective of the Study

To identify the major macroeconomic causes of nonperforming loans in the mortgage firms in Kenya.

1.4 Value of the Study

The study will provide an insight on the best approaches mortgage firms should adopt in order to effectively lend and to reduce occurrence of nonperforming loans and enhance profitability. Managers in mortgage industry will find this study significant as it will provides an insight on the relationship between macro economic factors on level of nonperforming loans and be in a position to make the measures to reduce the non performing loans.

The study will be useful to the government in policy making regarding the loan requirements and also for the supervision of mortgage firms in an efforts to mitigate occurrence of non performing loans. This study will therefore act as a guide in designing appropriate policies that will ensure mortgage adopt managing pracrices for the non performing loans to enhance their financial performance.

The study will also be useful to scholars who will find this study useful as it will provide basis upon which further studies on broad subjects on levels of nonperforming loans in mortgage firms can be carried out as well as provide reference for scholars particularly on the effects of macroeconomic factors on non performing loans in mortgage firms in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the existing literature on the subject under research. The matter contained in this chapter relates to past studies on macroeconomic factors and determinants of nonperforming loans under group lending. The chapter also addresses the empirical, summary and research gap of the study.

2.2 Theoretical Review

This section discuss the various theories that underpin the study

2. 2.1 Agency Theory

According to the agency theory, there are two parties in a large corporation (such as a bank), the shareholders who are the principals, and the managers who are the agents. The shareholders are the principal or the main party because the corporation belongs to them. As owners, they receive the profit or bear the loss managers are the agents because they are hired by shareholder to run the day to day task of the corporation. In principal, the agents are supposed to make decisions in the best interest of the principal. To ensure that agents are effective will required the principal to monitor the agent. Without monitoring, most to the managers will diverge from the principal's objectives. They will make decisions which enhance their interest at the expense of shareholders. The tendency for agents to act in their own interest instead of the principal is called the principal-agent problem (Bester, 1994; Bofondi and Gobbi, 2003).

According to the agency theory, the principal agency problem can be reduced by better monitoring such as establishing more appropriate incentives for managers. These are lacking for the following reasons; firstly, market take-over of poorly managed firms by raiders is more difficult because of various government restrictions on corporate equity ownership (McColgan, 2001). Mortgage loans that constitute a large proportion of the assets in most banks' portfolios are relatively illiquid (Koch and MacDonald, 2000).

Screening of borrowers occurs after group self-selection in the form of group expulsions. An important assumption in recent papers such as Ghatak (1999) and Van Tassel (1999) is that perfect information between borrowers allows for homogeneously formed groups, which reduce the relative cost of capital for safe borrowers. There is good reason to believe that information between pools of potential borrowers is stronger than that between the lending institution and the borrowing pool. But in order to access credit at low interest rates, borrowers are still often forced to self-select their jointly liable groups within a haze of imperfect information (Bonin *et al* , 2001).

2.2.2 Capital Market Theory and the Capital Asset Pricing Model

Capital market theory is variously defined but may be considered to comprise the link between modern portfolio theory and asset pricing, being a general theory of asset pricing based on the work of Sharpe, Lintner and Mossin (Parker, 2011). Following research into the capital market line and the security market line, Sharpe (1964) developed a model for stock portfolios that related security returns to the performance of an index of business activity and an error term. Further, for the pricing of assets, capital market theory asserts that it is not the total risk that is important but the level of risk that cannot be diversified away through combining assets within a

portfolio, with investors not being willing to pay a premium for bearing risk that can be diversified away.

The evolution of capital market theory led to the development of the Capital Asset Pricing Model (CAPM) which asserts that the return on any risky asset equals the linear combination of the risk free rate plus the sensitivity of the asset's non-diversifiable or systematic risk to the market portfolio's risk, expressed as beta (Pagliari, 1995).

Through such approaches, strategic asset allocation considers the risk and return of different real estate sectors in different geographic locations and combines these through quantitative analysis into a portfolio forecast to achieve either the highest level of return relative to risk or the lowest level of risk relative to return (Parker, 2011).

2.2.3 Lien Theory of Mortgages

Some banks retain and treat the mortgage as a title theory. Since the mortgage is said to hold a title interest, she has the right to possession under this theory. Some banks apply a lien theory. In states that follow lien theory, the property deed stays with the borrower. The lender files a lien against the property with the county clerk or recorder to protect his security interest in the home. Filing puts the world on notice that the property is subject to a mortgage, which ensures that the homeowner cannot sell the property until he pays off the loan. Once the homeowner pays off the loan, the lender removes the lien. This theory only gives the mortgagee a lien interest in the property (Buckley and Kalarickal, 2004).

In a lien theory bank, the mortgagor retains legal and equitable title to the property, but conveys an interest that the mortgagee can only foreclose upon to satisfy the obligation of the mortgagor. This is equivalent to a future interest in the property which allows the mortgagee to use the process of foreclosure. The interest is a security interest or mortgage, which forms a lien on the property. In this theory the right to possession arises upon a default. The mortgagor has a right to sue the mortgagee for any interference with his right of possession (Buckley and Kalarickal, 2005).

2.3 Determinants of Non Performing Loans in Mortgage Firms

Deterioration in mortgage' loan quality is one of the major causes of financial fragility. Past experience shows that a rapid build-up of bad loans plays a crucial role in banking crises (González-Hermosillo, 1999). In recent years, the global financial crisis and the subsequent recession in many developed countries have increased households' and firms' defaults, causing significant losses for banks. Default culture is not a new dimension in the arena of investment. Rather in the present economic structure, it is an established culture. The redundancy of unusual happening becomes so frequent that it seems people prefer to be declared as defaulters (Sonali, 2001).

2.3.1 Inflation Level

Macroeconomic instability would have consequences for the loan quality of banks in any country. High inflation increases the volatility of business profits because of its unpredictability, and because it normally entails a high degree of variability in the rates of increase of price of the particular goods and services which make up the overall price index. The probability that firms will make losses rise; as does the probability that they will earn windfall profits. Further macroeconomic instability which

is mostly manifested by high inflation rate also makes loan appraisal more difficult for the bank, because the viability of potential borrowers depends upon unpredictable development in the overall rate of inflation, its individual components, exchange rates and interest rates.

Moreover, asset prices are also likely to be highly volatile under such conditions. The future real value of loan security is also very uncertain (Martin Brownbrigde, 1998). Mortgage lending do poorly both when product and asset price prudential policy, inflation accelerates unexpectedly and when inflation decelerates unexpectedly, unemployment increases, and/or aggregate output and income decline unexpectedly.

