

**THE EFFECT OF INTEREST RATES ON THE FINANCIAL PERFORMANCE
OF FIRMS OFFERING MORTGAGES IN KENYA**

BY

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIRMENT FOR THE AWARD OF MASTERS OF
BUSINESS ADMINSTRATION (MBA), UNIVERSITY OF NAIROBI**

OCTOBER 2012

DECLARATION

I declare that this research project is my original work and has not been presented for a degree in any other university.

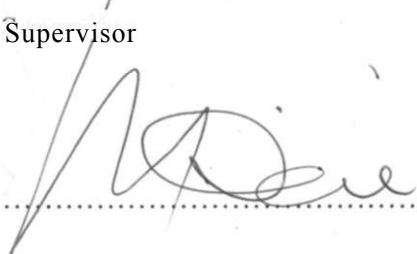

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The research project has been submitted for examination with my approval as the University Supervisor

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DEDICATION

I dedicate this to my daughter, Jasmine, and my husband, John, for the love and
encouragement

ACKNOWLEDGEMENT

First and foremost, I would like to thank the Almighty God for giving me the strength, and grace that enabled me to finish this course. I would also like to thank my Supervisor, Mr. Mirie Mwangi, for his support and professional advice despite his busy schedule.

I thank my family, husband, John, and daughter, Jasmine, for their love, encouragement and understanding despite being too busy for them in pursuit of this course. I also appreciate my parents, Mr. and Mrs. Ngumo for their encouragement, advice and instilling in me a sense of discipline and love for education.

I am grateful to the University of Nairobi, my classmates and lecturers whose valuable input and positive criticism was instrumental in shaping this research project.

ABSTRACT

Mortgage is a long-term commitment that ties a prospective homeowner down to mortgage repayment for at least 20 years or transfer of a legal or equitable interest in a specific immovable property for the payment of debt. Mortgage loans are secured by real the real property and provide a schedule of payments of interest and repayment of the principal to a bank. Following interest rates liberalization, interest rates have fluctuated to respond to changes in demand and supply of loan able funds in the financial market. However, this could be counter-productive or result in an unsound financial sector, in a country where financial institutions lack experience management. This study seeks to determine the effect of interest rates on financial performance of firms offering mortgages in Kenya.

The study adopted a survey research design on a target population of all organizations registered for mortgage lending as of 31st December 2011 which were 33. The study used secondary data sources to collect data from CMA library and Central Bank of Kenya. The data collected were analyzed using multiple linear regression analysis conducted at 95% confidence level.

The study established positive relationships in the five regression analysis between financial performance and the amount of mortgage loans advanced; three positive results were established between interest rates and the former. The study concludes that the amount of mortgage advanced by mortgage firms would lead to a high financial performance (EBIT) as it raises the revenue thereof. On the other hand, interest rate would positively relate with financial performance till it starts discouraging borrowings owing to increase in the cost of mortgage. The study recommends that mortgage firms in Kenya charge interest rates on the mortgage appropriately as ineffective interest rate policy raises the cost of mortgage borrowing, negate its demand thus lowers financial performance.

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ABBREVIATIONS

ARM	Adjustable Rate Mortgages
CBK	Central Bank Of Kenya
CBOs	Collateralized Mortgage Obligations
FRM	Fixed Rate Mortgages
HFI	Housing Finance Institution
EBIT	Earnings Before Interest And Taxes
CMA	Capital Market Authority

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

1.1.1 Definition of Mortgage

A mortgage is a long-term commitment that ties a prospective homeowner down to mortgage repayment for at least 20 years and normally commits one to the lender for minimum of 3 years or so. According to Pandey (1999) a mortgage is a transfer of a legal or equitable interest in a specific immovable property for the payment of debt.

More in particular, is it the transfer of title to real estate which is made to secure the performance of some act such as payment of money by the person making the transfer. Thus the possession of the property remains with the borrower, but the lender gets the full legal title (Broadhurts, 1996).

Section 14 (1) of the Banking Act (cap 488) of the laws of Kenya states that no institution apart from mortgage finance company shall make loans or advancement for the purpose of land so that the aggregate amount of the loans and advances exceeds 25% of the amount of its total deposits.

However given the costs associated with arranging a loan and taking the mortgage as security, the lender always seeks to establish the ability of the borrower to service the loan. The lending institution will need to consider age, personal circumstances and earning capacity of the prospective borrowers in order to calculate the maximum amount to be lent over an agreed period (Goacher, 1999).

With the intent of minimizing uncertainty, Mortgage finance Institutions advance mortgage loan on a maximum of 90% of the purchase price which as well should not exceed three times of the total annual income of the borrower (Syggga, 1994)

Despite qualifying for a mortgage advance, many prospective home owners dream of owning homes turns into nightmare when they are unable to repay the loan. Therefore mortgage houses secure their interests using charges and mortgages themselves as lending instruments. They only apply to removable property and once executed and registered, the title to the property is only partly rested in the borrower and therefore the borrower cannot deal with the property so mortgaged without consent from the lender (Banking Survey 2002)

Mortgage lending will also take into account the perceived risk ness of the mortgage loan; that is the likelihood that the funds will be repaid usually considered a function of the credit worthiness of the borrower, that if they are not repaid, the lender will be able to foreclose and recoup some or all of its original capital; and the financial interest rate risk and time delays that may be involved in certain circumstances (Dolde, 2006).

According to Anglo American property law a mortgage occurs when an owner usually for a fee, simple interest in reality pledges his interest right to the property as security or collateral for a loan. As with other types of loans, mortgages have an interest rate and are scheduled to amortize over a set period of time, typically 30years. Mortgage is the primary mechanism used in many countries to finance private ownership of residential and commercial property.

Governments usually regulate many aspects of mortgage lending either directly through legal requirements or indirectly through regulations of the participants. 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 formula. The most basic arrangements would require a fixed monthly payment over a period of ten to thirty years depending on local conditions. Lenders provide funds against property to earn interest income and usually borrow those funds themselves for example by taking deposits or issuing bonds.

The price at which the lenders borrow money therefore affects the cost of borrowing. Lenders may 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 security by means of securitization. In the United States the largest firms securitizing loans are Fannie Mae and Freddie Mac which are Government enterprises.

1.1.2 Definition of Rate of Interest

Interest rate is a price that relates to present claims on resources relative to future claims on resources. It is the price a borrower pays in order to be able to consume resources now (Kwak, 2000).

Correspondingly it is therefore the price that a lender receives to forego current consumption in order to take advantage of consumption of resources at some point in future. In the real world, price changes are anticipated and this anticipation is part of the process that determines interest rates (Gardener, 1999).

According to (Keyes 1936) interest rates represent the cost of borrowing capital for a given period of time. Due to the fact that borrowing is a significant source of finance for many firms, prevailing interest rates are of much concern to many firms because of indexing of interest rates in some borrowing arrangement; interest rates continue to affect a firm for the whole period that the borrowing arrangement is outstanding (Keyes, 1936).

