

**THE EFFECT OF MORTGAGE INTEREST RATE ON THE GROWTH OF
MORTGAGE FINANCING IN KENYA**

BY

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DECLARATION

This Research Project is my original work and has not been presented to any other university.

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This Research project has been submitted for examination with my approval as university supervisor.

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DEDICATION

To my dear family, my parents and siblings
For their ending encouragement and support;

“You abound with me through it all, as always
And made the task a delightful experience”

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENTS.....	iii
DEDICATION.....	iv
LIST OF ABBREVIATIONS.....	vii
ABSTRACT.....	viii
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Mortgage Interest Rate	3
1.1.2 Growth of Mortgage Financing	3
1.1.3 Effect of Mortgage Interest Rates on Growth of Mortgage Financing.....	4
1.1.4. Mortgage Finance Industry in Kenya.....	6
1.2 Research Problem	7
1.3 Research Objective	9
1.4 Value of the Study	9
CHAPTER TWO.....	11
LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Review of Theories	11
2.2.1 Loanable Funds Theory	11
2.2.2 Classical Theory of Interest	12
2.2.3 Liquidity Preference Theory	13
2.3 Determinants of Interest Rates	13
2.4 Factors Influencing Growth of Mortgage Financing	14
2.5 Empirical Evidence.....	15
2.6 Summary of Literature Review	19
CHAPTER THREE.....	20
RESEARCH METHODOLOGY.....	20
3.1 Introduction	20
3.2 Research Design	20

3.3 Population	20
3.4 Data Collection	21
3.5 Data Analysis	21
3.5.1 Analytical Model	21
CHAPTER FOUR	23
DATA ANALYSIS, RESULTS AND DISCUSSION	23
4.1 Introduction	23
4.2 Data Analysis	23
4.2.1 Mortgages Outstanding	23
4.2.2 Mortgage Interest Rates.....	24
4.2.3 Comparison of Mortgage Outstanding and Average Interest Rate	25
4.2.4 Non-Performing Loans.....	26
4.2.5 Comparison between Mortgages Outstanding, Interest Rates and Non-performing Loans	27
4.2.6 Regression Analysis	28
Source: Research findings.....	29
4.3 Interpretation of Findings.....	29
CHAPTER FIVE.....	31
CONCLUSION AND RECOMMENDATIONS	31
5.1 Introduction	31
5.1.1 Summary of Study	31
5.3 Conclusion.....	32
5.4 Recommendations.....	33
5.5 limitations of the study.....	33
5.6 Areas for further research.....	34
REFERENCES.....	35
APPENDICES	38

LIST OF ABBREVIATIONS

AIDS- Acquired Immunodeficiency Syndrome

ARM- Adjustable Rate Mortgage

CBK- Central Bank of Kenya

CBR- Central Bank Lending Rate

CFA – Certified Financial Analyst

NPL- Non Performing Loans

HIV- Human Immunodeficiency Virus

SAP- Structural Adjustment Program

T-BILLS- Treasury Bills

ABSTRACT

The objective of this research project was to study the effect of mortgage interest rates on the growth of mortgage financing in Kenya. The mortgage market in Kenya is still in its early stages compared to far much developed markets in Europe where it forms a big part of the gross domestic product of specific countries. The Kenyan market is undeveloped and their fore has great potential of growth. In these early stages challenges are numerous; Interest rates have been identified as a major factor of influence and as a major challenge. Normal loans historically have been expensive and prohibitive to potential borrowers because of high interest rates hence it follows that mortgages will be affected similarly.

The study used a descriptive research design, their fore it sought to find out and collect facts in the market and describe the causal linkage between mortgage interest rates and growth of mortgage financing in Kenya. The study used a population of 44 licensed commercial banks and housing finance company for a period between 2009 and 2012. Data was collected from secondary sources. Non-performing loans were identified as a control variable and was introduced in the analysis equation. The equation was analyzed using MS-excel to give the statistical results.

The research findings shows that total mortgage outstanding have been increasing while average interest rate generally increased in the period of study. A strong negative relationship was realized between mortgage interest rate and growth of mortgage financing. In overall the results indicate that mortgage interest rate and non-performing loans are not adequate predictors of growth of mortgage market as indicated by the coefficients.

Further studies in the mortgage market need to identify the relevant and significant factors such as income levels and accessibility of loans and means to appropriately measure them so as to expand this analysis of the mortgage market. The regulatory body CBK needs to develop policies to curb the great variation of the lowest and highest interest rates in the market while the central bank rate remains low. The free market policy seems to be working against consumers in this case.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). Interest can be thought of as "rent of money". Interest rates are fundamental to a 'capitalist society' and are normally expressed as a percentage rate over the period of one year. Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation (Ngugi, 2001).

A mortgage is said to be a security for the performance of an act. It involves a mortgager, the performer of the act. And it involves the mortgager the holder of the mortgage (Schmudde, 2004). A mortgage loan is a loan secured by real property through the use of a mortgage note which evidences the existence of the loan and the encumbrance of that realty through the granting of a mortgage which secures the loan. However, the word mortgage alone, in everyday usage, is most often used to mean mortgage loan.

The main obstacles of mortgage financing identified by banks in a CBK survey in 2011 and 2012 are interest rates and access to long-term finances (CBK, 2012). High interest rates cause the number of non-performing loans to rise in 2012. The report further says that the tendency for financial institutions to grant mortgage loans on variable interest rate basis may be contributing to slow growth in residential mortgage market in Kenya. (Ngugi, 2004) brought out that interest rates effect on the amount of credit to the economy is largely minimal.

The main types of mortgage interest rates are fixed and variable interest rates. Fixed-rate mortgages are most suitable for low to moderate and stable inflation and interest-rate environments. In such environments, the premiums for expected inflation and its variability are relatively low and stable. In higher and more volatile inflation environments, says the World Bank, fixed-rate mortgages become either prohibitively expensive or too risky for lenders to offer. Adjustable rate mortgages (ARM's) are well suited to moderately inflationary environments where interest rates, prices and incomes move together with modest changes. They are more problematic in high-inflation environments characterized by large interest changes and sluggish income change. The report says that (ARM's) are not suitable for unstable or fixed incomes or high inflation economies (World Bank). This raises the question what is the effect of interest rates on the growth of mortgage financing in Kenya considering our inflationary environment is not stable and the interest rates and income do not move together in terms of changes.

In the U.S.A the ARM share has fluctuated substantially over time, reaching highs of 60 to 70 percent in 1994 but falling significantly in recent years. Indeed, the ARM share is now near a record low: ARMs make up less than 10 percent of recent residential mortgage originations. Some hypothesis developed to explain this include: household mortgage choice in the last several years has been largely determined by institutional factors related to the financial crisis of 2008, such as the collapse of the securitized nonprime mortgage market, where adjustable-rate mortgages predominated, and the placement of Fannie Mae and Freddie Mac in conservatorship. A second and related hypothesis is that the crisis caused households to become more risk averse following the publicity given to high default rates on subprime ARMs, and the reports of "payment shock" associated with interest rate resets on ARMs. A third hypothesis is that the low

ARM share has been driven by the same long-run historical factors that shaped mortgage choice in earlier periods, such as the term structure of interest rates and its effects on the relative price of different types of mortgages (Federal Reserve Bank of New York,2010).

1.1.1 Mortgage Interest Rate

Interest rate is the rate of return on investment and the cost of borrowing funds (Darryl, 1969), interest rates are a price for the use of funds and if rapid monetary expansion contributes to excessive demand and inflation, it also contributes to rising interest rates. Central Bank's role under the interest rate instrument is to set a short-term official rate of interest, which indicates the price at which it will make liquidity available to the banking system as a lender of last resort. In Kenya, this rate is called the Central Bank Rate. This rate is reflected in the CBK overdraft rates.