2.3.2 Rapid Loan Growth

Studies indicate that loan delinquencies are associated with rapid credit growth. Keeton (1999) who used data from commercial banks in the United States (from 1982 to 1996) and a vector auto regression model indicate this association between loan and rapid credit growth. Sinkey and Greenwalt (1991) who have also studied large commercial banks in the US and found out that excessive lending explain loan –loss rate. Salas and Saurina (2002) who studied Spanish banks found out that credit growth is associated with non performing loans. Besides, study by Bercoff, Giovanni and Grimard (2002) shows that asset growth explains NPLs.

2.3.3 High Interest Rate

Financial reform emphasizes the abolition of interest rate and credit ceilings and the promotion of a competitive environment with reduced government control and ownership. Although achieving competitiveness does not imply nonexistence of an interest rate spread, Ho and Saunders (1981) note that the size of the spread is much higher in a non-competitive market,

which also calls for strengthening the regulatory and legal framework to enhance the stability of the market. Caprio (1996) notes that a weak legal system, where the courts are not oriented toward prompt enforcement of contracts and property rights are ill defined, increases credit riskiness and MFIs have no incentive to charge lower rates.

Mortgage firms that charge high interest rate would comparatively face a higher default rate or non performing loans. Study by Sinkey and Greenwalt (1991) on large commercial Banks in US depict that a high interest rate charged by banks is associated with loan defaults. Rajan and Dhal (2003) who used a panel regression analysis indicates that financial factors like cost of credit has got significant impact on NPLs. Study by Waweru and Kalini (2009) on the commercial banks in Kenya using statistical analysis indicates that high interest rate charged by the banks is one of the internal factors that leads to incidence non-performing loans.

2.3.4 Unemployment Rate

Like any other market, the labour market consists of a supply side and a demand side. The labour supply of the population, referred to as the economically active population or labour force, has two components: employed persons and unemployed persons. The labour demand of enterprises and other production units, too, can be broken down in two components: jobs (filled posts) and job vacancies (unfilled posts). Due to the existence of multiple jobholding, the number of jobs tends to be larger than the number of employed persons (Espinoza R 2010).

Unemployment occurs when people are without jobs and they have actively looked for work within the past four weeks (International Labour Organization, 2007). The unemployment rate is a measure

of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force. During unemployment, those who make loan from bank are unable to pay back to bank as the effect of losing their jobs. Without salary, they cannot pay their loan. So, when the unemployment rate is high, so does it go with NPLs amount. Luis Andrade, Sarah Huber, and Antonio Martinez (2009) said that, the level of nonperforming loans was up before the crisis, primarily because the increased leverage of existing customers was a major driver of Latin America's rapid rise in consumer lending. Now, as a result of the recession, rising unemployment is pushing levels of nonperforming loans even higher.

2.4 Empirical Review

In Taiwan, Hu, Li and Chu (2004) carried out their own study examining how ownership structure affects Non-performing Loans (NPLs). Their findings revealed that an increase in the government's shareholding facilitates political lobbying. On the other hand, private shareholding induces more Non-performing Loans (NPLs) to be manipulated by corrupt private owners. The results show that the rate of NPLs decreased as the ratio of government shareholding in a bank rose (up to 63.51%), while the rate thereafter increased. The report posits further that joint ownership has the lowest rate of NPLs among Taiwanese public, mixed and private commercial banks. The joint ownership effect on NPLs ratios is negative and its magnitude is sufficiently large in Taiwan's banking industry. Bank size is negatively related to the rate of NPLs, which supports their argument that larger banks have more resources for determining the quality of loans.

Karabulut and Bilgin (2007) carried out a study with the purpose of examining the impact of the unlimited deposit insurance on Non-performing Loans (NPLs) and market discipline. They

argued that deposit insurance program play a crucial role in achieving financial stability. Governments in many advanced and developing economies established deposit insurance schemes for reducing the risk of systemic failure of banks. The report shows that deposit insurance has a beneficial effect of reducing the probability of a bank run. However deposit insurance systems have their own set of problems. Deposit insurance systems create moral hazard incentives that encourage banks to take excessive risk. In conclusion, the study shows that unlimited deposit insurance caused a remarkable increase at Non-performing Loans (NPLs) for the commercial banks. What this means is that deposit insurance institutions established by monetary authorities must re-examine the current policy of blanket guarantee of deposits in the banking sector.

Chan and Sallahudin (2010) determined the relationship between mortgage firms efficiency and Non-Performing Loans, evidence from Malaysia And Singapore. The objective of this paper is to investigate the relationship between non-performing loans and mortgage firm's efficiency in Malaysia and Singapore. To achieve the objective, cost efficiency was estimated using the stochastic cost frontier approach assuming normal-gamma efficiency distribution model proposed by Greene (1990). The cost efficiency scores were then used in the second stage Tobit simultaneous equation regression to determine the effect of non-performing loans on mortgage firms cost efficiency. The findings obtained from the Tobit simultaneous equation model show that the coefficient of NPL in the equation where cost efficiency is the dependent variable is negative and is statistically significant at the 1% level. The cost efficiency estimation results indicate an average cost efficiency score of 87.68% for the full sample. This suggests that banks are wasting 12.32% of their inputs .This indicates that non-performing loan have a negative

effect on cost efficiency. The results indicate that there is no significant difference in cost efficiency between mortgage firms in Singapore and Malaysia although mortgage firms in Singapore exhibit a higher average cost efficiency score.

Siddigui and Shah (2012) carried out a study on the impact of interest rates volatility on Nonperforming loans in Pakistan .The Research covered the periods between 1996 and 2012.The researchers used weighted average lending interest rates as published quarterly by the state bank of Pakistan. The study focused on 21 commercial banks and the weighted average NPLs was obtained from the financial statements. The study concluded that rising NPLs in Pakistan are significantly but not solely impacted by the volatility in the cost of borrowing.

Fuentes and Maquieira (2013) undertook an in-depth analysis of loan losses due to the composition of lending by type of contract, volume of lending, cost of credit and default rates in the Chilean credit market. Their empirical analysis examined different variables which may affect loan repayment: (a) limitations on the access to credit; (b) macroeconomic stability; (c) collection technology; (d) bankruptcy code; (e) information sharing; (f) the judicial system; (g) prescreening techniques; and (h) major changes in financial market regulation. They concluded that a satisfactory performance of the Chilean credit market, in terms of loan repayments hinges on a good information sharing system, an advanced collection technology, macroeconomic performance and major changes in the financial market regulation.