1.1.3 Determinants of Financial Performance of Mortgage Firms

1.1.3.1 Access to Long term Funds

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

1.1.3.2 Interest Rates

Positive Interest rates (lending in excess of inflation rates) are viewed as prerequisite for successful and sustainable finance (Buckley, 1999). Long term loans, such as mortgage financing loans have higher interest rates as a result of expectation of, among other factors higher inflation, (Gitman, 1997). The market rate of interest on mortgage loans is established by what borrowers are willing to pay for the use of funds over a specified period of time and what lenders are willing to accept in the way of compensation for the

use of such funds. Real estate tends to be highly levered and thus the rate of return earned by equity investors tends to be affected by changes in interest rate. Even where the investor has a fixed rate of mortgage, an increase in interest rate may lower the price a subsequent buyer is willing to pay. Further more the yield rate (required rate of return) that an investor requires for real estate tends to increase with the overall levels of interest rates in the economy (Fisher, 1999).

Excessive high interest rates in Kenya Finance sector have strongly discouraged long-term investment and constrained Kenya's ability to grow. With nominal interest rates ranging from 20-30% the private sector is unable to borrow to finance long term investments in the mortgage sector. In addition, the 11-18% point spread between lending and deposit rate is much higher than the 5 point spread common in other developing countries (Economic Report on Africa 2002).

Interest rates chargeable on mortgages influence the mortgage quality in that the higher the interest the more expensive the mortgage product becomes, and the more susceptible to defaults due to high repayment costs. Low interest rates on the other hand encourage compliance and prompt repayment thus guaranteeing quality products.

1.1.3.3 Low Levels of Incomes for Potential Borrowers

In Kenya the mortgage debt to GDP ratio is 2.48% which is low by international standards (CBK Mortgage Finance, 2010). This is characterized by low level of incomes on the majority population thus they are unable to meet the threshold to access mortgages, which means that only a small portion of the population has mortgages. Due

to the low levels of income, the mortgages in the market tend to be mainly of high value to tend to the small high income bracket.

Currently to access a mortgage facility one requires attain a certain level of salary threshold. With the average loan size at 4.4.milion this would indicate that one would require a net salary of KSH 100,000 net to service the mortgage for 15 years at 20% interest. (Central Bank of Kenya Mortgage Finance Survey 2010) .This is way beyond what an average professional earns which means they cannot qualify even for the most basic mortgage product, thus eventually having an impact on the number of people who take up mortgages and in turn volume of the mortgage market.

Mokua. (2004) asserts that mortgage finance remains unaffordable to potential home owners and that all the mortgage products target high and middle-income earners who constitute a partly percentage of the salaried people within the private sector. He assesses that it is just below 5% of Kenyans who can access conventional housing finance.

1.1.3.4 Lack of Housing Supply-New Constructions

Due to increased inflation the cost of building has increased thus reducing the huge margins enjoyed by contractors. This in turn reduces the economic attractiveness of the construction industry translating to fewer units in the mortgage market in turn affecting the volume of mortgages being taken up. (Central Bank of Kenya -Mortgage Finance in Kenya-a Baseline survey 2011)

1.1.3.5 Fees Charged on Mortgages

Mortgage contracts attract fees and costs that are levied on the mortgage that increase the cost of procurement. Such costs include; legal fees, stamp duty, arrangement fees, valuation fees, mortgage protection policy all of which add to increase the cost of mortgage and this pushes the costs of mortgages out of reach from most individuals as one not only has to bear in mind the cost of the property but also consider the additional costs which on average amount to 10% of the property value. (Central Bank of Kenya - Mortgage Finance in Kenya -a Baseline survey 2011)

1.1.3.6 High Credit Risk

High credit risk put lenders in a dangerous position as they are unable to fully evaluate and guarantee the mortgage being advanced due to the unavailability of credit history. This has the effect on increasing the cost of the mortgage as the lenders will compensate themselves for the risk by charging high interest rates. (Central Bank of Kenya -Mortgage Finance in Kenya -a Baseline survey 2011).

1.1.3.7 Rate of Inflation

All investors when making investment decisions are concerned on how inflation will affect investment returns, more so mortgage firms who have long term investments. The rate of inflation is of particular importance to investors and lenders making or purchasing loans made at fixed rate of interest over long periods of time. Hence when deciding whether or not to make such commitments, lenders and investors must be convinced that interest rate commitments are sufficiently high to compensate for any unexpected loss in purchasing power during the period that the investment or loan is outstanding; otherwise, an inadequate real return will be earned. Therefore, a consensus of what lenders and

investors expect inflation to be during the time that their loan and investment are outstanding is also incorporated into interest rate at the time investments and loans are made.

1.1.4 Mortgage Market in Kenya

The Development of mortgage industry in Kenya dates back to 1965 when the premier Housing Finance Company of Kenya was incorporated. Their main objective was carrying out the Government policy of promoting thrift and home ownership. This was to be achieved by providing savings and mortgage facilities to the Kenyan public. Initially the Commonwealth Development Corporation (CDC) held 60% of equity while the Kenyan government controlled 40%. In 1992 Housing Finance offered its shares to the public and become a quoted company at the Nairobi Securities Exchange. (www.housing.co.ke)

Currently Housing Finance controls 29% of the total mortgages in the Kenya Mortgage market. The change in legislation of the Banking Act in 2002 removed the 5 year term loan restriction, implied that banks could now venture in mortgage loans that have longer repayment terms. In addition the drastic drop in returns offered by Treasury bills resulted in commercial banks seeking alternative lending avenues. This saw the entry of other players in the market such as Standard Chartered Bank, Barclays Bank, Cooperative Bank, Commercial Bank of Africa. (Banking Supervision Annual Report 2011).

1.2 Statement of the Problem

Mortgage companies are in the business to make money as much as to assist their customers own home. Therefore they borrow from individuals making deposits or institutions buying portfolio. Once this is done, the funds raised are bundled together in a group of individual mortgages to be used for funding and made available to prospective investors (Mayo, 1998).

It is important to realize that the nature of the mortgage institutions is that it provides loans to borrowers. This implies that since investment in mortgage bonds is of a shorter period for an investor to earn returns compared to the time frame of a mortgage borrower to repay his debt, then the invested funds should be invested properly.

Mortgage loans are secured by real the real property and provide as 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 or fixed interest and either payment or maturity is fixed for the term of the loan. As with most types of loans, mortgage financing involves the full repayment of the amount borrowed to acquire the property, plus applicable interest that is applied according to the terms outlined in the mortgage agreement (Hancock & Wilcox 2006).