Inflation stabilization can be implemented through a 'Taylor rule' in which interest rates are adjusted in response to output and inflation. In using interest rates, first the Central Bank sets a target inflation rate and then interest rates are steered to move inflation to its intended levels. In this case, interest rates are increased when the inflation rate is above the target rate, and reduced when inflation is below the target rate. A reduction in the official rate for instance, encourages the commercial banks to borrow money from the Central Bank, thereby increasing money supply in the economy. Mortgage interest rates reflect the general lending rate of banks as any other loan in the banks.

1.1.2 Growth of Mortgage Financing

The mortgage market consists of financial institutions such as banks, mortgage companies and regulatory body. Another player is the investors who take up the loans. The housing or buildings is another important component.

Growth in the mortgage market can occur when the types of mortgage loans increase, when the rates of these mortgages are affordable, when mortgage financing is the preferred mode for acquiring housing for companies and individual, when the housing supply meets the demand in the market, when the competition in this market is strong enough to moderate rates through several competitive commercial mortgage providers.

Mortgages have a big role to play in filling this gap; mortgages have great potential to reach levels such as the average mortgage debt to GDP level in European countries is in the region of 50 percent, whilst in the US it reaches 72 percent. According to World Bank the potential size of the mortgage market is currently around Ksh 800 billion or \$9.9 billion around 13 times the current level (World Bank, 2011).

1.1.3 Effect of Mortgage Interest Rates on Growth of Mortgage Financing

The mortgage market in Kenya is not growing significantly and this provokes analysis to come up with ways to improve its growth and in a report central bank state, the high interest rates in the first half of 2012 impacted negatively on the mortgage market with NPLs increasing from Ksh. 3.6 billion in December 2011 to Ksh. 6.9 billion in December 2012, it also states that the tendency for financial institutions to grant mortgage loans on variable interest rate basis may be contributing to slow growth in residential mortgage market in Kenya (C.B.K, 2012). The above statements show that interest rates have considerable effect on growth of mortgage market in Kenya. There is lack of sensitivity in mortgage rate setting to the macro environment in the absence of response in mortgage rates to the sharp decline in the cost of money as seen in the T-Bill rates. Mortgage rates should have fallen to their lowest levels ever as is the case in many developed markets. The absence of a strong link to capital market funding and the lack of

consumer price elasticity mean that banks are able to offer rates which are much higher than their cost of funds (World Bank, 2011).

The issue of risk premiums and bank margins has recently been tackled in depth in a World Bank paper⁷. The paper shows that Kenya's banking system is efficient relative to its immediate neighbors. Banks charge a net interest margin of 6.6 percent in Kenya which is exactly the sub-Saharan average. The difficulty with such a high interest margin for term finance is that it has to be additional to the capital market rate as set by the yield curve. With long term funds currently costing in excess of 12 percent, it would mean mortgage rates closer to 20 percent. Lenders are able to blend funds and partly use their deposit bases, capital and other funding sources to achieve a lower cost of funds, but over the long term the net interest margin will have to reduce if financial access is to improve (World Bank, 2012). Mortgage financing is highly underutilized in Kenya. Kenya has about 16,000 mortgage loans which is a drop in the ocean compared to the population and size of the economy; therefore interest rates have a big role to play in maximizing the potential.

The World Bank estimates that the Kenyan mortgage market has the potential to grow to Sh800 billion, which is about nine times the current size. The 16,000 mortgages valued at Sh91.2 billion in 2011 account for 2.5 per cent of the GDP, which pales in comparison with other countries such as South Africa which has a 26.4 per cent ratio. Kenya's ratio also lags behind Namibia 19.6 per cent, Morocco 16.9 per cent, Mauritius 12.2 per cent, Tunisia 12 per cent (2010), and Seychelles 3.94 per cent (Gachiri, 2012).

1.1.4. Mortgage Finance Industry in Kenya

In Kenya 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 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 (World Bank, 2011). The current cost of mortgage financing is prohibitive for the vast majority of the population. It is calculated in a report by the World Bank that just 12 percent of the urban population could consider taking out a mortgage loan which represents just 2 or 3 percent of the national population therefore mortgages are completely out of reach for the entire rural population (World Bank, 2011).

In Kenya, interest rates are mainly driven by inflation, which affects the value of money; demand and supply of money through sale and purchase of government security in the open market; monetary policy and intervention by the government through setting the central bank lending rate; general economic conditions such as economic booms and slumps (Ngugi, 2004). Interest rates in the country have also been sensitive to the existing political atmosphere. For instance, the 2007/2008 post-election crisis caused a hike in the weighted average bank lending rates by 1.6% (Ng'etich & Wanjau, 2011).

The value of mortgage loan assets outstanding increased from Ksh. 90.4 billion in December 2011 to Ksh. 122.2 billion in December 2012, representing a growth of Ksh. 31.8 billion or 35.2%. (C.B.K, 2012) according to the CBK there were 19,177 mortgage loans in the market in December 2012 up from 16,029 in December 2011. The average mortgage loan size increased

from Ksh. 5.6 million in December 2011 to Ksh. 6.4 million in December 2012. The increase may be partly attributed to increase in property prices. The potential the Kenyan market is far much higher as discussed later and therefore these increases are just a pale representation of the real opportunities of growth.

The high interest rates in the first half of 2012 impacted negatively on the mortgage market with NPLs increasing from Ksh. 3.6 billion in December 2011 to Ksh. 6.9 billion in December 2012. According to a central bank of Kenya survey for 2012 on commercial banks the interest rates charged on mortgages on average was 18 percent and ranged between 11.0 percent - 25.0 percent. Other information collected was that about 85.6% of mortgage loans were on variable facts include interest rates basis compared to 90% in 2011.

Based on a ranking of mortgage market constraints, banks identified lack of access to long-term funds and high interest rates as the major impediments to the growth of their mortgage portfolios. However, the 2011 survey had identified high interest rates as the major obstacle with lack of access to long term funds being rated as the 2nd obstacle. According to the (CBK), the average interest rate was 18% in 2012 for mortgages; however the range was very wide i.e. 11% - 25% (C.B.K, 2012). This is a very high variability among the mortgage lenders and indicates some financial institutions are gaining very high profits from this industry. This further explains the un-affordability of mortgages that causes the slow growth of the market in Kenya.

1.2 Research Problem

High risk premiums associated with mortgages cause their interest rates to be expensive to lenders. 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 (World Bank, 2011). Mortgage rate changes affect the amount of mortgage interest payments, causing a direct cash-flow effect on consumption. Interest rate changes also affect housing demand and housing prices. If households use housing as collateral, its value changes, inducing a wealth effect on household behavior and indirectly affecting consumption (Rubio, 2008).

The mortgage market is the third most developed in Sub-Saharan Africa with mortgage assets equivalent to 2.5 percent of Kenya's GDP. In common with much of Africa, Kenya has a large housing gap which is growing every year and is increasingly prevalent in urban areas. The current annual housing deficit is estimated at 156,000 units per annum based on the population growth and urban migration taking place. There is limited data on current levels of construction but according to the Ministry of Housing, it is 50,000 units a year. The deficit is largely filled by the growth in slum dwellings and continued self-construction of poor quality traditional housing. Mortgages have a big role to play in filling this gap; mortgages have great potential to reach levels such as the average mortgage debt to GDP level in European countries is in the region of 50 percent, whilst in the US it reaches 72 percent. According to World Bank the potential size of the mortgage market is currently around Ksh 800 billion or \$9.9 billion around 13 times the current level (World Bank, 2011).