Bercoff, Giovanniz *and* Grimardx (2013) using accelerated failure time (AFT) model in their study of Argentina's banking sector's weakness measured by the ratio of non-performing loans

to total loans found that both bank specific indicators such as asset growth, the ratio of net worth to net assets, the ratio of operating cost to assets, exposure to peso loans, and institutional characteristics relating to private bank and foreign bank and macroeconomic variables including credit growth, foreign interest rate, reserve adequacy (imports/reserves) and monetary expansion (M2/reserves), besides the *tequila* effect were reasons behind the banking fragility. Their empirical results suggested that bank size measured by log of assets had a positive effect but asset growth had a negative effect on NPLs. The variables such as operating cost, exposure to peso loans, credit growth, and foreign interest rate had negative effect on NPLs. The macroeconomic variables such as money multiplier, and reserve adequacy, institutional characteristics and *tequila* effect had positive influence on NPLs.

Mwangi (2010) carried out a study on relationship between Non performing loan and financial performance of commercial banks in Kenya. The objective of the study was to establish the relationship between for non-performing loans management practices and financial performance of commercial banks in Kenya. The study adopted a causal design was adopted as the research design major emphasis was on determining a cause-and-effect relationship between non-performing loans management practices and financial performance of commercial banks in Kenya. The population of this study consisted of all 46 commercial banks in Kenya. The primary data was collected using structured questionnaires and consisted of responses offered on management techniques that commercial banks apply in managing their non-performing loans. The research was both quantitative and qualitative in nature. The data collected was checked for completeness and analyzed using the statistical package for social sciences (SPSS version 17) package. Tables and charts were used for presentation of the analyzed data.

The study concludes that there is a need for commercial bank to adopt non-performing loans management practices, such as ensuring sufficient collaterals, limiting lending to various kinds of businesses, loan securitization, ensuring clear assessment framework of lending facilities and use of procedures in solving on problematic loans among others. The study further concludes that there was a positive relationship between non-performing loans management practices and the financial performance of commercial banks in Kenya which implies that adoption of non-performing loans management practices leads to improved financial performance of commercial banks in Kenya. However, she did not establish the extent to which lending affected level of nonperforming loans.

Wairimu (2010) established the relationship between mortgage financing and financial performance in commercial banks. The objective of the study was to establish the effects of mortgage financing on performance of the firms. The objective of the study was to establish the relationship between factor influencing mortgage financing and performance of mortgage institutions in Kenya. This research study was a causal design. Which enabled the researcher to establish the relationship between factors influencing mortgage financing and performance of mortgage institutions in Kenya. The target population for the study was 46 mortgaging firms in Kenya that offer mortgage financing services. The researcher used primary data. The study found that mortgage firms in Kenya emphasizes on mortgage financing to improve firm performance.

The study concludes that mortgage financing is influenced by market and financial factors which includes increase investment and Improve Profitability of the firm, improvement of risk management, attraction of more customers ,promotion of innovations, Market Penetration,

diversification of investment and encountering competitions in the market lowering of interest on Treasury bond, Kenya financial laws require bank to have less cash in reserve and High interest from Mortgage led to default leading to increase in nonperforming loans. The study there established that there is positive relationship between mortgage firms' performance with factors influencing mortgage financing which are encountering competitions in the Marketing, creating of wealth, improving saving, high interest from mortgage, diversification of investment and Increase investment

Kendi (2013) conducted a comparative study of the preference of MFI's individual lending versus group lending and found out that MFI's in Kenya prefer lending to individuals. This research analyzed how group(joint liability) lending models affect repayment rates by examining what countervailing processes may affect repayments which have not yet been analyzed.

Kiragu (2013) sought to find out how the lending mechanisms affect the development of women based enterprises in rural areas in Kenyenyee, Kisii County. The researcher concluded that the group lending mechanisms were effective in ensuring timely access to funds, instilling supervision and administration traits among the entrepreneurs as well as enhancing enterprise stability and development over time, and the mechanisms should be upheld as they ensure increased probability of accessing funds and leads to establishment of essential business linkages and partners.

2.5 Summary of Literature Review

The term Non-Performing Loans is used interchangeably with bad loans and impaired loans as identified in Fofack (2005). Berger and De young (1997) also describes these types of loans as “problem loans” In broad context, loans that are outstanding in both interest and principal for a period of time contrary to terms and conditions spelt out in the loan agreement are considered as non performing loans. Available literature gives varied descriptions of nonperforming loans. Some researchers observe that whilst certain countries use quantitative criteria, e.g the number of days the credit facility is overdue, others rely on qualitative criteria such as information about the customer’s financial status and management judgement about future payment (Bloem & Gorter (2001).

Non-Performing loans are one of the major causes of the economic stagnation problems in an economy. Each non-performing loan in the financial sector is viewed as an obverse mirror image of an ailing unprofitable corporate enterprise. From this perspective, the management of non-performing loans is a necessary condition to improve the economic status. If the non-performing loans are kept existing and continuously rolled over, the resources are locked up in unprofitable sectors; thus, hindering the economic growth and impairing the economic efficiency.

Westermann (2003) compares the cases of Germany after the credit boom of the late 1990s and Japan aftermath of the bubble burst in early 1990s. He argues that even though the German banks were in a better condition than Japanese banks, as the path of German’s aggregate credit looks so similar to that of Japan, it is at least unlikely that the German credit slowdown was entirely driven by demand, while that of Japan was mostly caused by lack of supply. There must

at least be some supply side changes that affect the aggregate credit, and differences only exist in the magnitude of the problem.

For the Spanish banking sector, Jimenez and Saurina (2006) present evidence that the NPL ratio is explained by GDP growth, real interest rates and credit conditions. Based on their model, they also try to find the determinants of NPL in the Guyanese banking sector. They found that the real effective exchange rate (REER) has a positive effect on impaired loans. The result indicates that whenever there is an appreciation of the local currency, the NPL portfolios of credit institutions are expected to be high. Their results demonstrate that GDP growth is negatively associated to the NPL, suggesting that the improvement in GDP leads, in real economy, to decrease NPL. They also found when banks offering loans with high interest rates and lend too much are expected to acquire higher levels of impaired loans.