Following interest rates liberalization, interest rates have fluctuated to respond to changes in demand and supply of loan able funds in the financial market. Rapid liberalization in a country whose enterprises and financial institutions lack experience management could prove counter-productive and result in an unsound financial sector (Leite and Sundarajan 1999).

The Mortgage Industry in Kenya has undergone rapid changes in the recent past from only a handful of players in the industry to the entry of commercial banks in the mortgage market with the amendment of the Banking Act 2002 that removed the 5 year term for loans provided by commercial banks

According to Gallinger (1987) one basic assumption of portfolio theory is for the investor to maximize the returns from the investment for a given level of risk. Any investor needs to understand the importance of having a balanced portfolio to guard against failure. Likewise mortgage companies offer various types of mortgages in order to safeguard against failure and maximize returns. Therefore a portfolio should be well diversified having elements of liquidity, fixed interest holding and equity. Interest rates will impact on securities held in the portfolio.

There is extensive literature on mortgages in Kenya. Muringu (2003) undertook a study on the perceived quality of service in the mortgage sector. Ndirangu (2004) did a study on the effect of types of mortgages on financial performance of the mortgage institutions in Kenya. Omondi (2003) did a study on the responses of mortgage companies in Kenya to threats of new entrants. No known study that has dealt on the effect of interest rates on financial performance of mortgage firms in Kenya. Therefore this study will seek to fill the knowledge gap that currently exists and to explore on how interest rates affect mortgages.

This study therefore seeks to answer the following question: What is the effect of interest rates on financial performance of firms offering mortgages?

1.3 Objectives of the Study

To determine the effect of interest rates on financial performance of firms offering mortgages in Kenya.

1.4 Value of the Study

The findings of this study are envisaged to be of benefit to the mortgage Institutions especially when they are lending to their customers to finance homes as they will be able to know in advance the impact of interest rate valuation on the performance of the mortgaged being advanced.

The study would also be of importance to would be home owners willing to take a loan with the mortgage institutions. They would be more aware on the implication of variations of interest rates on their repayment plan and would be able to choose the type of mortgage that would work for them.

In addition this research will stimulate academics and encourage further studies in the area of mortgage financing.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The first recorded mortgage was formed by Richard Ketley in 1775 with the establishment of the first building society ever. Initially Individuals would become members of this building society for the simple purpose of owning their own home. They would decide on the entire cost required to construct a property for each member and a member would take one share of the fixed amount and make monthly subscriptions so that in a 100 months time his share would be paid up (Broadhurts, 1996). A portfolio is a collection of investments all owned by an individual or an organization. According to Sharpe (1981) and Frost and Hager (1986), an investor should consider an overall investment strategy that seeks to construct an optimal portfolio by considering risk and return. This can be achieved through diversification. Since volatility is limited by the fact that not all asset classes or industries move up or down in value at the same time, or at the same rate, then diversification can be achieved by combining a variety of investments. In an effort to reduce exposure to default risk on mortgages advanced to their customers, mortgage institutions offer different types of mortgages.

2.1.1 Mortgage Firms Risk in Lending

Mortgage firms are in business of taking risks. The level of risk and uncertainty varies in direct proportion with the period of time for which the mortgage has been borrowed. Longer period of time will naturally have a higher level of risk and uncertainty (Wood 1982). According to Nyandemo and Sigh (2003) uncertainty is a situation when decision

makers do not have full knowledge about the future of a product, demand, factor costs and other relevant variables. It may be stated that uncertainty is a state of knowledge in which one or more alternative result in a set of specific outcomes but where probabilities of the outcome are neither known nor meaningful. In other words, when uncertainty is reduced to possible outcomes, and to alternative courses of action it becomes a risk. Risk is therefore a state of knowledge in which each alternative leads to one of a specific set of outcomes, each occurring with a probability that is known.

There are some investment characteristics peculiar to real estate that makes it more risky than investing in government securities (Mbote, 2006). A summary of major investment risk characteristics that must be considered by investors and mortgage borrowers when deciding among alternative mortgage structures are discussed here under. Interest rate, inflation and default rate risk are common to all mortgages while business and management risk has a higher impact on income property mortgages than residential mortgages.

2.1.1.1 Interest Rate Risk

As defined by Coong (1995) interest rate risk is the exposure of a financial institution's current or future earnings and capital to interest rate change. Most financial Institutions suffer losses in profits or asset value when the general level of interest rates rises. Real estate tends to be highly levered and thus the rate of return earned by equity investors tends to be affected by changes in interest rate. Even where the investor has a fixed rate of mortgage, an increase in interest rate may lower the price a subsequent buyer is willing to pay.

The goal is to control interest rate risk to an acceptable level. It has been observed that the techniques used to measure interest rate risk include; interest rate gap analysis, duration analysis and simulation. The interest rate analysis shows that changes in interest rates lead to substantial losses or gains. Duration on the other hand is a measure of the sensitivity of an asset value to change in interest rates. Simulation analysis gives a financial institution an opportunity to plan for a financial structure that limits its interest rate risk to acceptable level (Yeager, 1989).

2.1.1.2 Inflation Risk

Unexpected Inflation can reduce an investor's rate of return if the income from investment does not increase sufficiently to offset the impact of inflation thereby reducing the real value of the investment. Real estate has historically done well during periods of low inflation than in periods of high inflation. This may be attributed to leases that allow for pricing adjustment with unexpected changes in inflation (Mbote, 2004).

Further more the replacement costs of real estate tend to increase with inflation. During periods of high vacancy rates, when the demand for space is weak and new construction is not feasible, the income from real estate does not tend to be increase with unexpected inflation (Martysiak, 2000).

2.1.1.3 Default Risk

One major concern of the lender is the risk that borrowers will default on their obligations to repay the principal and interest. This is the default risk and it varies with the nature of land and credit worthiness of the individual borrower. Default risk relates to the likelihood that the borrower's income may fall after the loan is made, thereby

jeopardizing the receipt of future mortgage payments. Similarly should the market value of a property fall below the outstanding loan balance the borrower to lose the motivation to repay the mortgage leading to default. The possibility that a default may occur means that lenders charge a premium or higher interest rates to offset possible loan losses (Claurette, 2003).

2.1.1.4 Business Risk

This risk is more prevalent on income property mortgage than any other type of mortgage. Many regions on the country experience differences in the rate of growth due to changes in demand, population changes etc. Those properties that are affected to a greater degree than others will be riskier. A property with a well-diversified tenant mix is less likely to be subject to business risk. Similarly properties with leases that provide the owner with protection against unexpected changes in expenses will have a lower business risk. Commonly, leases will contain a clause that allows the owners to review the rent due to recover any increase in costs necessary in managing the property (Matysiak,2000).

2.1.1.5 Financial Risk

The use of debt financing magnifies the business risk. Financial risk increases as the amount of debt proportion financing a mortgage increases. The higher the loan to value ratio the higher the financial risk (Faboozi, 2005).