Rubio (2008) studies how the proportion of fixed and variable-rate mortgages in an economy can affect the way shocks are propagated. Second she analyzes optimal implementable simple monetary policy rules and the welfare implications of this proportion. This is a foreign study without Kenyan variables.

In another study by World Bank it says that fixed-rate mortgages is most suitable for low to moderate and stable inflation and interest-rate environments. In such environments, the premiums for expected inflation and its variability are relatively low and stable. In higher and more volatile inflation environments, says the World Bank, fixed-rate mortgages become either prohibitively expensive or too risky for lenders to offer (Mwalimu, 2013). They never did an empirical study with Kenyan variables

Muguchia (2012) studies the effect of flexible interest rates and the results show a negative relationship between flexible interest rates and mortgage financing. The results show a negative relationship between flexible interest rates and the growth of mortgage financing. The document also argues that if banks charge a fixed rate of interest, it would be possible for investors to plan for a predictable amount of money to be repaid hence stability and increased level of borrowing.

Therefore this study seeks to answer the research question and fill the gap in knowledge and empirical study in Kenyan context, what is the effect of mortgage interest rate on the growth of mortgage financing?

1.3 Research Objective

To establish the effect of mortgage interest rates on the growth of mortgage financing.

1.4 Value of the Study

To theory, this proposal seeks to broaden empirical evidence on theoretical concepts by examining the effect of interest rates on growth of mortgage financing. The will better interpretation and understanding of the theoretical environment.

To policy, the project will contribute to knowledge of the factors affecting growth of mortgage financing in Kenya and their effects. This will provide policy Makers and industry players with a basis to make informed choices and policies that are necessary to have a good development framework.

To practice, the commercial banks that provide mortgage products will find the study useful because it seeks to analyze why a specific type of interest rate can inhibit or promote growth of mortgage financing. Therefore it will offer an insight to banks on how interest rates can help them grow mortgage lending

Finally, to researchers and scholars the study will broaden scope in areas covered in the area of mortgage financing. They will also find the study a useful reference for the future studies and a benchmark for making conclusions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explains the theories and empirical evidence that are related to the area of study, to reveal the literature that is applicable in determination of the study conclusion. The theories include; loanable funds theory, classical interest theory and liquidity preference theory.

2.2 Review of Theories

According to the loanable funds theory, the interest rate can also describe the rate of return from supplying or lending loanable funds. The classical theory says the demand for capital and supply of capital determines the rate of interest. and the liquidity preference theory says people will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution when interest rates increase, on the other hand they become willing to hold less money for these purposes in order to secure a profit but when.

2.2.1 Loan able Funds Theory

In economics, the loanable funds market is a hypothetical market that brings savers and borrowers together, also bringing together the money available in commercial banks and lending institutions available for firms and households to finance expenditures, either investments or consumption. Savers supply the loanable funds; for instance, buying bonds will transfer their money to the institution issuing the bond, which can be a firm or government. In return, borrowers demand loanable funds; when an institution sells a bond, it is demanding loanable funds. Another term for financial assets is "loanable funds", funds that are available for

borrowing, which consist of household savings and sometimes bank loans. Loanable funds are often used to invest in new capital goods, therefore, the demand and supply of capital is usually discussed in terms of the demand and supply of loanable funds (McConnell, 2005).

The interest rate is the cost of borrowing or demanding loanable funds and is the amount of money paid for the use of a dollar for a year. The interest rate can also describe the rate of return from supplying or lending loanable funds.

2.2.2 Classical Theory of Interest

The basic idea of this theory is that the demand for capital and supply of capital determine the rate of interest. The rate of interest is determined at a point where demand for capital is equal to supply of capital. The demand for capital arises from investment and the supply of capital arises from savings. Since this theory explains the determination of rate of interest by real forces such as thrift, time preference and productivity of capital, it is also called the real theory or non-monetary theory of interest (Blang, 1992).

The capital or savings is demanded because of its productivity. The marginal productivity of capital diminishes as more and more of it is used for production. The marginal product curve of capital slopes downwards from left to right. Because of this the demand curve of capital slopes downwards from left to right. This means that lower the rate of interest, the greater shall be the demand for capital.

The supply of capital comes from savings. The supply of savings is affected by rate of interest. Higher the rate of interest, higher shall be the volume of savings and lower the rate of interest; lower shall be the volume of savings. Hence, the supply curve of savings or capital rises upward from left to right.

The rate of interest is determined by the equilibrium of demand and supply. Interest rates will remain stable when the economy, the money market, the loanable funds market, and foreign currency markets are simultaneously in equilibrium.

2.2.3 Liquidity Preference Theory

Keynes says that people value money for both the transaction of current business and its use as a store of wealth. Thus, they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution. On the other hand, when interest rates increase, they become willing to hold less money for these purposes in order to secure a profit (Keynes, 1936).

It can also be described as the idea that investors demand a premium for securities with longer maturities, which entail greater risk, because they would prefer to hold cash, which entails less risk. The more liquid an investment, the easier it is to sell quickly for its full value. Because interest rates are more volatile in the short term, the premium on short- versus medium-term securities will be greater than the premium on medium- versus long-term securities. For example, a three-year Treasury note might pay 1% interest, a 10-year treasury note might pay 3% interest and a 30-year treasury bond might pay 4% interest.

2.3 Determinants of Interest Rates

According to the CFA institute interest rates constitute or are determined by a number of factors, these include; Real Risk-Free Rate: this assumes no risk or uncertainty, simply reflecting differences in timing: the preference to spend now/pay back later versus lend now/collect later. The second is expected Inflation: the market expects aggregate prices to rise, and the currency's purchasing power is reduced by a rate known as the inflation rate. Inflation makes real dollars

less valuable in the future and is factored into determining the nominal interest rate (from the economics material: nominal rate = real rate + inflation rate). Thirdly is default-Risk Premium: what is the chance that the borrower won't make payments on time, or will be unable to pay what is owed? This component will be high or low depending on the creditworthiness of the person or entity involved. Liquidity Premium another factor where Some investments are highly liquid, meaning they are easily exchanged for cash (U.S. Treasury debt, for example). Other securities are less liquid, and there may be a certain loss expected if it's an issue that trades infrequently. Holding other factors equal, a less liquid security must compensate the holder by offering a higher interest rate. Another factor is maturity Premium: All else being equal, a bond obligation will be more sensitive to interest rate fluctuations the longer to maturity it is (Investopedia). Interest rates are also affected by the (C.B.R), either they move up when the (C.B.R) also rises or down when the same happens to the (C.B.R). The C.B.R reflects the rate of inflation in the economy, hence when the inflation rate is up, interest rates will also rise. Inflation is a critical factor in the economy, it creates problems for housing finance as it increases the level of interest rates (to compensate for expected future price increases) and their variability. The appropriate class of instruments for a market will depend on the inflationary environment (both the level and the volatility of prices and interest rates) (World Bank, 2009).

2.4 Factors Influencing Growth of Mortgage Financing

Expanding the Stock of Mortgage able Properties; Kenya's market is more evolved than most in Sub-Saharan Africa but equally there is much room for improvement. The supply of land for housing and having a functioning secondary market for housing sales are essential elements of an efficient mortgage system. This requires: a more streamlined and cost efficient property registry system and a unified and simplified mortgage law, limiting frivolous appeals.