Mortgage companies and banks that offer mortgage loans, hold diversified portfolios of mortgage loans and therefore spreading risks in a manner that would be impossible if individuals were making mortgage loans directly. Since mortgage companies are large in size and number they gain in economies of scale. They also have more expertise in analyzing credit, setting up loans, and making collections than individuals; thus reducing costs of processing loans and subsequently increasing the availability of real estate loans. Mortgage financing requires borrowers to put in some savings to finance part of the cost of property by making a down payment.

Again, large non performing loan portfolio tends to undermine the mortgage's company's ability to grant more credit. This is because the loanable funds tend to deplete when repayment of loans delays or fail to come. Another important implication of nonperforming loans; which is sometimes described as "toxic asset" is the loss of confidence on the part of depositors and investors leading to liquidity challenges. Yet again, another implication of non performing for the mortgage's institutions is the that huge amounts written off as bad debt adversely affect the growth of the shareholders wealth since the profit which is re-invested(ploughed back) into the business to grow the capital base is reduced as a result of provision for credit losses. In a similar token, dividend payment is equally negatively affected because the provision for credit losses are deducted before dividends are declared (Berger and De young 1997)

The minimization of NPL is a necessary condition for improving economic growth. When NPL retained permanently, these will have an impact on the resources that are enclosed in unprofitable areas. Thus, NPL are likely to hamper economic growth and reduce the economic efficiency (Ham, 2007). The shocks to the financial system can arise from factors specific to the company (idiosyncratic shocks) or macroeconomic imbalances (systemic shocks). In general, the researches adopted in the developed economies have confirmed that macroeconomic conditions affect credit risk. Various studies have been conducted on the determinants of loan repayment performance in different countries but few of such studies have been conducted in Kenya trying to ascertain the effects of the environment on loan repayments in various macroeconomic conditions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodology that was used to carry out the research. It presented the research design, the population, sample size and sampling procedure, data collection and data analysis.

3.2 Research Design

Research design refers to the way the study is designed, that is the method used to carry out the research (Mugenda and Mugenda, 2003). Descriptive Research is the investigation in which quantity data would be collected and analysed in order to describe the specific phenomenon in its current trends, current events and linkages between different factors at the current time.

The major purpose of descriptive survey research design is to describe the state of affairs as it is at present. According to Mugenda and Mugenda (1999) a descriptive research is a process of collecting data in order to answer questions concerning the current status of the subjects in the study. The research design was selected as it help in establishing the relationship between group borrowing and non performing loan in mortgage firms in Kenya.

3.3 Target Population

A population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. This definition ensures that population of interest is

homogeneous. The population of this study was all 36 mortgage firms including banks, corporation and government ministry of housing (Appendix 1). The study adopted a census survey where the entire 36 mortgage provider Institutions. Census population studies are more representative because everyone has equal chance to be included in the final sample that is drawn according to Mugenda and Mugenda (2003).

3.4 Data Collection

The study used secondary data information that was obtained from articles, books, newspapers, internet and magazines. To a large extent, secondary data of the study was collected from the financial statements of the Mortgage institutions and books. Of critical importance were articles with information on loan growth, Inflation Level, mortgage Interest Rate, Institution size, cost efficiency and ownership structure. The study collected for a period of four years from 2010 to 2013. The study restricted dataset to include only mortgage institutions whose data was reasonably reliable.

3.5 Data Analysis

Data was analyzed through description statistics, means and standard deviations to determine the extent to which macroeconomic factors influence level of nonperforming loans in mortgage institutions. Further inferential statistics regression analysis was done to establish whether there exists a significant relationship between macroeconomic factors and non performing loans in mortgage institutions. Lending of mortgage loans is mainly a function of lending risk and lending returns hence the general regression equation is of the form:

$$(\text{GNPL } j, t) = \beta_0 + \beta_1 (Gt) + \beta_2 (\text{UN } j, t) + \beta_3 (\text{RIR } j, t) + \beta_4 (\text{LLR/TL}_{j,t}) + \varepsilon_{j,t}$$

Where;

GNPL j, t is the ratio of gross non-performing mortgage loans in a group lending context to gross mortgage advances.

G is the expected GDP growth to capture joint lending response to macroeconomic and business environment for institution j in time $t-1$.

UN j, t is the rate of unemployment at period t .

RIR j, t is the real interest rate at year t .

LLR/TL $_{j,t}$ is the loan losses reserves for institution j in year t .

β_0 is a constant, the value of GNPL when all Xs are zero

$\varepsilon_{i,t}$ is the random error term accounting for all other variables that affect mortgage loans default but not captured in the model.

3.6 Hypotheses Testing

3.6.1 Multiple Linear Regressions

Regression analysis is a powerful and flexible procedure for analyzing associative relationships between a metric dependent variable and one or more independent variables. It could used to determine whether the independent variables explain a significant variation in the dependent variable, to see whether a relationship exists and also to determine how much of the variation in the dependent variables can be explained by the independent variables, to see the strength of the relationship.

3.6.2 Correlation Coefficient

Researchers used the correlation to know the relationship between the dependent and independent variables. The correlations were used to determine whether the relationships are weak or strong with the negative or positive association. The Pearson correlation matrix is obtained for the five interval-scaled variables. The function is to measure the closeness of the relationship between two or more variables. This testing was used to test whether to accept or reject the hypotheses.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPREATION

4.1 Introduction

This chapter presents the data analysis, presentation and interpretation of the study, the study analyzed the relationship between macroeconomic factors and non performing loans in mortgage firms in Kenya for duration of four year starting year 2010 all the way to 2013. The data was collected from 36 mortgage firms as per the Central bank of Kenya.

4.2 Analysis of Descriptive Statistics for 2010-2013

| | 2010 | 2011 | 2012 | 2013 | Combined |
|-------------------------------|-------|-------|-------|-------|----------|
| GDP growth | 5.8 | 6.4 | 4.6 | 4.7 | 5.37 |
| Rate of Unemployment (%) | 13.87 | 8.41 | 14.01 | 10.73 | 11.75 |
| Real interest rate (%) | 3.93 | 4.11 | 7.68 | 5.73 | 5.36 |
| Loan losses reserves Rate (%) | 6.12 | 5.51 | 7.58 | 9.55 | 7.19 |
| Mortgage NPL Growth Rate (%) | 10.86 | 12.74 | 13.36 | 12.81 | 12.44 |
| NPLs to Loans Rate (%) | 6.83 | 2.90 | 5.18 | 8.75 | 5.92 |

Table 4.2

The findings in Table 4.2 presents the mean values for the mean value for each of the yearly macro economic factors and non performing level in mortgage firms in Kenya for the variables, and the standard errors are presented in the brackets.