2.1.1.6 Liquidity Risk

This risk occurs when a continuous market with many buyers and sellers and frequent transactions are not available. The more difficult an investment is to liquidate, the greater the risk that a price concession may have to be given to a buyer should the seller have to dispose of the investment quickly. Real estate has relatively high degree of liquidity risk.

It can take 6-12 months to sell real estate income properties especially during periods of weak demand. Special purpose properties would tend to have much higher liquidity risk than properties that can be adapted to alternative uses (Kohn, 1999).

2.1.2 Determination and Measurement of Interest rates

Prior to interest rates liberalization, interest rates were determined through administrative controls and after liberalization by market forces (Wachira, 1999). These factors that now determine interest rates include; inflationary expectations, the real rate of interest differentials, excess liquidity and domestic and foreign interest rate differentials, i.e. when there are no restrictions on capital movements.

According to Cargill (1991), there exist two approaches used to determine interest rate; liquidity funds approach and loan able funds approach. These approaches assume that the level of income and employment determined in the real section of the economy are constant. A zero rate of inflation is also assumed.

2.1.2.1 Liquidity Preference Approach

The liquidity preference approach views interest rates from the supply and demand of the stock of money in the finance system.

The demand for money is $M_d = M_d(Y, r)$

M_d = Money demanded Y = Level of Income r = Interest rate

The approach indicates that interest rate is determined by the interaction of supply and demand of money stock. According to Keynes (1936), money is demanded mainly for transaction, precautionary and speculative purposes

2.1.2.2 Loan able Funds Approach

Under this framework, the interest rate is the price paid for the right to borrow and utilize loan able funds (Harvey 1993). It is well known that the level of interest tends to rise in periods which the rate of inflation increases.

The supply of loan able funds is a function of Interest and Income i.e.

$S_L = S_L(Y, r)$

S_L ^ Supply of loanable funds Y = Income level r = Interest rate

According to Thygeson (1989), the equilibrium interest rate is that rate which equates supply and demand of loanable funds as long as competitive forces apply in the financial system, there is a natural mechanism to bring interest rates to equilibrium.

2.2 Theoretical Framework

2.2.1 Title Theory and Lien Theory of mortgages

Some banks retain and treat mortgage as a title theory. Since the mortgage is said to hold a title interest, the mortgagee has the right to possession under this theory. In a title theory bank, the mortgage is treated as having transferred title to the mortgagee, subject to the mortgagee's duty to reconvey if payment is made. The title is said to remain in the mortgagee until the mortgage has been satisfied and foreclosed. Although the mortgagee has the right of possession to the property, there is generally an express agreement giving the right of possession to the mortgagor. The mortgagee is said to hold the title for security purposes only. The mortgagor is given the right of possession (Buckley and Kalarickal, 2004).

In the lien theory, the mortgagor retains legal and equitable title to the property, but conveys an interest that the mortgage 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 to possession (Buckley and Kalarickal, 2004).

For practical applications there is usually very little difference between a lien theory and a title theory. The principle difference arising in the title theory bank is that the mortgagee is given the right to possession before the foreclosure is complete.

2.2.2 Theory of Term Structure of Interest Rates

The term structure on interest rates refers to the relationship between interest rates on various securities that are similar in all aspects except in their maturity (Cargill, 1991). Alternatively it can be defined as the spread of interest rates that are paid on the same type of assets with different terms to maturity (Apps and Goacher 1993). The term structure of interest rates is only of relevance in cases of those assets which have been fixed to maturity and pay a fixed rate of interest at specified periods. The term structure of interest rates on a particular type of asset may be represented diagrammatically in the yield curve. The normal yield curve approximates the relationship between yield and maturity of obligations traded in the financial system at a point in time.

There are four common shapes of yield curves namely; the upward sloping, downward sloping, the humped and the flat yield curve. Three theories have been advanced which explain the shape of the yield curve. These theories tend to explain why long term interest rates tend to be different from short term interest rates.

2.2.2.1 Expectation Theory

This theory holds that long term rates of interest are equal to the mean of current short term interest rates plus short term interest rates that the market participants expect to prevail over the maturity of the long term security. The term structure of interest rates is determined by expectations of future interest movements. The market participants are assumed to buy and sell securities with the objective of maximizing profits with available funds. It assumes as well that the market participants have no preference between holding a long term security or a series of short term securities.

The theory is expressed as $\text{Long term Interest rate} = \text{Mean of Current Short term interest rate} + \text{expected short term interest rate}$ (Roberts, 1980)

Here an upward sloping yield curve reflects the market expectations that the short term interest rates will rise throughout the relevant period. A flat yield curve reflects the expectation that the short term rates will remain constant over the relevant period. This theory argues that the long term rates are a geometric average of current and expected future short term interest rates.

2.2.2.2 Liquidity Premium theory

This theory is based on the idea that investors will hold long-term maturities only if they are offered a premium to compensate for future uncertainties, which increases with assets maturity. This theory accepts the expectations theory of the term structure of interest rates with one major qualification. Since long term securities entails less liquidity and greater market risk than short term securities, market forces normally produce a risk premium in longer term securities in the form of a higher yield (Lloyd, 1979).

2.2.2.3 Segmented Market Theory

This is also known as the hedging theory. It asserts that securities of different maturities are poor substitutes for one another. It regards short term and long term interest rates as being determined in relatively separate markets. These markets are separated for institutional reasons (Roberts, 1980). Thus interest rates are determined by distinct supply and demand conditions within a particular market segment.

2.3 State of Mortgage Financing

The state of mortgage financing is the number of housing finance systems in the world and they differ from each other in sources of funds, linkage with secondary market, mortgage products and in the role of government (Stephens, 2000). The mortgaging system of Germany and Denmark is characterized by specialized mortgage banks with mortgage bonds backed by collateral pool as the principal source of funding and the Government has stringent control of the system. The United Kingdom has a depository-type housing system with commercial banks and savings banks as mortgage lenders. The source of funds is mainly retail deposits and the mortgage instrument is variable rate mortgage. The government insures deposits and the housing system of the USA is linked to the secondary mortgage market (Stephens, 2000).

2.4 Types of Mortgages

Mcir (1999) identified the categories of mortgages as fixed rate mortgages, adjustable rate mortgages, Income property mortgage, capital repayment mortgage and interest only mortgages.

2.4.1 Fixed Rate Mortgages (FRM)

A fixed rate mortgage specifies an interest rate that is fixed over the term of the loan. Consequently, the loan repayments periodically deducted on the borrowers account are fixed. This would be an amortized loan combining both interest and principal loan repayment into equal periodic repayments. These mortgages carry a higher degree of certainty as the return to the mortgage firm is well known at the commencement of the facility and the obligation by the borrower is fixed. Banks will however impose heavy

penalties on early repayment of this facility to discourage lump sum payment of this loan as this may curtail their future expected earnings (Clauret, 2003).