Providing Affordable Finance; the current cost of mortgage financing is prohibitive for the vast majority of the population. This report calculates that just 12 percent of the urban population could consider taking out a mortgage loan which represents just 2 or 3 percent of the national population. Mortgages are completely out of reach for the entire rural population. Some steps could be taken to improve affordability including: new products design to help affordability, over the longer term look at options for suitable subsidy programs/guarantee mechanisms and aside from the mortgage market it is important to consider options for informal population

Improving Risk Management/Efficiency; As the market grows in size, some economies of scale will arise, but efficiency gains and a lowering of the risk premium can also help to bring down the cost of loans; Expand coverage of the Credit Bureau to have fuller credit histories, as well as to non-bank financial intermediaries, Standardization of documentation and Underpin confidence in the sector by introducing prudential standards for loan underwriting

Developing a secondary mortgage market; it involves a twin approach of firstly developing a mortgage liquidity facility which would benefit the sector as a whole, while also pursuing the development of a mortgage covered bond framework for the larger lenders. As this will target institutional investors, it would be important to review investment rules of Pensions Funds and Insurance Companies (World Bank, 2011).

2.5 Empirical Evidence

Martinez and Maza (2003) found out that housing prices and real income were positively related to mortgage credit while interest rates have a negative impact on the variation in short term credit.

Ngugi (2004) brought out that interest rates effect on the amount of credit to the economy is largely minimal. Instead the overall net credit available in Kenya financial industry is influenced more by other factors such as information asymmetry between the borrowers and the lenders, value of the reserve requirements, debit credit controls on the banking system and perception of risk regarding the solvency of other banks within the banking system.

Gerlach and Peng (2005) examined the long and short term relationship between interest rates and mortgage credit with an application to the Hong Kong housing market and found out that the increase in interest rates were positively and significantly related to growth in long term mortgage loans.

Rubio (2008) studied how the proportion of fixed and variable-rate mortgages in an economy can affect the way shocks are propagated. Second it analyzes optimal implementable simple monetary policy rules and the welfare implications of this proportion. A New Keynesian dynamic stochastic general equilibrium model is developed and solved that features a housing market and a group of constrained individuals who need housing collateral to obtain loans. A given proportion of constrained households borrow at a variable rate, while the rest borrows at a fixed rate. The model predicts that in an economy with mostly variable-rate mortgages, an exogenous interest rate shock has larger effects on borrowers than in a fixed-rate economy. Aggregate effects are also larger for the variable-rate economy. For plausible parameterizations, differences are muted by wealth effects on labor supply and by the presence of savers. More persistent shocks, such as initiation target and technology shocks, cause larger aggregate differences. From a normative perspective it finds that, in the presence of collateral constraints, the optimal Taylor rule is less aggressive against inflation than in the standard sticky-price model. Furthermore, for given monetary policy, a high proportion of fixed-rate mortgages are

Welfare enhancing.

Mwega (2009) found out that Kenya experienced credit crunch in the period between 1993 and 2002 because formal lending institutions preferred less risky investments in government securities at the expense of small to medium enterprises. This situation is unfavorable to growth of mortgage markets since they would lack financing needed.

In a study done in the USA they analyzed recent trends in households' mortgage decisions, focusing in particular on the choice between fixed rate mortgages and adjustable-rate mortgages. They document that the market share of ARMs has declined significantly across all segments of the mortgage market in recent years. Using a simple model, they present evidence that this decline in the ARM share can largely be accounted for by factors that explain mortgage choice in earlier periods in particular, measures of the relative borrowing costs for fixed-rate and adjustable-rate mortgages. Supply-side factors, especially the increasing share of the conforming mortgage market, are also important in accounting for the fall in the ARM share over this period (Moench, Vickery & Aragon, 2010).

Olweny (2011) sought to establish the link between the level of interest and the volatility of interest rates in Kenya using the Treasury bill rates from August 1991 to December 2007. The main variable for the study was the short term interest rate series. In Kenya, this is the Central Bank three month Treasury bill rate. The interest rate volatility was studied using the general specification for the stochastic behavior of interest rates which is tested in a Stochastic Differential Equation (SDE) for the instantaneous risk free rate of interest as earlier defined by Chan. The study applied the monthly averages of the 91-day T-BILL rate for the period between August 1991 and December 2007 which were obtained from the Central Bank of Kenya. The results of the study were consistent with the hypothesis that the volatility is positively correlated

with the level of the short term interest rate as documented by previous empirical studies. The key findings revealed that there exists a link between the level of short-term interest rates and volatility of interest rates in Kenya.

In a study to investigate the factors influencing mortgage uptake Kenya, the study was guided by several specific objectives but in relation to this current study the objective to examine the extent to which interest rate influence mortgage financing in Kenya is more specific to the research now. A descriptive survey was employed in this study. This study targeted 238 staffs in selected department in Housing finance Corporation, Kenya. Stratified random sampling method was conducted to capture the various levels of staffs and management. The study concluded that interest rate setting on mortgage debt; government instruments and fiscal measures are the major policies that govern mortgage financing (Aguko, 2012).

Muguchia (2012) studies the effect of flexible interest rates and the results show a negative relationship between flexible interest rates and mortgage financing. The document argues that if banks charge a fixed rate of interest, it would be possible for investors to plan for a predictable amount of money to be repaid hence stability and increased level of borrowing. Other independent variables in the study include; inflation, non-performing loans, liquidity ratio and negative effects on mortgage financing, while money supply, GDP, customer deposits, bank capitalization and bank size had positive effect on mortgage financing. The study relied on secondary data from annual reports of the banks and regression analysis was mainly used to analyze the data.

2.6 Summary of Literature Review

The relationship between interest rates and growth of mortgage financing remains Controversial in theory. The theories are more generalized rather than specific and inconclusive i.e. for this particular study theories are limited or barely breakdown the variables.

Empirical findings show positive, negative and even no relationship between the two variables i.e. Aguko (2012) concludes that interest rate setting on mortgage debt; government instruments and fiscal measures are the major policies that govern mortgage financing. Gerlach and Peng, (2005) found out that the increase in interest rates were positively and significantly related to growth in long term mortgage loans. (Ngugi, 2004) brought out that interest rates effect on the amount of credit to the economy is largely minimal.(Muguchia, 2012) shows a negative relationship between flexible interest rates and mortgage financing.

Global studies have explored the relationship between interest rates and mortgages extensively and they are based on different contextual conditions hence the diversity of findings. Locally empirical study in the relationship between interest rates and mortgages is not covered widely specifically relating to the types of interest rates: fixed and variable, hence there is a large gap to be covered in terms of knowledge and empirical studies.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology is a way to systematically solve the research problem (Kothari). It involves; drawing the research design, determine population, sampling, data collection and data analysis.

3.2 Research Design

This research is descriptive in design; descriptive research includes surveys and fact finding enquiries of different kinds (Kothari). Therefore it sought to find out and collect facts in the market and describe the causal linkage between mortgage interest rates and growth of the mortgage financing in Kenya. It was appropriate to use these designs because the research sought to establish the actual situation in the mortgage market in regards to fixed interest rate mortgages effect.

3.3 Population

All the items under consideration in any field of inquiry constitute a 'universe' or 'population'. (Kothari) The study population was the 44 licensed commercial banks and housing finance company (CBK, 2012) Appendix 1. The data was for a period of four years i.e. 2009 to 2012, this is because the period is adequate to observe a trend, it is also reasonable in consideration of the limited research time available needed to carry a more prolonged study and another reason is

the period before 2009 would affect the results because of the dramatic effect of the post-election violence in 2007-2008 on the economy as a whole. (Appendix 1)

3.4 Data Collection

Data was collected mainly through secondary sources. Secondary sources include; sample bank's financial reports, central bank reports, economic journals, and statistical publications available in research firms. The type of data collected include; data on size of the market over the past five years, data on mortgage rates in the market over the market, data on other factors affecting mortgage financing, and data on non-performing mortgage loans and their types.