From the basic data description, the study establishes general idea of the situations of macroeconomic and level of non-performing loans in different mortgage firms. The study found

that GDP growth rate was at 5.8 % in year 2010, 6.4% in the year 2011 but decline in year 2012 to 4.6% before slightly increasing to 4.7 in the year 2013. The study revealed that rate of unemployment had been high from 2010 to 2013 with the lowest rate of unemployment being in the year 2011 at 8.41% and the highest level of unemployment being at 14.01%.

The study found that that the rate of real interest rate had been steady increasing from the year 2010 to 2012 from 3.93% in the year 2010 to 7.68% in the year 2012 but decline in the year 2013 to 5.73%. On loan losses reserve ratio, the study found that mortgage firms had been increasing its loan loss reserve as rate of loan loss reserve had been increase over the years from 2010 , 2012 and 2013 at 6.12%, 7.58% and 9.55 % respectively with a decline being experience in the years 2011 which had a loan loss reserve ratio of 5.51%.

From the Table 4.2, the study found that Mortgage NPL Growth Rate for the mortgage firms had been high and increasing from 2010 to 2013. The study found that Mortgage NPL Growth Rate for 2010 was 10.86%, Mortgage NPL Growth Rate in 2011 was 12.74%, Mortgage NPL Growth Rate in year 2012 increased to 13.36 % while Mortgage NPL Growth Rate in 2013 was 12.81%. This clearly indicated that non Performing loan in mortgage firms had been increasing over the years 2010 to 2013 with the highest level of Mortgage NPL Growth being in the year 2012.

The study found that that NPLs to loan rate being high at 8.75% in the year 2013 and lowest NPLs to Loans Rate at 2.90 % in the year 2011. This indicated that the NPL rates were quite high for mortgage firms in Kenya. The NPL to loan rates for the year 2012 was at -5.18% suggesting that although non-performing loans may be high, the loan quality may be

improving in among the mortgage firms in Kenya.

4.3 Correlation Analysis

| | Rate of Unemployment | Real interest rate | Loan losses reserves Rate | GDP growth | Level of Non performing Loan |
|------------------------------|----------------------|--------------------|---------------------------|------------|------------------------------|
| | 1 | | | | |
| Rate of Unemployment | 0.000 | | | | |
| Real interest rate | .7209* | 1 | | | |
| Loan losses reserves Rate | .567* | .534 | 1 | | |
| GDP growth | -.6104* | .592 | 0.433 | 1 | |
| Level of Non Performing Loan | .5904* | .834 | 0.537 | 0.619 | 1 |

Table 4.3

A partial correlation analysis using Karl Pearson correlation coefficient was performed. A positive coefficient indicated a positive relationship between the variables correlated.

From the Table 4.3. The study revealed that there existed significance negative and positive correlation between GDP growth and Non Performing loan as Correlation coefficient $r = -0.6104$, $P = 0.021 < 0.05$. This implied that increase in GDP growth in the economy contributes to lowering Non performing loans in mortgage firms while decrease in GDP growth rate would significantly lead to Non Performing Loans in mortgage firm in Kenya. The study found that there existed significance strong and positive correlation between rate of unemployment and Level of Nonperforming loan as Correlation coefficient $r = 0.5904$, $P = 0.0001 < 0.05$. This implied that high rate of unemployment in the economy contribute to Non-Performing loans in mortgage firms in Kenya.

The study found established that there a significant strong positive correlation between real Interest rates and Non Performing Loans as correlation coefficient factor $r = 0.7209$,

$P=0.0001 < 0.05$. The study also established that there existed a significant strong positive correlation between Loan Loss reserve Rates and Non performing Loans as correlation coefficient factors was $r=0.567$, $P=0.00021 < 0.05$. This implied that increase in NPLs would lead to mortgage firms significantly increase loan loss reserve to cover up for the NPLs.

4.4 Regression Analysis

A regression analysis between the dependent variable and the independent variables was performed; independent variables being level of Non Performing Loan while GPD growth, Rate of Unemployment and Rate of real interest

| R | R Square | Adjusted R Square | Std. Error of the Estimate | Sig Level |
|-------|----------|-------------------|----------------------------|-----------|
| 0.861 | 0.7413 | 0.681 | 0.412 | 0.0021 |

Table 4.4

Predictors: (Constant), GPD growth, Rate of Unemployment and Rate of real interest

Dependent: Level of Non Performing Loans

Results are as indicated in tables 4.1 to 4.4. Results in table 4.1 indicate that the r-squared for the model was 0.7413 indicating that there existed a significant correlation between monetary factors and Non performing Loans in mortgage firm. The study established that there existed a coefficient of variation between variables was 0.681, $P=0.0021 < 0.05$, which indicates that there existed a significant variation of 62.7% between Non Performing Loan and monetary factors. This indicates that the regression model had a significant strong explanatory power as only about 37.3% of variation in NPLs and Monetary factor was not explained by the model.

4.5 Analysis of Variances

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|-------|----------------|----|-------------|---|------|
|-------|----------------|----|-------------|---|------|

| | | | | | |
|------------|----------|-----|-------|--------|--------|
| Regression | 566.346 | 15 | 1.059 | 12.186 | 0.001a |
| Residual | 2021.654 | 128 | 0.893 | | |
| Total | 2588.000 | 143 | | | |

Table 4.5

Predictors: (Constant), GPD growth, Rate of Unemployment and Rate of real interest

Dependent: Level of Non Performing Loans

The study established that there existed a significant goodness of fit between variable as $F=12.186$, $P=0.001 < 0.05$. The calculated $F=12.186$ exceeds the F-critical of 3.5707. This implied there the level of variation between independence and dependent variable was significant at 95% confidence level.