2.4.2 Adjustable Rate Mortgages (ARM)

There exists several versions of variable interest rate but a common feature in all is that interest rate floats in relation to an index. The interest rate chargeable is a margin above the base rate or the Treasury bill rate. While the margin above the base or Treasury bill rate may itself be fixed, the rate charged on the mortgage will primarily be driven by short term movements in the money market. This implies that the net amount paid by the borrower cannot be projected with certainty. These loans are not amortized and therefore the borrower makes separate payments for interest and principal loan amount (Ndirangu, 2004). The interest is charged on the current account monthly while the principal repayment is charged separately to the some account. In the long run Mayo (1998) states that lenders have to ensure that their lending rates cover the interest rate paid to their depositors and also cover their expenses.

2.4.3 Income Property Mortgage

This type of mortgage is used as collateral for borrowings because it provides its own revenue to repay the principal and interest payments used to finance it. Several firms will come together to finance the project and besides the borrowers own contribution to the project is significant. The property being financed is usually commercial based such as apartments, offices, shops, warehouses. This nature of mortgage will be serviced from the income generated from the collateral. The interest rate charged reflects the risk associated

with the property ability to generate adequate income to cover both interest and principal amount (Reilly, 1997).

2.4.4 Capital Repayment Mortgages

The monthly repayment covers both the capital and interest on the mortgage. Most lenders charge interest at the start of each period and then have the loan reduced through repayments calculated to discharge it over the full term (Souster, 1996). In the early years of the loan, the interest element is a far greater proportion of the monthly repayments than the capital element. It is common for the lenders to insist on a credit life insurance protection cover, over the borrower's life to cover any eventuality of death while the loan is outstanding (Fisher, 1997).

2.4.5 Interest only Mortgages

In this type of mortgage the borrower only meets the monthly interest obligations. The principal is repaid at the end of the loan term. This then implies that the principal debt advanced does not reduce overtime and there is no guarantee that the individuals investment will grow sufficiently to repay the loan (Crosby, 1996).

2.4.6 Capped Rate Mortgages

This mortgage provided for the maximum chargeable rate for a period of time. With such a mortgage, the borrower is usually protected from serious rises in interest rate charged. In an environment of risk and uncertainty, the type of mortgage offered by the bank has an influence on the returns to shareholders since some of the mortgage arrangements provide for the revision of the interest rate charge. This enables the bank to recover its cost without any restrictions (Khon, 1999)

2.4.7 Market Interest Rates in Kenya

The Kenya annualized average 91day Treasury Bill interest rate trend during the period 2001 to 2005 formed a smooth U shaped (CBK Website) The average rate decreased from 12.73% in 2001 to 8.94% in 2004 and sharply decreased to 3.67% in 2003. The rate further dived to stand at 2.86% in 2004, followed by a sharp increase to 8.44% in 2005. The Central Bank of Kenya (Amendment) Bill of 2000 which was aimed at controlling interest rates received assent on August 2001, making it an Act of Parliament. It was however until 2003 when the then Finance minister brought the Act into operation at various aspects such as requirements that a borrowers stops repayment once it is clear that the loan is not performing and interest charge equals principal (Kilongosi, 2005)

The publication of the minimum and maximum lending rates in local press by the CBK is also a requirement of the Act. The Act requires nominal interest rate to be pegged to the 91-day Treasury bill rate maintaining a constant margin between lending rates and deposit rates.

2.5 Financial Performance Measurement

Previous research had inconsistently used one or only a few measures to assess financial performance base apparently on the criteria of convenience to researcher and in terms of ease in getting data for analysis. Friedman, (1962 and 1970) used net income. Vance (1975) used earnings per share. The most common measures of financial institution performance are measures of profitability. These measures are used to evaluate how well management is investing the firm's total capital against adverse conditions such as losses

on loans, or losses caused by unexpected changes in interest rates. (Reily and Brown 1979).

According to Coopers , Gardner and Mills (2000), Thygerson (1995), Yeager and Sertz (1989) and Rose (1994), the main measures of general financial performance are the net income to beginning year equity, Return on Equity (ROE), net income to average assets and Return on Assets (ROA).

Virtually all shareholders owned financial intermediaries use ROE ratio

$$\text{Return on assets (ROA)} = \frac{\text{EBIT} (1-T)}{\text{Total Assets}}$$

EBIT=Earnings before Interest and Tax

$$\text{Return on Equity (ROE)} = \frac{\text{Net income after taxes}}{\text{Equity}}$$

2.6 Empirical Review

Avery, Brevoot and Canner (2006) indicted that low interest rate schemes in commercial banks make positive impact on the credit growth of mortgage finance loans for loan takeovers from existing lenders. Over a longer term , growth rates in banks was linked to mortgage firms ability to march services to the need of the customers and generate adequate risk-adjusted returns, besides being influenced by the overall growth in mortgage finance market.

De Clecne and Wood (2004) indicated that a quarter to a third of households in most emerging markets can afford a mortgage to purchase at least developer built unit. However in low income countries, where most of Sub- Saharan Africa countries are

located, the percentage is far lower. In Zambia for example, the maximum percentage with access based on having formal tenure alone is around 8%.

There has been a steady increase in the supply of and demand for home mortgage finance as well as a number of new, often large suppliers. The changes in the mortgage market resulted in lower interest rates, higher possible loan to value ratios, higher possible loan to income ratio, and longer repayment periods. In particular the higher loan to value ratios are important as it means that the level of down-payments required to buy a house is lower and that has a potentially strong effect on the young who are the most likely to need a mortgage when buying a home, but it has also shifted the burden of home ownership from large-down payment to greater mortgage repayments (Del Boca and Lusardi 2003).

Kenya as a nation has embraced the capitalist system of the economy where the provision of housing is left to private developers and to a smaller extent National Housing Corporation, a government body (Mutero, 2007).

Despite the good effort and policies created by the Government over the last seven years on improvement of living conditions through creation of better economic environment for investors, Alder and Mutero (2007) indicated that only a small proportion of urban households-estimated to be less than 10% have traditionally qualified for mortgage loans from Housing Finance Institutions, with majority ruled out by their low incomes. Even with the fall in interest rates since the 1990s, and the recent extension of lending terms to 25 years by some HFI's, the impact of mortgage lending is still very limited (Ndirangu 2004).

In Nairobi, with a population of around 4 million people, nearly 60% of households live in slum areas. A recent survey of these settlements showed that 73% of households live on less than a dollar a day. Moreover around 90% are tenants, forced into this type of tenure by poor access to land and in some cases, by the deliberate choice to invest in their rural homes (Mutero, 2007).