3.5 Data Analysis

Data collected was put in purposeful and usable categories, and then editing and coding took place. After coding, Data was coded and entered into Microsoft excel. MS Excel was used to perform the analysis as it aides in organizing and summarizing the data by the use of descriptive statistics such as tables. After tabulation the below analytical model together with percentages and coefficients was calculated to support or conflict the study tests.

3.5.1 Analytical Model

The model aims to look at the relationship between growth of mortgage financing with mortgage interest rate and non- performing loans will be introduced as a control variable

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + E_e$$

Table 1; Definition of model variables

VARIABLE	DEFINATION	FORMULAR
Y	Proportional growth of mortgage financing	To be measured by comparing total value of mortgages on yearly basis
α	Constant	
β	Coefficients of the variables	
X ₁	mortgage interest rates	The interest rate from year to year per bank will be used
X ₂	Non-performing loans(control variable)	The non-performing loans from year to year will be used
E _e	Error term	

Analysis of variance (ANOVA) will be used to test significance of the model. This is because in the above model, multiple sample cases will be involved. Using this technique one can draw inferences about whether the samples have been drawn from population having the same mean (Kothari).

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings based on the secondary data collected. This is essential for a scientific study and for ensuring that we have all relevant data for making contemplated comparisons and analysis, technically speaking, processing of data involves editing, coding, classification and tabulation of collected data so that they are amenable to analysis. The term analysis refers to the computation of certain measures along with searching for patterns of relationships that exists among data-groups (Kothari).

4.2 Data Analysis

4.2.1 Mortgages Outstanding

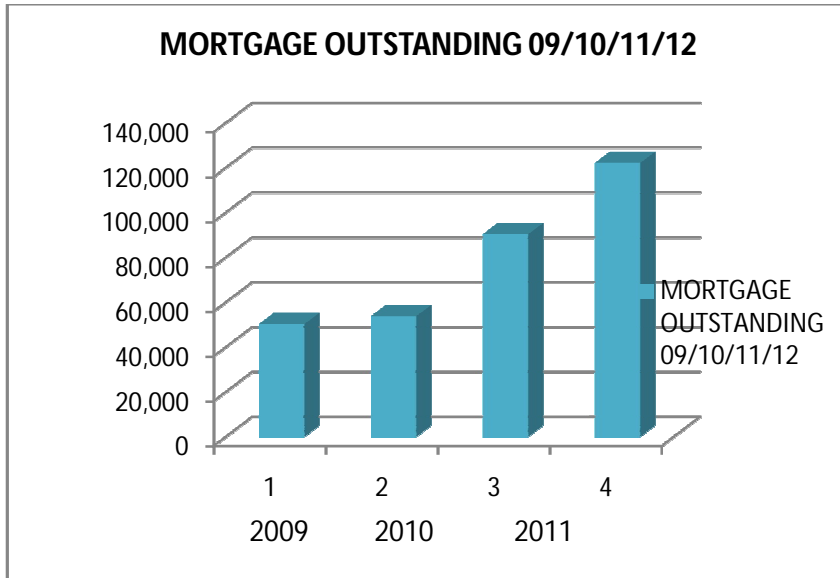
The amount of mortgage outstanding in the Kenyan mortgage market as in 2009 was Ksh.50,304,000,000 and in 2012 it was ksh.122,160,000,000 this represents a growth of ksh.71,856,000,000 or 142.8% in 4 years. In this period the size of mortgage outstanding has been increasing inconsistently as shown by the table and graph below. The growth in 2010 was minimal compared to 2011 where there is a sharp increase in mortgages outstanding and then in 2012 the rate goes down.

Table 4.1: Mortgages outstanding

YEAR	MORTGAGE OUTSTANDING Ksh. Millions	% CHANGE
2009	50,304	
2010	53,844.23	7.04%
2011	90,403	66.65%
2012	122,160	35.12%

Source: Research findings

Graph 4.1: Mortgages outstanding



Source: Research findings

4.2.2 Mortgage Interest Rates

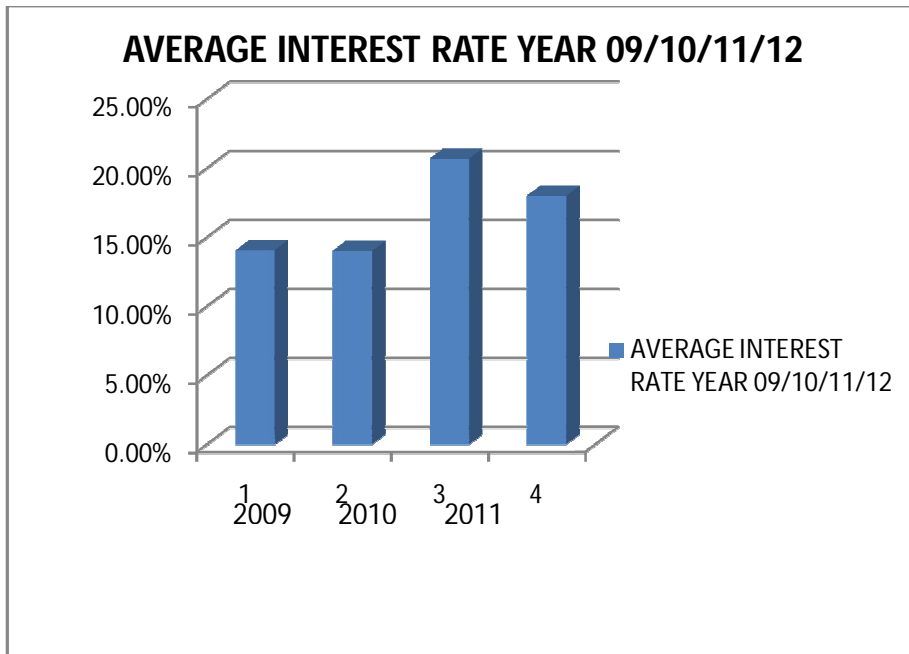
The average mortgage interest rate in 2009 was 14.06% and in 2012 it was 18%. This is an increase of 3.94% or a 28% change between the years. In 2011 it was at its highest peak of 20.7% which is a very retrogressive position to the mortgage market. The average interest rate has been alternating positive and negative change like in 2012 it dropped to 18% which is a 13.04% drop.

Table 4.2: Average interest rates

YEAR	AVERAGE INTEREST RATE YEAR	% CHANGE
2008	13.45%	
2009	14.06%	4.5%
2010	14.02%	-0.28%
2011	20.70%	47.6%
2012	18%	-13.04%

Source: Research findings

Graph 4.2: Average interest rate

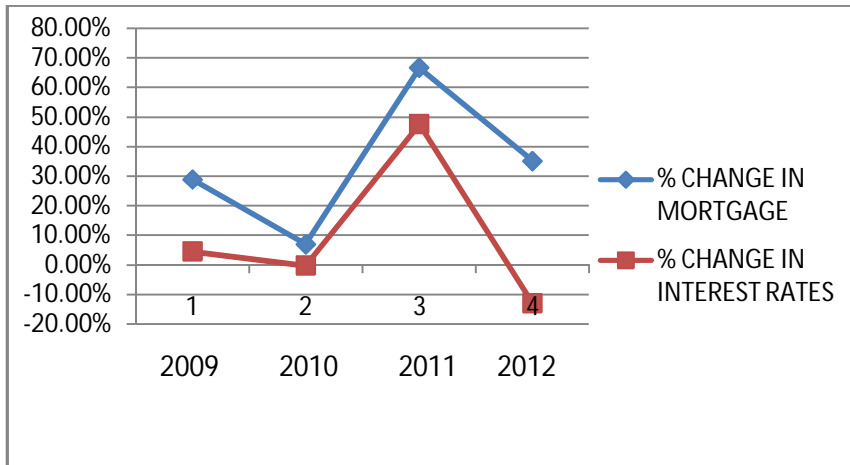


Source: Research findings

4.2.3 Comparison of Mortgage Outstanding and Average Interest Rate

The movement in mortgages outstanding and average interest rates has been similar as illustrated by the graph below but difference comes in the extent of change. The trend shows as change in interest rates slightly dropped in 2010 as compared to change in mortgage outstanding which dropped much sharper. In 2011 as change in interest rates shot up change in mortgage outstanding shot much steeper and finally in 2012 change in interest rates was steeper as compared to change to change in mortgage outstanding.