4.6 Regression Coefficients

Results in table 4.3 below present the test of the statistical significance of the independent variables in the model. This provides the estimates of independent variables, their standard error and the t-ratios.

| Model | Unstandardized Coefficients | | Standardized | t | Sig. |
|-----------------------|-----------------------------|------------|--------------|--------|-------|
| | B | Std. Error | Coefficients | | |
| | B | Std. Error | Beta | | |
| (Constant) | 5.445 | 9502.845 | | 5.978 | .0106 |
| GPD growth | -.411 | .311 | .812 | 10.336 | .0011 |
| Rate of Unemployment | .381 | .126 | .291 | 2.703 | .0018 |
| Rate of real interest | .469 | 0.182 | 0.023 | 6.145 | 0.014 |

Table 4.6

Predictors: (Constant), GPD growth, Rate of Unemployment and Rate of real interest

Dependent: Level of Non Performing Loans

From the findings in the regression model the study found that holding GDP growth, Rate of Unemployment and Rate of real interest constant at (Zero), Level of NPLs would be at 5.445. From the regression analysis, the study established that there existed a significant negative relationship between Growth of GDP and Non Performing Loan in mortgage firms as $r=-0.411$, $p=0.0011 < 0.05$, $t= 10.336$. This implied that increase on GDP growth rates would lead to decrease in level of Nonperforming loans experience by the mortgage firms.

From the regression results, the study found that the unit increase in rate of unemployment would lead to a significant positive increase in Non Performing Loan by factor $r= 0.381$, $P=0.0018$, $t=2.703$. The study also found that a unit increase in Rate of real interest would lead to positive and significant increase in Non Performing Loans by factor $r=0.469$, $P=0.014$, $t=6.575$). This implied increase in rate of real interest would increase cost of mortgage thereby asserting more cost on mortgage loans and results in NPLs .

The coefficients were found to be significant and therefore the regression equation would be;

$$Y= 5.445 + -0.411X_1 + 0.381X_2 + 0.469X_3$$

where:

X_1 - GDP growth

X_2 - Rate of Unemployment

X_3 - Rate of real interest

4.4. Discussion of the Findings

The study established that GDP growth rate was at 5.8 % in year 2010, 6.4% in the year 2011 but decline in year 2012 to 4.6% before slightly increasing to 4.7 in the year 2013. The study revealed that rate of unemployment had been high from 2010 to 2013 with the lowest rate of unemployment being in the year 2011 at 8.41% and the highest level of unemployment being at 14.01%.

The study established that rate of real interest rate had been steady increasing from the year 2010 to 2012 from 3.93% in the year 2010 to 7.68% in the year 2012 but decline in the year 2013 to 5.73%. On loan losses reserve ratio, the study found that mortgage firms had been increasing its loan loss reserve as rate of loan loss reserve had been increase over the years from 2010 , 2012 and 2013 at 6.12%, 7.58% and 9.55 % respectively with a decline being experience in the years 2011 which had a loan loss reserve ratio of 5.51%. The finding were similar to Salas and Saurina (2002) who studied Spanish banks found out that credit growth is associated with non performing loans.

Besides, study by Bercoff, Giovanni and Grimard (2002) shows that asset growth explains NPLs .The study also found that Mortgage NPL Growth Rate for the mortgage firms had been high and increasing from 2010 to 2013 and this could had increase cost of mortgage loans. The study found that Mortgage NPL Growth Rate for 2010 was 10.86%, Mortgage NPL Growth Rate in 2011 was 12.74%, Mortgage NPL Growth Rate in year 2012 increased to 13.36 % while Mortgage NPL Growth Rate in 2013 was 12.81%. This clearly indicated that non Performing loan in mortgage firms had been increasing over the years 2010 to 20`3 with the highest level of

Mortgage NPL Growth being in the year 2012.

The study revealed that there existed significance negative correlation between GDP growth and Non Performing loan as Correlation coefficient $r=-0.6104$, $P=0.021<0.05$. This implied that increase in GDP growth in the economy contributes to lowering Non performing loans in mortgage firms while decrease in GDP growth rate would significantly lead to reduction in Non Performing Loans in mortgage firm in Kenya. The finding concurred with Martin Brownbrigde, 1998) who found that Mortgage lending do poorly both when product and asset price prudential policy, inflation accelerates unexpectedly and when inflation decelerates unexpectedly, unemployment increases, and/or aggregate output and income decline unexpectedly.. The study found that there existed significance strong and positive correlation between rate of unemployment and Level of Nonperforming loan as Correlation coefficient $r=0.5904$, $P=0.0001<0.05$. This implied that high rate of unemployment in the economy contribute to Non-Performing loans in mortgage firms in Kenya.

The study established that mortgage firms had been experiencing high rates of NPLs at 8.75% in the year 2013 and lowest NPLs to Loans Rate at 2.90 % in the year 2011. This indicated that the NPL rates were quite high for mortgage firms in Kenya. This could imply that macroeconomic factors were significantly leading to occurrence of NPLs in mortgage industry

The study found established that there a significant strong positive correlation between real Interest rates and Non Performing Loans as correlation coefficient factor $r=0.7209$, $P=0.0001<0.05$ implying that high interest rates charge on Mortgage loans fould results to high cost of mortgage and results high rate of defaults. Ths finding were similar to Sinkey and

Greenwalt (1991) who found that mortgage firms that charge high interest rate would comparatively face a higher default rate or non performing loans. The study also established that there existed a significant strong positive correlation between Loan Loss reserve Rates and Non performing Loans as correlation coefficient factors was $r=0.567$, $P=0.00021<0.05$. This implied that increase in NPLs would lead to mortgage firms significantly increase loan loss reserve to cover up for the NPLs. The findings are supported by Saurina (2002) who found out that credit growth was associated with non performing loans in Spanish mortgage sectors.

The study revealed that increase on GDP growth rates would lead to decrease in level of Nonperforming loans experience by the mortgage firms. The study revealed that there existed a significant negative relationship between Growth of GDP and Non Performing Loan in mortgage firms as $r=-0.411$, $p=0.0011<0.05$, $t=10.336$.

The study also found that unit increase in rate of unemployment would lead to a significant positive increase in Non Performing Loan by factor $r=0.381$, $P=0.0018$, $t=2.703$. This implied that without salary, Mortgage loan could not be paid and therefore when unemployment rate is high, NPLs increase. This finding concurred with Luis Andrade, Sarah Huber, and Antonio Martinez (2009) who found that, the level of nonperforming loans was up before the crisis, primarily because the increased leverage of existing customers was a major driver of Latin America's rapid rise in consumer lending. Now, as a result of the recession, rising unemployment is pushing levels of nonperforming loans even higher.

