THE EFFECT OF MORTGAGE FINANCING ON PERFOMANCE OF REAL ESTATE MARKET IN NAIROBI, KENYA

BY

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DECLARATION

I declare that, this project is my own original work and has not been presented in any other University or College for the award of Degree or Diploma or Certificate

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DEDICATION

This project is dedicated to my family, fiancée, comrades and friends for their great undivided support and enormous inspiration throughout my studies.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

CBK	:	Central Bank of Kenya
CMA	:	Capital Market Authorities
GDP	:	Gross Domestic Product
GoK	:	Government of Kenya
KNBS	:	Kenya National Bureau of Statistics

ABSTRACT

Real estate markets have gained increased attention over the past few years in both the developed and developing economies. This is brought about by their economic importance in both being a source of revenue and creation of employment opportunities. Due to the large capital requirement in real estate investment, the financing of the development cannot be entirely on the personal saving thus the need for other sources of financing such as mortgage financing. Despite the increase in the importance of the real estates, there is limited empirical evidence concerning its current trends and how it is impacted by mortgage financing. The objective of the study was to determine the effect of mortgage financing on performance of real estate market in Nairobi, Kenya. The independent variables included; number of mortgage loans, amount of mortgage loans balances, GDP growth and inflation rate while the dependent variable was the performance of real estate market. The study finds the number of mortgage loans, amount of mortgage loans balances, GDP growth and inflation rate to have a negative effect on the real estate market in Kenya. The study, by use of the research variables concludes a positive and significant effect between mortgage financing and real estate market performance which is supported by a coefficient of correlation of 0.746 that was obtained. The study recommends that the government through the Central Bank and mortgage lending firms execute policies that ensure that low interest rates is charged on mortgages.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The real estate sector in Kenya has witnessed an upsurge over the past years to become one of the major contributors to the country's economy. The increase in growth of the sector in the past decade makes it contribute as much or perhaps even more than the traditional sectors such as agriculture, wholesale and financial services (Economic Outlook, 2015). The sector contributed to an approximate of 10.6 per cent of the GDP in year 2014, which is a rise from its previous contribution of 4.9 per cent in 2013 (CBK, 2015).

Demand of the real estate is brought about by increased population growth with a deficit in the housing sector. This is attributed to the fact that Kenya's annual supply is approximately 50,000 housing units which is much lower than the estimated annual housing need of about 206,000 housing units (World Bank, 2014). Therefore, the real estate developers aim at filling this housing demand gap. Real estate consists of land and all property that is permanently attached to it including all the immovable such as buildings, houses, homes as well as its natural resources (Brueggeman & Fischer, 2008).

Investing in real estate market entails the purchase, ownership, management, rental land or sale of real estate with intentions of getting returns. The real estate investment not only provides shelter to individuals but also improves the income distribution in the country through the creation of employment opportunities (Masika, 2010). In spite of its importance, the real estate industry in Kenya continues to fail and not perform as well as expected. This has been brought about by various factors with the high capital involved in development of real estate being the major contributing actor (Kioko, 2014).

A survey on the factors hindering advancements in the sector further established high interest rates and provision of inadequate long term to be the major challenges. Thus, provision of efficient housing units depends greatly on the availability of a well-functioning housing finance system (Zhu, 2006). The real estate developers have sought to attain this through the use of mortgages to aid in the initiation and development of their projects. Through mortgage financing, potential homeowners are able to acquire property through a schedule mode of repayment and also it acts as a mode of income to the lenders. Furthermore, interest rates charged on real estate's contribute to government revenue.

Out of the 47 counties in Kenya, Nairobi forms the county with most real estate being established due to its high population. However, the area still remains highly constrained due to overcrowding, congestion and spatial challenges (Kenya National Bureau of Statistics, 2016). This is a clear indication of the real estate market not reaching the expected targets despite their being availability of mortgage financing and housing demand. Most of the people earning low incomes are settling on the cheaper housing units (Ministry of Planning, 2016).

Despite there being various studies conducted on the sector, the exact influence of the mortgage financing on real estate market performance isn't fully established. This is brought about by most empirical evidence having conceptualized mortgage financing and real estate performance separately. This research therefore focused on the effects that mortgages have on the real estate market performance in Kenya.