Graph 4.3: Mortgage Outstanding and Average Interest Rate



Source: Research findings

4.2.4 Non-Performing Loans

Non-performing loans was introduced in the analysis as a control variable. The trend of non-performing loans as in the table below shows in 2009 there was an increase and in 2010 and 2011 they dropped by 30.5% which is very positive but in 2012 they rose by 26.8%.

Table 4.3: Change in Non-performing loans

YEAR	NO OF NPL'S	% CHANGE
2008	1107	
2009	1215	9.76%
2010	1099	-9.5%
2011	764	-30.5%
2012	969	26.8%

Source: Research findings

Table 4.4

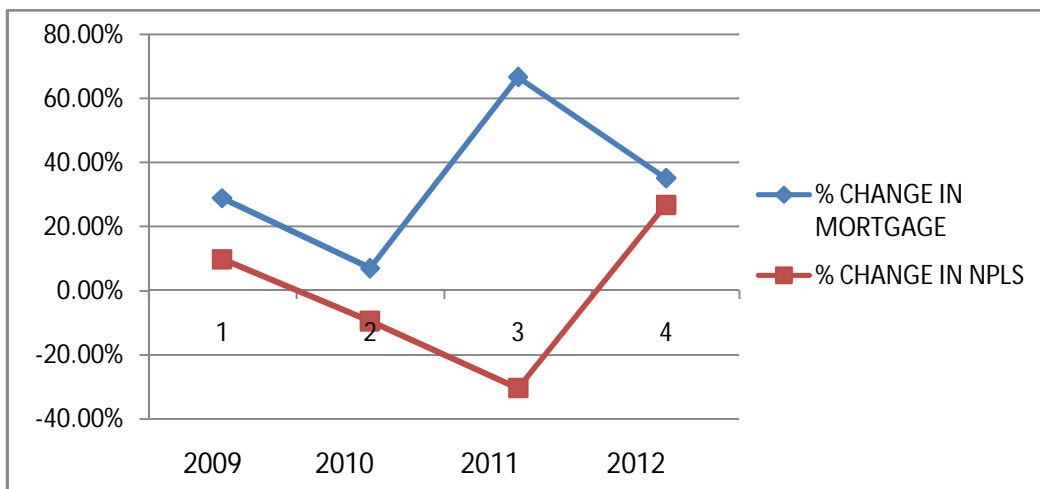
No of mortgage loans	NO OF NPL'S	NO OF NPL'S / NO OF MORTGAGES
11,223.000	1107	0.098636728
13,224	1215	0.091878403
15,049.00	1099	0.073028108
16,029	764	0.04766361
19,177	969	0.05052928

Source: Research findings

4.2.4.1 Comparison between Mortgage Outstanding and Non-Performing loans

The change in mortgage outstanding and change in no of non-performing loans is not consistent as indicated in the graph below. In 2009 there was a positive percentage change in the number of non-performing loans which means there was an increase and which also the case with percentage change in mortgages outstanding but at different rates. In 2010 and 2011 the percentage change in non-performing loans negatively changed which means they decreased in number, while the mortgage outstanding in 2010 and 2011 positively change, which means they continued to increase. It is notable in 2011 the rate was very steep than previous year. In 2012 the percentage change in the number of non-performing loans was positive which implies they increased while the mortgages outstanding also positively but at a lower rate than the previous year.

Graph: 4.4: Comparison of mortgage outstanding and Non-performing loans

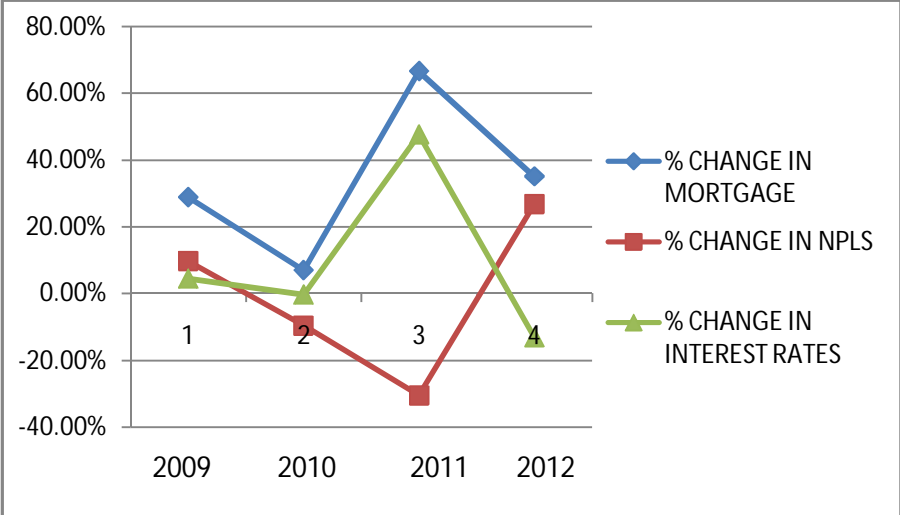


4.2.5 Comparison between Mortgages Outstanding, Interest Rates and Non-performing Loans

The graph below shows the movement of the percentage change of each factor over the four years. The trend of change in mortgage outstanding and change in interest rate are similar except

that the degree is varied. The trend in change in non- performing loans is partially varied to the other two factors as illustrated below.

Graph 4.5: Comparison of mortgage outstanding, interest rates and non-performing loans



4.2.6 Regression Analysis

The analysis equation was analyzed using MS- excel regression tool to obtain statistical results to assist in understanding the relationship between mortgage interest rates and mortgage financing in Kenya with non-performing loans as a control variable.

The results obtained give: Table 4.5

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.499547534							
R Square	0.249547739							
Adjusted R Square	0.149487437							
Standard Error	0.79867372							
Observations	18							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	2	3.181710169	1.590855084	2.493973484	0.116124279			
Residual	15	9.568195658	0.637879711					
Total	17	12.74990583						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.321991812	0.24043147	1.339224903	0.200438552	-0.190475735	0.83445936	-0.19047574	0.834459358
INTEREST RATE	-0.722321766	0.9041733	-0.798875355	0.43683	-2.649521536	1.204878	-2.64952154	1.204878004
NPL	0.147174898	0.085600206	1.719328792	0.106115502	-0.035277621	0.32962742	-0.03527762	0.329627417

Source: Research findings

4.3 Interpretation of Findings

The results above show a high negative relationship between the mortgage interest rate and the growth of mortgage financing as given by the β_1 coefficient which is -0.7223. The β_2 coefficient is 0.147, which implies that a very low positive relationship between non-performing and growth of mortgage financing. However the P values which show the extent of reliability on the data on each variable give P value for the intercept as 20% which means there is 20% probability results were by chance, while that of interest rate is 43% and that of non-performing loans is 10%. These values are greater than 10% implying that the significance of coefficients is very low. This implies that the mortgage interest rate and non-performing loans variables have a small margin of influence on the growth mortgage market in Kenya.