The impact on changes in interest rates on accrual or report earnings has been well documented according to Basel committee (2001). Variations in earnings is an important focal point for interest rate risk analysis because reduced earnings or outright losses can threaten the financial stability of an institution by undermining its capital adequacy and by reducing market confidence. In this regard the component of earnings that has traditionally received the most attention is net interest income (i.e. the difference between total interest income and total interest expense). This focus reflects both the importance of net interest income in the banks overall earnings and its direct and easily understood link to changes in interest rates. However banks have expanded increasingly into activities that generate fee-based and other non-interest income. The non interest income arising from many activities, such as loan servicing and various asset securitization programs can be highly sensitive to market interest rates. For example some banks provide the servicing and loan administration function for mortgage loan pools in return for a fee based on the volume of the asset it administers (Basel Committee , 2001).

When interest rates fall, the servicing bank may experience a decline in its fee income as the underlying mortgages prepay. In addition, even traditional sources of non-interest income such as traction processing fee are becoming more interest rate sensitive. This increased sensitivity has led both bank management and supervisors to take a broader

view of the potential effects of changes in market interest rates on bank earnings and to factor these broader effects into the estimated earnings under different interest rate environment (Base! Committee 2001).

Jegadcesh and Pennachi (1996) observed that management of interest rate is a critical factor for the success of financial institutions and corporations. Prompted by the increased volatility and deregulation of interest rates in Europe in 1980's a weak array of financial instruments was introduced to cater or the growing risk management needs.

Mbai (2006) did a study on the relationship between interest rate and net intertst income of commercial banks in Kenya and found out that net income increases when high positive medium tern sensitivity gaps are maintained in a rising interest rate environment and conversely low negative medium term sensitivity gaps in a falling interest rate environment.. This is clear that there is a direct relationship between interest rate risk and net interest income of commercial banks in Kenya.

2.7 Conclusion

It can be concluded all types of real estate can be, and usually are secured with a mortgage and bear an interest rate that is supposed to reflect the lenders risk. Mortgage lending is the primary mechanism used in many countries to finance private ownership of residential and commercial property. Unanticipated changes in interest rates are viewed as risks to mortgage firms which need to be managed well. Empirical evidence and data from financial statements provides support that there is a relationship between the firm's performance and changes in interest rates. This study seeks to find out the effect of interest rates on the mortgage firms performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design and methodology of the study; it provides a full description of the research design, the research variables as well as a broad description of the population and its selection. The chapter further discusses research instruments, data collection techniques and data analysis procedures.

3.2 Research Design

The research design according to Chandran, (2004) provides answers for questions such as; what techniques were used to gather data, what kind of sampling strategies and tools were used and how will time and cost constraints be dealt with. In other words, it is an arrangement of conditions for collection and analysis of data in a way that combines their relationship with the purpose of research (Chandran, 2004).

The census survey is the best approach of research design since the population is small and the issues of analysis are critical. The census survey allowed data to be collected as quantities as well as allow for statistical analysis

The research is an empirical study carried out as a census survey of mortgage firms registered and operating in Kenya as of 31st December 2011. The study sought to investigate the effect of interest rates on financial performance of mortgage firms in Kenya.

3.3 Population

The target population in this study consisted of all organizations registered for mortgage lending country wide as of 31st December 2011. There were 33 registered mortgage providers licensed under the Banking Act of Kenya.

3.4 Data Collection

The study plans to use secondary data derived mainly from published financial statements of the quoted mortgage firms for the five year period 2007-2011. These were supplemented with data from records of the Nairobi Securities Exchange and from various government publications such as Central Bank of Kenya - Annual Bank Supervision Report and the Central Bureau of Statistics data (Economic Surveys).

3.5 Data Analysis

This study plans to use simple regression technique in data analysis. Regression is used when a researcher is interested in finding out whether an independent variable predicts a given dependent variable. In this study, the prevailing market interest rates was analyzed alongside the financial performance of mortgage firm using the pretax earnings (EBIT) attributable to mortgage activities. This was taken as the fraction of the total earnings proportionate to the ratio of mortgage loans advanced versus total loans.

$$\text{Log(EBIT)} = \rho_0 + \rho_1 \text{INT} + \rho_2 * \text{Log(Mrt)} + \epsilon$$

Log (EBIT) = Dependent Variable; log transformation of Earnings before Interest and Taxes (as the product of the quotient of mortgage loans/total loans advanced and EBIT)

Po= Constant term

(β_1 and β_2 = Regression constants

INT = CBK Interest Rates

Mrt = Mortgage Amount Advanced

c = Error term (95% confidence level).

The study used log transformation of EBIT and mortgage amount advanced so as to normalize the data to the interest rates whose values are two digits. This would help quantify the contribution of the mortgages to the overall financial performance of the firm. The analysis of quantitative data was carried out using SPSS version 19 and presented in tables, linear graphs and charts. T-tests was used to determine whether there is a significant difference in financial performance when the Central Bank Interest rates are high and when they are low.

CHAPTER FOUR:

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings of the research. From the study population target of 33 mortgage firms, 31 were used for analysis representing 93.9% of the sample interest rate. The data was collected from the respective firms' offices and CMA library as the companies are required to submit their financial reports with the Authority. The study used both descriptive and inferential statistics to analyze the data found.

4.2 Findings and Discussions

4.2.1 Descriptive Statistics

The study conducted inferential analysis using Pearson correlation coefficient, ANOVA and regression analysis. ANOVA was used to test the hypothesis that means among independent (mortgage loan and interest charged) and dependent variables (performance of the mortgage firms) are equal, therefore shows the significance of the association between the two. Correlation coefficient was used to test linear dependence (association) between performance and the individual independent variable.

Regression analysis was used to measure the relationship between individual independent variables and the dependent variable when they act together.

The regression analysis will be of the form:

$$\text{Log (KBIT)} = p_0 + p_1 \text{INT} + p_2 * \text{Log (MRT)} + c$$

EDIT is earning before interest and taxes of the mortgage firms which was transformed by logarithm to standardize the figure, INT is interest rate, MRT amount of mortgage issued for the year also transformed by natural logarithm; Po is the regressions constant, Pi and p2 are the model coefficients while 8 is the model significance produced from the ANOVA statistics (f-significance).

		Interest Rates	performance of Mortgage firms
Interest Rates	Pearson Correlation	1.000	-.702**
/	Sig. (2-tailed)		.000
	N	41	41
Performance of Mortgage firms	Pearson Correlation	-.702**	1.000
	Sig. (2-tailed)	.000	
	N	41	41

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

Using the rating level of;

0 to +0.3= Weak Relationship

+0.4 to +0.6= Moderate/ Average Relationship

+0.7 to +0.9= Very Strong Relationship

The table indicates that there is a very strong negative relationship between Interest Rates and performance of Mortgage firms at $r = -0.702$ and at level of significance 0.05, this implies that the higher the rate of interest, the lower the profits being registered hence deteriorating profits of the Mortgage firms. This analysis demonstrates that the owner's contribution to capital to a large extent determines the weight which the Mortgage firms attach to granting funds (loans). The above relationship agrees with the conclusion made by the researcher in the literature review (chapter two) above.