1.1.1 Mortgage Financing

Mortgage financing refers to loans for real estates which involves committing the real estate for an accrued loan (Xudong, 2008). The influence of mortgage financing on the performance of real estate's markets is caused by among other factors repayment period, price, risks, interest rates and insurance details of the mortgage.

Mortgage repayment is the mode of repaying the loan which can be through rescheduled payment, delinquency, prepaying through resale or fore closure (Kabiringe, 2006).Mortgage risks on the other hand refers to possible unfortunate occurrences that the lender and the borrower are exposed to (Lewis & Neave, 2008). Mortgage risks should be carefully calculated and evaluated to avoid unnecessary losses. Mortgaging price is obtained by calculating the total cost of the mortgage and addition of the intended profit. Mortgage insurance is a credit insurance which aims at protecting the lenders just in case the borrower defaults in payments and the property being taken into possession.

1.1.2 Performance of Real Estate Market

Real estate account for about 2.5 percent of Kenya's GDP and this has increased approximately 34 per annum since (World Bank, 2015). The trend has been increasing globally. For instance, mortgage prices have been rising in the United Kingdom but the buying price has remained 13 percent; making it more cost-effective than renting (Loyford & Moronge, 2014). According to Hass Consult property Index and Management reports in 2013, the average value for the same property in Nairobi was Ksh.8 Million in 2004 and Ksh.30Million in 2012. This shows a very rapid growth in the estates market.

Performance of real estate's markets is determined by a number of factors such as demand for housing, interest rates and inflation as well as transaction costs among others. However, there are other intervening factors such as personal income, age of buyers and demographics among others which greatly influence the performance of real estate's markets (Loyford & Moronge, 2014). High rate of rural-urban migrations as well as the increase of the middle level income class has resulted in rapid increase in performance of the real estates in Kenya. The improved performance of real estate's market in Kenya has also been shaped by other factors such as presence of mortgage intermediaries; growth of secondary mortgage market as well as increased risks based on pricing of mortgage property (Kioko, 2014).

1.1.3 Mortgage Financing and Performance of Real Estate Market

The real estate market has proved its importance in the recent past due to the high level of the transactions and prices, the contribution to the gross domestic product and the overall positive effects to the economy (Cazan, 2015). Despite this importance, most real estate projects still lag behind as they do not produce the expected returns. This is attributed mainly to the high capital outlay required during the initiation, development and maturation of the real estates. Hence the finance sourcing proves to be a milestone to many willing entrepreneurs.

Mortgage financing aims at puzzling out this financing problem faced by real market developers that are brought about by various constraints such as economic instability and stringent measures imposed by most financial institutions (Onyejiak *et al*, 2014). This is through provision of mortgage loans which are to be paid at a later date.

The sector has received much attention from scholars with the empirical studies conducted giving mixed results. For instance, Kioko (2014) notes that some empirical studies indicate mortgage financing has a positive influence on the performance of real estate market in Kenya. Fan, Huszar & Zhang (2011) and Muli, (2013) came up with similar findings as Kioko (2014) in their respective studies. Contrary, other studies have indicated very little to no influence at all (Wahome, 2012).This brings about inconsistencies in the findings of these empirical studies and so reliable conclusions cannot be drawn. This therefore calls for more keen empirical research in this area.

1.1.4 Real Estate Market in Kenya

Real estate include land and all property that is permanently attached to it including all the immovable such as buildings, houses, homes, together with its surrounding nature. The real estate market entails creation of permanent immovable assets, involves capital and labor intensive activities with aim of getting returns on the capital (Muli, 2013).

According to a survey conducted by CFC Stanbic bank in 2013 (CFC, 2014) real estate's market has been very lively in Kenya for the last one decade. This can be attributed to factors such as the desire of individuals to own homes, increased rural-urban migration and diaspora remittances among others which have led to exponential increase in the prices of property in urban areas. The rental charges have also increased greatly and they are not expected to reduce in the short run (Mwithiga, 2010).

Sometimes back real estate's development largely depended on availability of equity funds mainly through personal or cooperate savings (Onyejiak *et al*, 2014). However, due to diversification of the sector, there has been need to look for other sources of financing and mortgages have become the most relevant alternative.