The results obtained also show that the independent variables are not adequate predictors of the rate of growth of mortgage financing as given by the coefficient of variation $R^2 = 0.25$. This

implies about 75% of change of mortgage financing cannot be explained. Other variables need to be factored in the analysis to have comprehensive prediction of change in mortgage financing.

In the ANOVA analysis the significance F value is 12% which means that only 12% of the output occurred by chance. This is relatively high and means significance of the model is low.

The graphical summary of change in mortgage financing and change in mortgage interest rates show a similar trend. This means that changes in mortgage interest rates have minimal effect on change on mortgage financing hence offer further illustration.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter involves drawing of conclusions after interpreting the data analysis in the previous chapter. This conclusion summarizes the study and finally gives recommendations.

5.1.1 Summary of Study

The study was looking at the effect of mortgage interest rates on the growth of mortgage financing in Kenya. Statistical results show a negative relationship between these two variables indicating that as the interest rates increase mortgages will be affected to an extent.

Statistical analysis results show that the two independent variables determine variation of growth of mortgage market up to 25% which leaves 75% unexplained. This implies that other factors contribute to the growth of mortgage financing; these include accessibility of mortgage financing, Income levels of the potential population, expansion of the housing market and legislation in the mortgage market. However it is important to note that interest rate were identified as a major factor in many regulatory market survey hence the drive to determine an actual predictor for interest rate effect as implied by these market surveys.

The mortgage market has been improving over the period of the study but it does not match the potential highlighted World Bank which says the industry has a potential of about 800 billion yet it currently stands at about 122 billion. This market is big in developed countries and contributes heavily to their GDP e.g. in major European markets it gets to 50% of the GDP. In the study sampling period interest rate increased drastically in 2011 by 48% from previous year but total value of mortgages loans increased too. This however indicates that interest rates were a small factor in the growth of the market or they played a minor role.

Interest rates are affected by several factors but the major one is inflation. Banks adjust their risk premium in consideration of inflation. This however is over done some banks which charge interest rates with extreme risk premiums considering the C.B.R and industry average. According to the (CBK), the average interest rate was 18% in 2012 for mortgages; however the range was very wide i.e. 11% - 25% (C.B.K, 2012). The central bank has to formulate policies to address such irregularity.

The number of non-performing loans was reducing from 2009 up to 2011 but in 2012 they increased slightly. The ratio of number of non-performing loans and number of mortgage loans held by banks had reduced from 10% in 2009 to 5% in 2012. This is a positive change to the market and as the mortgage market expands this ratio should be maintained or even bettered to increase efficiency in the market. Non-performing loans affect flow of money in the market hence they stunt growth trends.

5.3 Conclusion

Considering the statistical results of a negative relationship in the study it is highly possible growth would have been much higher in the mortgage market if the interest rates had reduced or stabilized. Therefore interest rate increase is retrogressive to growth of the mortgage market.

It is important to note that the mortgage market has many variables as shown by these results that interest rate are just but a fraction of the determinants. However with the limitation unavailability of credible information on mortgage statistics identified in this research further analysis of interest rate can be conducted if data is made more accessible to give a better conclusion of the extent of effects of interest rate.

5.4 Recommendations

Additional factors affecting the mortgage market need to be factored in the equation to increase accuracy of prediction. Such factors include accessibility of funds, housing supply and income levels. In the above appropriate methods to measure the above factors need to be used since that can be a challenge..

The central bank of Kenya should conduct frequent surveys in the mortgage market ideally yearly since in this research it was realized that data available at the regulator is very minimal. This can help also in dissemination of information to the market to reduce the high ignorance level about mortgages by the public.

The government should consider supporting financial institutions to reduce risks which will reduce risk premiums on interest rates. The ministry in charge of housing should also play a role in dissemination of information to the public through regular publications.

Financial institutions should consider designing loan products to tap to middle income developments which are a huge potential since they are highly untapped. The interest rates should also be considerate because they influence affordability greatly.

5.5 limitations of the study

The first challenge was limited access to data specifically on mortgages. The central bank which is the regulator has not required banks to submit detailed statistics and hence banks submit the very minimal information. The banks also with-hold the information even on request, they state that internal policies limit submission of data to the public. This greatly affected the study and changes were made to adapt the research to the limitations.

The time period allocated was inadequate to cover a broad and complete analysis of the expansive mortgage market which has many variables influencing performance.

The process of preparing and conducting the complete project is costly and it is evident why research firms need sufficient and adequate financing.

5.6 Areas for further research

The types of interest rates should be looked at specifically fixed, flexible and split interest rates. This will give a deeper analysis at interest rates since in the study it was realized that this specifics are also important in the mortgage market.

The effect of mortgage interest rate spread on the growth of mortgage market needs to be analyzed since market statistics show that financial institutions have wide spreads.

Future studies need to factor in infrastructure development as a driver of mortgage financing since in our country government is investing heavily on infrastructure and housing developments are been attracted to this areas of development.

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APPENDICES

Appendix 1: List of commercial banks in Kenya as at December 2012

1. African Banking Corporation Ltd
2. Bank Of India
3. Bank of Africa Kenya Ltd
4. Bank Of Baroda (Kenya) Ltd.
5. Barclays bank of Kenya Ltd
6. CFC Stanbic Bank Limited
7. Chase Bank Kenya Ltd
8. Charterhouse Bank Ltd
9. Citibank N A Kenya
10. Co-operative Bank of Kenya Ltd
11. Commercial Bank of Africa
12. Consolidated Bank
13. Credit Bank Ltd
14. Development Bank Of Kenya Ltd
15. Diamond Trust Bank
16. Dubai Bank Kenya Ltd
17. Ecobank Kenya Ltd
18. Equatorial Commercial Bank Limited
19. Equity Bank
20. Family Bank ltd
21. Fidelity Commercial Bank Ltd

22. Fina Bank
23. First community Bank Ltd
24. Giro Commercial Bank Ltd
25. Guardian Bank Ltd.
26. Gulf African Bank Ltd
27. Habib Bank A.G Zurich
28. Habib Bank Ltd
29. Imperial Bank Ltd
30. Investments & Mortgages Bank Limited – I&M Bank
31. Jamii Bora Bank Ltd
32. K-Rep Bank
33. KCB Bank
34. Middle East Bank (K) Ltd
35. National Bank
36. NIC Bank
37. Oriental Commercial Bank Ltd.
38. Paramount Universal Bank Ltd
39. Prime Bank
40. Standard Chartered Bank Kenya Ltd
41. Trans-National Bank(K) Ltd
42. UBA Kenya Bank Ltd
43. Victoria commercial Bank Ltd