4.2.2 Correlation **Results**

The study sought to establish the association between individual independent variables (interest rate charged and amount of mortgage and performance of the mortgage firms within the five year period (2009 - 2011). Pearson correlation coefficients were used to test the hypotheses:

H₀₁: Performance of mortgage firms in Kenya is not linearly associated with the amount of mortgage lent.

H₀₂: Performance of mortgage firms is not linearly associated with the interest rate charged.

The result is presented in table below:

Table 4.1: Correlation Matrix

Variables	Interest		EBIT
	Rate	Mortgage	
Interest Rate	1.000		
Mortgage	-0.379	1.000	
EBIT	0.468	0.751	1.000

The results show that there is a positive but moderate linear relationship between financial performance and interest rate charged by mortgage firms (0.468). The study, thus, cannot reject the second (H02) as high interest rate increases the profit margin of mortgage firms which a resultant decrease in mortgage demand owing to increased cost of borrowing. That is, it increases performance though not in perpetuity.

The study found a positive and good linear relationship between performance and amount of mortgage (0.751). Therefore, the study rejects the first null hypothesis (H01). This finding follows that higher amount of mortgage lent is directly proportional to the economies of scale experienced thus higher revenue from the consequent interest charged by the firm. This results in higher profit (financial performance) of the mortgage firm.

Correlating performance and the factors using the annual dataset, the study found an overall consistent correlation result.

Table 4.2: Annual Correlation Results

	2007	2008	2009	2010	2011
Mortgage	0.612	0.532	0.467	0.631	0.331
Interest Rate	-0.435	0.422	0.212	0.528	0.662

4.2.3 Goodness of Fit Statistics

The study sought to determine the goodness of fit for the regression analysis using the correlation coefficient between the overall independent variables and performance and the coefficient of determination from the same. Coefficient of determination established the strength of the relationship between the two.

Table 4.4: Goodness of Fit Statistics

	2007	2008	2009	2010	2011
Observations	31	31	31	31	31
DF(degrees of freedom)	30	30	30	30	30
R (Correlation)	0.678	0.785	0.768	0.861	0.753
R ² (determination coefficient)	0.460	0.616	0.590	0.741	0.317
Adjusted R ²	0.437	0.519	0.487	0.517	0.435
Durbin-Watson (DWj Statistic)	1.812	1.839	1.747	1.718	1.995

Table above illustrates that the strength of the relationship between performance and independent variables. From the determination coefficients, it can be denoted that there is a good relationship between interest rate and financial performance in the 2007-2011 datasets since the R" values were between 0.460 and 0.741. Using the adjusted R~ value which is a correction to the R² by taking into account the number of variables used in the model, the study established the same result for the dataset.

The study also used Durbin Watson (DW) test to check that the residuals of the models were not auto correlated since independence of the residuals is one of the basic hypotheses of regression analysis. Being that the DW statistics were close to the prescribed value of 2.0 for residual independence, it can be concluded that there was no autocorrelation.

4.2.3 Regression Results

In addition to descriptive analysis, the study conducted a cross-sectional performance multiple regression on mortgage companies over the period 2007-2011.

4.2.3.1 Analysis and Interpretations

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (performance) that is explained by two independent variables (mortgage and interest rate).

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.924 ^a	.854	.516	.419

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (financial performance) that is explained by the two independent variables (mortgage and interest rate).

The two independent variables that were studied, explain only 85.4% of the customer satisfaction as represented by the R^2 . This therefore means that other factors not studied in this research contribute 14.6% of the financial performance of mortgage firms. Therefore, further research should be conducted to investigate the other factors (14.6%) that affect financial performance of mortgage firms.

Table 4. 6: Anova

Model-	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.037	4	0.072	0.182	.002
Residual	1.089	23	0.038		
Total	1.122	27			

The significance value is .002 which is less than 0.05 thus the model is statistically significant in predicting financial performance. The F critical at 5% level of significance was 2.43. Since F calculated is greater than the F critical (value = 0.182), this shows that the overall model was significant.

Table 4.7: Model Summary: Coefficient of determination

Model		Unstandardized		Standardized		
		Coefficients		Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.603	1.036		0.842	0.002
	Mortgage	0.928	0.096	0.215	0.342	0.001
	Interest rate	0.113	0.145	0.087	0.578	0.023

The researcher conducted a multiple regression analysis so as to determine the effect of the independent variables (mortgage and interest rate) on the dependent variable (financial performance). As per the **R** generated table above, the equation ($Y = p_0 + p_1X_1 + p_2X_2$) becomes:

$$Y = 3.603 + 0.928X_1 + 0.113X_2$$

Where Y is the dependent variable (financial performance), X_1 is the mortgage variable, X_2 is interest rate variable.

According to the regression equation established, taking all factors into account (mortgage and interest rate) constant at zero, financial performance will be 3.603. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in mortgage will lead to a 0.928 increase in financial performance of mortgage firms and a unit increase in interest rate will lead to a 0.113 increase in financial performance of mortgage firms. This infers that mortgage contributes more to the financial performance of mortgage firms.

At 5% level of significance and 95% level of confidence, mortgage had a 0.001 level of significance and interest rate showed a 0.023 level of significance; hence the most significant factor is mortgage.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions of the key findings presented in chapter four, conclusions drawn based on such findings and recommendations there-to. This chapter is, thus, structured into discussions, conclusions, recommendations and areas for further research.

5.2 Discussions

The study found that the regression equations that related to financial performance of the firm to the firm's own profitability, mortgage, asset structure and interest rate. The study found that the intercept was generally positive from the year 2007 to the year 2011. On mortgages advanced, the study found positive relationships in the five regression analysis and three positive results in the case of interest rates.

5.2.1 Mortgage Allocated and Financial Performance

The regression analysis findings indicated a positive relationship between mortgage and financial performance. The study, also, found a positive consistent correlation between mortgage and financial performance (0.468). The study therefore failed to reject the null hypothesis that mortgage does not linearly related with the financial performance of mortgage companies. .

5.4 Recommendations

Since cost of mortgage does influence financial performance, the study recommends that mortgage firms in Kenya should assess their clients and charge interest rates on the mortgage accordingly, as ineffective interest rate policy can increase the level of interest rates and consequently cost of mortgage borrowing thus negates financial performance. Given that the type of interest rates charged on loans (fixed and floating) dictates on the ability and flexibility of borrowers to repay loans, the study recommends that mortgage firms should have a mixed interest rate policy as each type has its advantage and disadvantage. The Central Bank should apply stringent regulations on interest rates charged by mortgage firms so as to regulate their interest rate spread.