Mortgage financing forms a crucial aspect of the real estate market. It entails the process by which a person or an entity buys either a home or a marketable property devoid of making the full payment in advance (Kitavi, 2013). Due to this security, various institutions emerged and continue to emerge so as to provide the mortgage financing services. Currently, there are thirty-three mortgage lending institutions with five lenders dominating the market, that is, Housing Finance, Kenya Commercial Bank, CFC Stanbic, Standard Chartered Bank, Barclays Bank which lend Sh29.8 billion, Sh22.8 billion, Sh8.8 billion, Sh7.7 billion, and Sh5.6 billion respectively, in 2014 (World Bank, 2015). The increased involvement of the banks in the provision of mortgages is also due to the accrued as the loans are for a long term period.

Finance is one of the essential inputs into housing production. Therefore, the level of financing is directly in relation to the level of real estate development. The mortgage market in Kenya currently experiences a vibrant economic growth in the mortgage industry over the last decade (CMA, 2012). The increase of mortgage financing in Kenya may have been influenced by factors changing mortgage climate, sustained economic growth, cross-selling potential, profitability and market penetration and liberalizations of market. The increase has also been brought about by the introduction of partnership and increased investment opportunities in Kenya by both local and foreign firms (Wambui, 2013). However, a major constraint is that due to the over dependence on the normal mortgage financing it is difficult to develop and finance large real estate at once.

1.2 Research Problem

Real estate markets have gained increased attention over the past few years in both the developed and developing economies. This is brought about by their economic importance in both being a source of revenue and creation of employment opportunities. However, due to the large capital requirement in real estate investment, the financing of the development cannot be entirely on the personal savings (Onyejiak *et al*, 2014) thus the need for other sources of financing such as mortgage financing. Though the Kenyan government has adopted initiatives so as to lower the cost of mortgage financing for home buyers and construction of housing, how real estate markets perform is what has raised much concern (Kenya Vision 2030).

Though the available theories namely Title, Lien and Intermediate Theory provide a framework for understanding the various principles of mortgage financing, the study conducted on the sector have not been fully conclusive. To begin with, Amande & Makori, (2015) obtained a significant positive relationship in their study. This findings concur with those of Arvanitis (2013) who also obtained a positive relationship. However, the exact effect of mortgage financing wasn't obtained by the studies as they attributed the performance of the real estate market to other factors other than mortgage financing, such as the pricing rates (Muli, 2011; Julius, 2012; Muthee, 2012).

Mortgage loans and real estate financing are very crucial in housing investment as in most cases it aids in making a transaction feasible and profitable. Though the government of Kenya, so as to boost the performance of the real estates in Kenya, introduced Real Estate Investment Trusts, the empirical studies conducted have obtained varying results on its performance (Ministry of planning, 2016). Much of the documented real estate market literature has dwelt on testing the efficiency of real estate markets, investigating the determinants of performance of real estate market, and demographics as factors determining the use of mortgage loans (Sewin Chan *et al*, 2015; Sebastião, 2015).

This shows that despite the increase in the importance of the real estates, there is limited empirical evidence concerning its current trends and how it is impacted by mortgage financing. Hence, the cited empirical literature is deficient to the extent that it does not explain the exact effect mortgage financing has on the real estate market performance in Kenya.

1.3 Research Objective

The objective of the study was to determine the effect of mortgage financing on performance of real estate market in Kenya.

1.4 Value of the Study

The findings of this study will be useful to stakeholders and those in involvement in the Real Estate market in Kenya. As such it will highlight how mortgage finances aid in the development of the real estates and how it influences the performance. This will enable them to understand various ways to boost their social capital and be able to benefit more from their investment. Additionally, it will act as a guideline for future investors on where and how to get finances for real estate investment. It will enable the venture capitalists to appreciate the financing gaps in the real estate sector in Kenya and aid in maximization of returns in their investment.

Through the findings, the government will be able to understand the exact role played by mortgage financing on the real estate development. This will enable it to appreciate the challenges and shortcomings faced by real estate developers in financing their projects hence form a guideline during policy change and formulation. Moreover, the government will be able to understand the role played by real estate market in boosting the country's economy and thus put in place incentives to encourage the growth of the sector.

The study will also be beneficial to academicians. It will enable them appreciate the emerging trends in real estate market in Kenya and the importance of mortgage financing. It will also form a ground for future research.