The study also found that a unit increase in Rate of real interest would lead to positive and significant increase in Non Performing Loans by factor $r=.469$, $P=0.014$, $t=6.575$). This implied

increase in rate of real interest would increase cost of mortgage thereby asserting more cost on mortgage loans and results in NPLs. This implied that high real interest charge on mortgage loan would significantly lead to occurrence of Non Performing Loan. This finding concurred with Study by Waweru and Kalini (2009) who carried a study on the commercial banks in Kenya using statistical analysis and found that high interest rate charged by the banks was one of the internal factors that leads to incidence non-performing loans.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of key findings, which are set out in line with the study themes or objectives. The objectives of the study was to determine major macroeconomic causing nonperforming loans in the mortgage institutions in Kenya and to determine the relationship between macroeconomic factors and Non performing Loans in Mortgage firms in Kenya

5.2 Summary of Findings

The study established that GDP growth rate, rate of unemployment, rate of real interest rate, loan losses reserve ratio, influence occurrence of Non Performing Loans. The growth of NPLs in mortgage firms was found to significantly be contributed but change in macroeconomic factors asset growth explains NPLs .The study also found that Mortgage NPL Growth Rate for the mortgage firms had been high and increasing from 2010 to 2013 and this could had increase cost of mortgage loans.

The study established that there existed significance negative correlation between GDP growth and Non Performing loan. This implied that increase in GDP growth in the economy contributes to lowering Non performing loans in mortgage firms while decrease in GDP growth rate would significantly lead to reduction in Non Performing Loans in mortgage firm in Kenya. Mortgage lending do poorly both when growth of GDP was negative and performed well when the growth of GDP. Increase in inflation accelerates unemployment increases, and/or aggregate output and income

decline unexpectedly resulting to high rate of defaults.

The study found that there existed significance strong and positive correlation between. This implied that high rate of unemployment in the economy contribute to Non-Performing loans in mortgage firms in Kenya. The study found established that there a significant strong positive correlation between real Interest rates and Non Performing.

The study also established that there existed a significant strong positive correlation between Loan Loss reserve Rates and Non performing Loans. This implied that increase in NPLs would lead to mortgage firms significantly increase loan loss reserve to cover up for the NPLs. The findings are supported by Saurina (2002) who found out that credit growth was associated with non performing loans in Spanish mortgage sectors.

The study revealed that increase on GDP growth rates would lead to decrease in level of Nonperforming loans experience by the mortgage firms. The study revealed that there exists a significant negative relationship between Growth of GDP and Non Performing Loan in mortgage firms.

The study established that increase in rate of unemployment would lead to a significant positive increase in Non Performing Loan as without salary, Mortgage loan could not be paid and therefore when unemployment rate is high, NPLs increase. The level of nonperforming loans was up before the crisis, primarily because the increased leverage of existing customers was a major driver of Latin America's rapid rise in consumer lending. Now, as a result of the recession, rising unemployment is pushing levels of nonperforming loans even higher.

The study found that high rate of real interest would lead to positive and significant increase in Non Performing Loans. Increase in rate of real interest would increase cost of mortgage thereby asserting more cost on mortgage loans and results in NPLs. This implied that high real interest charge on mortgage loan would significantly lead to occurrence of Non Performing Loan. High interest rate charged by the banks was one of the internal factors that leads to incidence non-performing loans.

5.3 Conclusion

The study concluded that GDP growth rate, high rate of unemployment, high rate of real interest rate, loan losses reserve ratio, significantly led to occurrence of Non Performing Loans. The growth of NPLs in mortgage firms was found to significantly be contributed increase in GDP growth in the economy lead to high rate of employment, increase in income per capital and increase high rate of loan repayment contributes towards lowering Non performing loans in mortgage firms while decrease in GDP growth rate would significantly lead to reduction in Non Performing Loans in mortgage firm in Kenya. Negative growth of GDP would results in inflation, accelerates unemployment increases, and/or aggregate output and income decline unexpectedly resulting to high rate of defaults.

The study concluded that there existed significance strong and positive correlation between unemployment, real Interest rates in the economy contribute to Non-Performing loans in mortgage firms in Kenya. Unemployment and high interest rates charge on Mortgage loans would results to lack of salary and high cost of mortgage resulting high rate of defaults. Mortgage firms that charge high interest rate would comparatively face a higher default rate or non performing loans.

The study concluded that growth in credit would lead to Non performing Loans as this increase in credit growth was related to loan delinquencies. The study also established that there existed a significant strong positive correlation between Loan Loss reserve Rates and Non performing Loans and increase in NPLs would lead to mortgage firms significantly increase loan loss reserve to cover up for the NPLs.

The study concluded that positive GDP growth rates would lead to decrease in level of Nonperforming loans experience by the mortgage firms as GDP growth rates would lead to increase in employment rate, lowering inflation rates and led to reduction in Non Performing Loan in mortgage firms.

The study concluded that the rate of unemployment would lead to a significant positive increase in Non Performing Loan as without salary, Mortgage loan could not be paid and therefore when unemployment rate is high, NPLs increase. The level of nonperforming loans was up before the crisis, primarily because the increased leverage of existing customers was a major driver of rapid rise in consumer lending.

The study concluded that concluded that high rate of real interest would lead to positive and significant increase in Non Performing Loans. Increase in rate of real interest would increase cost of mortgage thereby asserting more cost on mortgage loans and results in NPLs. High real interest charge on mortgage loan would significantly lead to high rate of defaults.

5.4 Recommendations

The study recommends that management in mortgage sectors should carefully study the growth rate of the economy when determining their mortgage loan. This was because unstable growth rates in GDP would result into poor loan quality of mortgage firms in, high inflation increases the volatility of mortgage firms profits because of its unpredictability resulting into high degree of variability in the rates of increase of price of mortgage lending, increase real interest rate, loan losses reserve ratio, significantly leading to occurrence of Non Performing Loans.

The growth of GDP would therefore contribute to high rate of employment, increase in income per capital and increase high rate of loan repayment contributes towards lowering nonperforming loans in mortgage firms while decrease in GDP growth rate would significantly lead to reduction in Non Performing Loans in mortgage firm in Kenya. Negative growth of GDP would result in inflation, accelerates unemployment increases, and/or aggregate output and income decline unexpectedly resulting to high rate of defaults.

The study recommends that management in mortgage sectors should consider employment status of their customers as high rate of employment would result to high rate of salary which empowers customer to honor their obligation to pay for their mortgage loan and reduces occurrence of nonperforming Loan as without salary, Mortgage loan could not be paid and therefore when unemployment rate is high, NPLs increase. The level of nonperforming loans was up before the crisis, primarily because the increased leverage of existing customers was a major driver of rapid rise in consumer lending.