5.5 Suggestion for Further Research

The study suggests that further studies should be conducted on the effect of macro-economic factors on performance of mortgage firms in Kenya. Further, studies can also be done on the impact of interest on mortgages on real estate prices in Kenya. The study also suggests further studies on the factors influencing the rate of mortgage uptake in Kenya.

5.6 Limitations of the Study

The first limitation is the sample size as this is dictated by the number of firms utilised in the study does not only deal with mortgages only. Statistical tests normally require a larger sample size to ensure a representative distribution of the population to whom the results can be generalized. The second limitation is that the study was conducted using secondary data whose reliability cannot be verified by the researcher. Obtaining mortgages proportion contribution to the earnings before interest and taxes was also a very challenging issue.

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APPENDICES

Appendix I: Firms Offering Mortgage in Kenya as at 31st December 2012

1	Housing Finance
2	Kenya Commercial Bank Ltd
3	CFC Stanbic Ltd
4	Standard Chartered Bank Ltd
5	Barclays Bank
6	Equity Bank
7	National Bank of Kenya
8	Commercial Bank of Africa
9	Consolidated Bank Ltd
10	Development Bank Ltd
11	Eco-Bank Ltd
12	Cooperative Bank of Kenya Ltd
13	I & M Bank Ltd
14	Africa Banking Corporation Ltd
15	Chase Bank Ltd
16	Gulf African Bank Ltd
17	Bank of Africa
18	Bank of Baroda
19	Giro Commercial Bank
20	Family Bank Ltd
21	Fidelity Bank Ltd
22	Diamond Trust Bank Ltd
23	Prime Bank Ltd
24	NIC Bank Ltd
25	Guardian Bank Ltd
26	Credit Bank Ltd
27	Paramount Universal Bank Ltd
28	Bank of India
29	Transnational Bank Ltd
30	Jamii Bora Bank Ltd
31	Victoria Commercial Bank
32	Oriental Commercial Bank
33	Habib Bank Ltd

APPENDIX III

Mean Differences in earnings before interest and taxes of the mortgage firms

Firms	Entry category	Value	Standard error	T	Pr > t
t1	Mortgage	31	-.005	.018	.002
	Interest Rate	31	.004	.028	.004
19 <i>LZ</i>	Mortgage	31	-.004	.028	.004
	Interest Rate	31	.003	.029	.004
t3	Mortgage	31	.000	.018	.002
	Interest Rate	31	.001	.026	.003
t4	Mortgage	31	-.002	.021	.003
	Interest Rate	31	.004	.026	.004
t5	Mortgage	31	-.005	.020	.003
	Interest Rate	31	.005	.031	.004
t6	Mortgage	31	-.001	.018	.002
	Interest Rate	31	.000	.029	.004
t7	Mortgage	31	-.002	.021	.003
	Interest Rate	31	-.002	.024	.003
18	Mortgage	31	.001	.020	.003
	Interest Rate	31	-.002	.025	.003
t9	Mortgage	31	-.002	.020	.003
	Interest Rate	31	.005	.018	.002
t10	Mortgage	31	.005	.019	.003
	Interest Rate	31	-.003	.014	.002
t11	Mortgage	31	.000	.025	.003
	Interest Rate	31	.002	.020	.003
t12	Mortgage	31	-.002	.011	.002
	Interest Rate	31	-.002	.021	.003
113	Mortgage	31	.003	.018	.002
	Interest Rate	31	-.001	.022	.003
114	Mortgage	31	.000	.012	.002
	Interest Rate	31	.003	.022	.003
t15	Mortgage	31	.000	.018	.002
	Interest Rate	31	-.003	.021	.003
t16	Mortgage	31	.001	.017	.002

	Interest Rate	31	-.003	.025	.003
t17	Mortgage	31	.001	.018	.002
	Interest Rate	31	.001	.028	.004
t18	Mortgage	31	.000	.021	.003
	Interest Rate	31	.004	.014	.002
119	Mortgage	31	.002	.021	.003
	Interest Rate	31	-.002	.017	.002
t20	Mortgage	31	-.003	.016	.002
	Interest Rate	31	-.003	.020	.003
121	Mortgage	31	.003	.015	.002
	Interest Rate	31	-.014	.122	.016
t22	Mortgage	31	-.002	.023	.003
	Interest Rate	31	-.005	.017	.002
t23	Mortgage	31	.003	.022	.003
	Interest Rate	31	-.002	.021	.003
t24	Mortgage	31	.003	.017	.002
	Interest Rate	31	.000	.022	.003
t25	Mortgage	31	.000	.023	.003
	Interest Rate	31	.000	.027	.004
t2o	Mortgage	31	.004	.014	.002
	Interest Rate	31	.001	.025	.003
127	Mortgage	31	.005	.019	.002
	Interest Rate	31	.003	.024	.003
128	Mortgage	31	.002	.021	.003
	Interest Rate	31	-.003	.021	.003
t29	Mortgage	31	-.004	.016	.002
	Interest Rate	31	.001	.014	.002
t30	Mortgage	31	-.002	.020	.003
	Interest Rate	31	.002	.019	.003
t31	Mortgage	31	.001	.020	.003
	Interest Rate	31	-.012	.063	.008

APPENDIX III

Interest rate of firms offering Mortgage in Kenya as at 31st December 2012

	Bank	Interest Rate
1	Housing Finance	24%
2	Kenya Commercial Bank Ltd	15%
3	CFC Stanbic Ltd	21.75%
4	Standard Chartered Bank Ltd	18%
5	Barclays Bank	14%
6	Equity Bank	15%
7	National Bank of Kenya	17%
8	Commercial Bank of Africa	18%
9	Consolidated Bank Ltd	14%
10	Development Bank Ltd	15%
11	Eco-Bank Ltd	17%
12	Cooperative Bank of Kenya Ltd	13.5%
13	I & M Bank Ltd	14%
14	Africa Banking Corporation Ltd	18%
15	Chase Bank Ltd	18%
16	Gulf African Bank Ltd	16%
17	Bank of Africa	17%
18	Bank of Baroda	17.5%
19	Giro Commercial Bank	15%
20	Family Bank Ltd	15%
21	Fidelity Bank Ltd	15%
22	Diamond Trust Bank Ltd	16%
23	Prime Bank Ltd	15%
24	NIC Bank Ltd	17%
25	Guardian Bank Ltd	17.5%
26	Credit Bank Ltd	17%
27	Paramount Universal Bank Ltd	15%
28	Bank of India	15.5%
29	Transnational Bank Ltd	15%
30	Jamii Bora Bank Ltd	16%
31	Victoria Commercial Bank	13.5%
32	Oriental Commercial Bank	17%
33	Habib Bank Ltd	16%