To the mortgage institutions, the study will provide insight on how the mortgages they provide are used in the development of the real estate market. This will enable them to provide innovative services and products to the home owners. Moreover, the findings will enable them to evaluate the performance of mortgage loans so as to avoid the default rates. This would best be done by providing mortgage loans at affordable interest rates.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews different theories relating to this study, discussing their recommendations and significance to the research variables. It also reviews the empirical literature with emphasis on the objective of the study, methodology and the results. The chapter finalizes by giving the conceptual framework, a summary of the reviewed literature and an overview of the research gap.

2.2 Theoretical Framework

This study adopts three main theories namely; Lien Theory, Title Theory and Intermediate Theory

2.3.1 Lien Theory

According to this theory which was initially proposed by Davis, (1956), the lender attains lien whereas the borrower attains both legal and equitable title of the mortgage property. There is restructuring of mortgages and deeds in that a non-possessory lien is imposed on the title to the mortgaged property whereas the owner still possess both legal and equitable title. This protects the lender so that in case the borrower defaults in payment, the lender will be able to repossess the property. The lender's lien is withdrawn upon completion of the payment of the mortgage. This is contrary to the current situation in which the buyer has the title to the property other than the lender.

According to Omollo (2013), the Lien theory was boosted by the introduction of the Land Act No. 6 of 2012 Section 95 to 104. The Act stipulates that a charge shall act only as security and not transfer of ownership. Within this new land law term mortgage has been collapsed in the definition of a charge and so the theory gives more advantages to the borrower than the lender.

This theory is very relevant to this study because some mortgage financiers have adopted it in practice. From this theory, a mortgage can be given lien in the property which can only foreclose upon to completion of the obligation of the mortgage.

2.3.2 Title Theory

The title theory on the other hand takes a different perspective from the Lien Theory. The title theory holds that until there is complete repayment of the loan payments, lender holds title to the property (Wambui, 2014). The mortgage is used as a conveyance of legal title so as to secure the debt while the borrower retains equitable title. The borrower can possess the property but the lender only hands over the deed after the whole obligation has been settled. In practical application of this theory, the mortgage title is spilt into legal title (given to the lender) and equitable title (given to the borrower) but the borrower is granted the legal title after completion of the mortgage payments. The property remains owned by the borrower and possessed by the lender until the lender completes repayment (Uroko, 2012).

This theory is applied in mortgage financing because it secures the investor's capital and the borrower risks losing the entire property in case of defaulting to pay the loan.

2.2.3 The Intermediate Theory

The Intermediate Theory was initially introduced by McKinnon, (1973) and acts as a hybrid of both the title and lien theories. It has the similarity to the lien theory which applies until there is a default on the mortgage whereupon the title theory applies. The theory holds that the borrower retains title to the property and the mortgage is a lien (Medley, 2011. Mortgage terms are critical and important thus need of distinction upon default. For title under intermediate theory, the mortgage institutions possess the ownership over the property on behalf of the borrower thus transfer of property to the third party in trust.

2.3 Determinants of the performance of Real Estate Markets

2.3.1 Mortgaging financing

Mortgage financing is termed as providing the finances required for building and the necessary resources for the particular projects by housing finance institutions against some collateral (Macharia, 2013). The loan given is usually for the development process of the estates. The rising rental costs increased the need for mortgages.However for a positive impact to be achieved from the mortgages, the mortgage terms, repayments, interest rates and insurance ought to be favorable to the client.

2.3.2 Interest Rates

Real interest rates is an indicator of the cost of financing investments. Thus, it has been established to have profound impacts on residential house prices both locally and internationally (Barksenius & Rundell, 2012). As such, Money supply acts as a great determinant of the level of interest rates since increased supply of money lowers interest rates thus boosting performance of real estate markets as more customers will be willing to invest. The vice versa can ensue if there is reduced money supply.

2.3.3 Inflations

Inflation can be described as a sustained increase in the general price level of goods and services in an economy over a period of time. The effects of inflation can be both positive and negative (Biller, 2007). Thus during periods of continued upward movement of prices, the cost of building and management of residential property will follow suit. Hence increase in inflations is more likely to cause a decrease in the performance of the real estate market. Investors and sellers of real estate property will therefore factor inflation into the selling prices.

2.3.4 Fluctuations in exchange rates

Changes in the demand and supply of the currency in the FOREX market causes fluctuations. This is explained by the fact that foreign investors will have more local currency to invest since for every dollar, they will get more shilling. However, in long term, the effect is expected to be negative as depreciation of local currency indicates poor economic performance. Barsky (2009) explains that in long term, this is due to the investors' risk prevalence. The foreign investors will demand a risk premium for expected poor economic performance while local investors maintain more precautionary savings and shun away of risky assets. This will result in performance of the real estates to reduce significantly.