The study recommends that management of mortgage firms should sought measures that would reduce rate of real interest as this would reduce the cost of mortgage loans. This would ease the burden on loans and results into reduction in defaults rates thereby reducing occurrence of Non Performing Loans. Mortgage firms should therefore charge lower interest to mitigate occurrence of high default rate or non performing loans.

5.5 Limitation of the Study

The study faces limitations. Obtaining of data from the Mortgage firms was a great challenge and the management in the institutions was uncooperative, however the researcher explained that the data that was to be obtained was for academic purpose only. In attaining its objective the study was limited to 36 Mortgage firms which were registered with Central Bank whose data was sourced.

The study is also limited to the degree of precision of the data obtained from the Mortgage firm's financial reports. To mitigate the challenge, the study accepted a confidence level of 95%.

The study also faces challenges of time resources limiting the study from collecting information for the study particularly where the Mortgage firm's management delayed giving the financial reports. To mitigate this, the researcher made often follow up and enhance collection of sufficient data from the Mortgage firms and Central bank of Kenya.

5.5 Suggestion for Further Research

The study focused on determining the relationship between monetary factors and Non performing loans in mortgage firms in Kenya. A further study could be carried out to

determining relationship between monetary factors and Non performing loans in other financial institution such Deposit Taking microfinance or Deposit Taking SACCOs in Kenya. Future research could address the impact monetary policy on financial performance of the mortgage firms.

There is need for further studies to investigate the performance of financial institutions loans from the beneficiaries' side especially those receiving funds from micro finance institutions. The excellent performance of microfinance institution brought about by a well-coordinated mix of appraisal and follow up actions may be at the expense of the borrower. Possible key success factors that could be tested in the future are the provision of training and education services for clients in the program, of savings accounts and of other financial services, such as insurance, housing loans, and pensions.

The current study did not consider the reasons and motivation to borrow despite the macroeconomic circumstances. Another area that has not been investigated is the difficulties that the borrowers face to repay the loan. These areas deserve to be studied by future

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APPENDICES

Appendix I: List of Commercial Banks and mortgage institutions in Kenya as at 01 March 2014. The Homes Expo Journal (March, 2014)

1. African Banking Corporation Ltd
2. Bank of Africa Kenya
3. Bank of Baroda (K) Ltd
4. Bank of India
5. Barclays Bank of Kenya Ltd
6. CFC Stanbic Bank Ltd
7. Chase Bank (K) Ltd
8. Commercial Bank of Africa Ltd
9. Consolidated Bank of Kenya Ltd
10. Co-operative Bank of Kenya Ltd
11. Development Bank Kenya Ltd
12. Diamond Trust Bank (K) Ltd
13. Dubai Bank of Kenya Ltd
14. Ecobank Kenya Ltd
15. Equitorial Commercial Bank Ltd
16. Equity Bank Ltd
17. Family Bank Ltd
18. Fidelity Commercial Bank Ltd
19. First Community Bank Ltd
20. Giro Commercial Bank Ltd
21. Gulf African Bank Ltd
22. Habib Bank Ltd
23. Housing Finance Company Ltd
24. Imperial Bank Ltd
25. I&M Bank Ltd
26. Jamii Bora Bank Ltd
27. Kenya Commercial Bank Ltd

28. K-rep Bank Ltd
29. Middle East Bank (K) Ltd
30. National Bank of Kenya Ltd
31. National Housing Cooperation
32. NIC Bank Ltd
33. Oriental Commercial Bank Ltd
34. Prime Bank Ltd
35. Standard Chartered Bank (K) Ltd
36. Trans National Bank Ltd

Appendix II: Total non-performing loans (kshs in millions)

| BANKS | 2010 | 2011 | 2012 | 2013 |
|----------------------------|-------------|-------------|-------------|-------------|
| ABC bank | 33 | 30 | 27 | 29 |
| Bank of Africa | 35 | 37 | 39 | 40 |
| Bank of Baroda | 22 | 28 | 31 | 25 |
| Bank of India | 29 | 35 | 34 | 37 |
| Barclays Bank of Kenya | 3 | 3 | 4 | 2 |
| CFC Stanbic | 4 | 26 | 26 | 31 |
| Chase Bank | 28 | 31 | 35 | 34 |
| Citibank | 36 | 25 | 21 | 18 |
| Citiy Finance Bank | 39 | 32 | 30 | 24 |
| Commercial Bank of africa | 10 | 11 | 10 | 9 |
| Consolidated Bank | 16 | 12 | 11 | 11 |
| Cooperative Bank of Kenya | 2 | 2 | 3 | 4 |
| Credit Bank | 32 | 27 | 20 | 23 |
| Development Bank of Kenya | 26 | 33 | 28 | 27 |
| Diamond trust Bank | 25 | 34 | 32 | 36 |
| dubai Bank | 21 | 20 | 23 | 28 |
| Eco Bank | 5 | 5 | 5 | 7 |
| Equitorial commercial Bank | 34 | 36 | 25 | 32 |
| Equity | 6 | 9 | 13 | 16 |
| Family | 23 | 16 | 42 | |
| Fidelity Commercial Bank | 37 | 29 | 29 | 30 |
| First Community Bank | 42 | 42 | 41 | 41 |
| Giro Bank | 27 | 21 | 16 | 15 |
| Guardian Bank | 14 | 8 | 8 | 10 |
| Gulf African | 42 | 42 | | |
| Habib Bank | 40 | 40 | 37 | 35 |
| HFCK | 9 | 6 | 6 | 5 |
| I&M Bank | 8 | 24 | 24 | 14 |
| Imperial Bank | 20 | 18 | 18 | 21 |
| Kenya Commercial Bank | 1 | 1 | 2 | 3 |
| K-rep | 11 | 19 | 33 | 33 |
| Middle east Bank | 30 | 39 | 36 | 26 |
| National Bank | 7 | 4 | 1 | 1 |
| NIC Bank | 13 | 10 | 9 | 12 |
| Oriental Commercial Bank | 19 | 16 | 14 | 8 |
| Paramount universal Bank | 31 | 23 | 22 | 22 |
| Prime Bank | 17 | 14 | 17 | 19 |
| Standard chartered Bank | 12 | 7 | 7 | 6 |
| Transnational Bank | 24 | 22 | 19 | 20 |
| Victoria Commercial Bank | 41 | 41 | 40 | 39 |

Appendix III: GDP Growth Rates

| | 2010 | 2011 | 2012 | 2013 |
|------------|-------------|-------------|-------------|-------------|
| GDP Growth | 5.8 | 4.4 | 4.6% | 4.7 % |