Non-Banking Financial Institution

1. Housing Finance Company Ltd

CBK Bank supervision report 2012 pg. 82-96

Appendix 2: Data used

	2012	
INSTITUTION	MORTGAGE OUTSTANDING (Ksh.M)	VALUE OF NPLs MORTGAGE (Ksh.M)
KENYA COMMERCIAL BANK LTD	31,455	2,218
HOUSING FINANCE COMPANY LTD	30,293	2331
STANDARD CHATERED BANK LTD	9,723	162
CFC STANBIC LTD	9,488	190
COOPERATIVE BANK OF KENYA LTD	6,643	312
BARCLAYS BANK LTD	4,341	19
NATIONAL BANK OF KENYA	4,123	572
CONSOLIDATED BANK OF AFRICA	3,848	286
EQUITY BANK LTD	3,684	35
COMMERCIAL BANK OF AFRICA LTD	3,194	153
DEVELOPMENT BANK LTD	2,617	147
I&M BANK LTD	2,309	26
CHASE BANK	1,531	28
AFRICAN BANKING CORPORATION LTD	1,506	37
BANK AFRICA LTD	1,212	5
FAMILY BANK LTD	1,193	7
ECO-BANK LT	1,136	183
GULF AFRICAN BANK LTD	1,069	3
NIC BANK LTD	715	0
BANK OF BARODA LTD	434	2
DIAMOND TRUST BANK OF KENYA LTD	423	0
PRIME BANK LTD	350	0
FIDELITY BANK LTD	261	115
JAMII BORA BANK LTD	218	7
TRANSNATIONAL BANK LTD	192	25
BANK OF INDIA	101	0
VICTORIA COMMERCIAL BANK LTD	63	0
HABIB BANK LTD	18	0
ORIENTAL COMMERCIAL BANK LTD	17	0
TOTAL	122,157	6,863
AVERAGE INTEREST RATE	18%	
AVERAGE NO OF NON PERFORMING LOANS	969	

	2011		
INSTITUTION	MORTGAGE OUTSTANDING (Ksh.M)	VALUE OF NPLs MORTGAGE (Ksh.M)	AVERAGE INTEREST RATE %
KENYA COMMERCIAL BANK LTD	18,105	1024	15.90
HOUSING FINANCE COMPANY LTD	25,777	1579	15.20
STANDARD CHATERED BANK LTD	7,753	119	13.40
CFC STANBIC LTD	8,807	83	14.00
COOPERATIVE BANK OF KENYA LTD	2,166	42	23.90
BARCLAYS BANK LTD	4,372	22	13.00
NATIONAL BANK OF KENYA	3,100	81	16.00
CONSOLIDATED BANK OF AFRICA	2,764	69	25.00
EQUITY BANK LTD	3,387	24	24.00
COMMERCIAL BANK OF AFRICA LTD	2,769	87	15.20
DEVELOPMENT BANK LTD	2,273	69	24.00
I&M BANK LTD	1,546		14.50
CHASE BANK	777	8	20.00
AFRICAN BANKING CORPORATION LTD	1,237	7	22.00
BANK AFRICA LTD	482		22.00
FAMILY BANK LTD	330	1	24.50
ECO-BANK LT	2,269	359	22.70
GULF AFRICAN BANK LTD	590	2	16.70
NIC BANK LTD	248		21.10
BANK OF BARODA LTD	434	7	21.20
DIAMOND TRUST BANK OF KENYA LTD	300		21.60
PRIME BANK LTD	262	-	19.90
FIDELITY BANK LTD	315		23.30
JAMII BORA BANK LTD	66	28	20.00
TRANSNATIONAL BANK LTD	71	-	26.70
BANK OF INDIA	99	-	23.00
VICTORIA COMMERCIAL BANK LTD	66	-	21.70
HABIB BANK LTD	17	-	21.60
ORIENTAL COMMERCIAL BANK LTD	21	-	23.70
TOTAL	90,403	3611	
AVERAGE INTEREST RATE	20.70%		
AVERAGE NO OF NON PERFORMING LOANS	764		

	2010
INSTITUTION	MORTGAGE OUTSTANDING (Ksh.M)
KENYA COMMERCIAL BANK	17,974.35
HOUSING FINANCE COOPERATION	16,900
CFC STANBIC	6,497.43
STANDARD CHARTERED	4,960.42
BARCLAYS BANK	3,055.27
COMMERCIAL BANK OF AFRICA	1,158.81
I&M BANK	732.413,468
EQUITY BANK	673.267,179
NATIONAL BANK OF KENYA	568.277,703
DIAMOND TRUST BANK	562
NIC BANK	517
BANK OF INDIA	310.215
COOPERATIVE BANK OF KENYA	246.317,981
PRIME BANK	227.551,195
INPERIAL BANK	128.598,809
BANK OF AFRICA	106.538,418
BANK OF BARODA	51.341
CITIBANK N.A	-
DEVELOPMENT BANK	1,711.007,860
CONSOLIDATED BANK OF KENYA	794.515,803
FAMILY BANK	663.260,138
VICTORIA COMMERCIAL BANK	61.080,865
CHASE BANK	529
FIDELITY COMMERCIAL BANK	113.867,259
AFRICAN BANKING CORP	58.238
GIRO BANK	43.171,609
ECO BANK	1,203.57
GURDIAN BANK	3.4
FINA BANK	-
GULF AFRICAN BANK	-
HABIB AG ZURICH	-
K-REP BANK	-
FIRST COMMUNITY BANK	1,162.295,656
PARAMOUNT BANK	193.781,768
TRANS-NATIONAL BANK	69.066,731
CREDIT BANK	45.897,330
MIDDLE EAST BANK	34.528

HABIB BANK	23.295
ORIENTAL COMMERCIAL BANK	12.282,205
EQUITORIAL BANK	5.209
UBA KENYA	-
DUBAI BANK	-
CITY FINANCE BANK	-
SOUTHERN CREDIT BANKING CORP	-
TOTAL	53,844.23
WEIGHTED INTEREST RATE	14.02
AVERAGENO OF NON-PERFORMING LOANS	1099

	2009
INSTITUTION	MORTGAGE OUTSTANDING (Ksh.M)
KENYA COMMERCIAL BANK LTD	15,639.61
HOUSING FINANCE COMPANY LTD	15,100
STANDARD CHATERED BANK LTD	4,897.84
CFC STANBIC LTD	6,137.24
COOPERATIVE BANK OF KENYA LTD	55.52
BARCLAYS BANK LTD	2,913.83
NATIONAL BANK OF KENYA	452.703,776
CONSOLIDATED BANK OF AFRICA	207.620,973
EQUITY BANK LTD	537.699,122
COMMERCIAL BANK OF AFRICA LTD	1,113.26
DEVELOPMENT BANK LTD	1,709.60
I&M BANK LTD	686.304,912
CHASE BANK	483.11
AFRICAN BANKING CORPORATION LTD	33.243
BANK AFRICA LTD	74.883,451
FAMILY BANK LTD	694.799,916
ECO-BANK LTD	969.013
GULF AFRICAN BANK LTD	-
NIC BANK LTD	477.341
BANK OF BARODA LTD	45.463
DIAMOND TRUST BANK OF KENYA LTD	350.084
PRIME BANK LTD	98.400,674
FIDELITY BANK LTD	69.800,147
JAMII BORA BANK LTD	-
TRANSNATIONAL BANK LTD	190.002,203
BANK OF INDIA	355.13
VICTORIA COMMERCIAL BANK LTD	86.332,458
HABIB BANK LTD	-
ORIENTAL COMMERCIAL BANK LTD	2.316,323
DUBAI BANK LTD	-
IMPERIAL BANK LTD	121.388,447
K-REP BANK LTD	-
GIRO COMMERCIAL BANK LTD	48.539,893
EQUATORIAL COMMERCIAL BANK LTD	-
FIRST COMMUNITY BANK LTD	-
MIDDLE EAST BANK LTD	17.734
UBA BANK OF KENYA LTD	-
CHARTERHOUSE BANK LTD	-
CREDIT BANK LTD	12.748,83

FINA BANK LTD	-
GURDIAN BANK LTD	6.219
HABIB A.G. ZURICH	-
PARAMOUNT UNIVERSIAL BANK LTD	160.014,052
CITIBANK N.A.	-
TOTAL	50,304.23
WEIGHTED INTEREST RATE	14.06%
AVERAGEB NO OF NON-PERFORMING LOANS	1215