2.4 Empirical Review

Mortgage finance is a very crucial cornerstone of the housing markets. A research conducted in china by Fang (2004) to determine the relationship between home mortgage loan and real estate market and their effects on banks financial performance revealed a positive correlation. The study concluded that mortgage financing is a very critical factor in the ever increasing home prices in china. However, the study also found that microfinance factors and the residents' sustainable income cannot be ignored as far as the rising home prices are concerned. Therefore, this study revealed that mortgages play a very important role in promoting real estate's development.

Another research conducted by Boamah (2011) to establish the factors influencing mortgage origination in the country in Ghana found out that exchange rate was the only key factor that influences mortgage origination in the country. This was because mortgages in Ghana are dominated by foreign currencies (US dollar) and these mortgages target Ghanaians living abroad and have their income in foreign currencies.

In another study in Nairobi by Kamau (2011) to investigate the various determinants of investments in the real estate industry in Nairobi found out that all the real estate investment firms work towards reducing housing deficit in Nairobi. This study also revealed that although de-regulation of real estate's sector is necessary if the sector has to be more efficient, it cannot guarantee provision of a full range of real estate investment accommodation in Nairobi.

Julius, (2012) conducted a study to investigate the determinants of Residential Real Estate Prices in Nairobi. This study aimed at evaluating various factors that have been affecting the real estate market in Nairobi with a focus on the effects level of money supply, interest rates, and inflation, employment and population growth rates. The study revealed that employment growth rate and the level of money supply information gives financial analysts and economists better understanding of the real estate market. These factors also influence the prices of real estate in Nairobi.

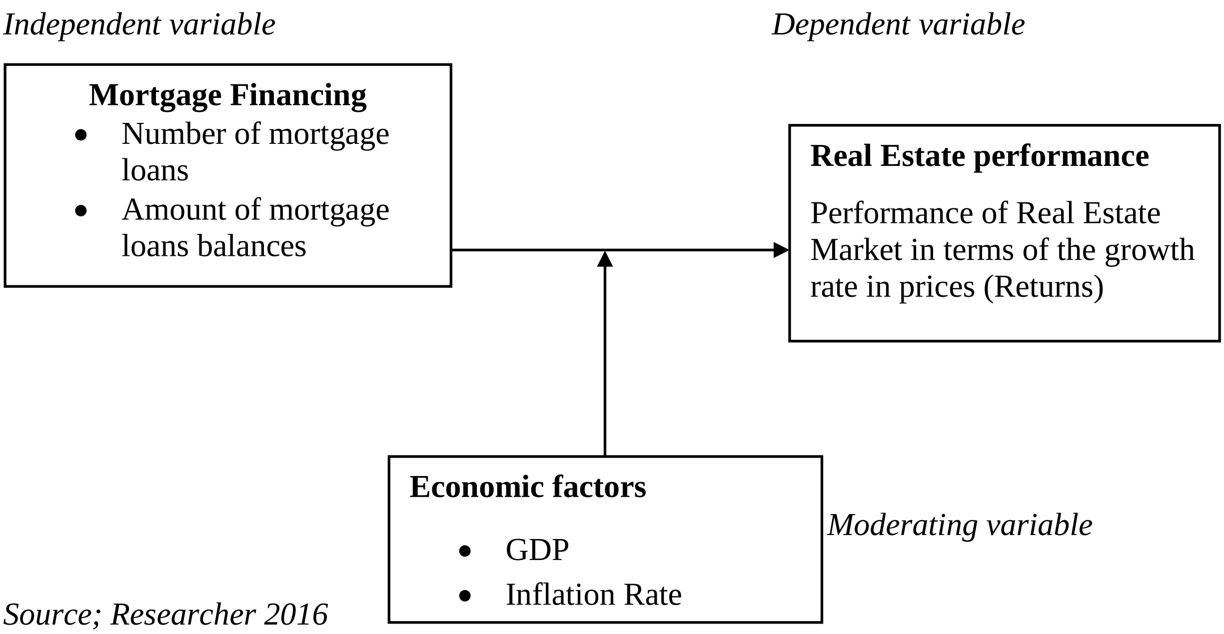
Jumbale, (2012) investigated the relationship between house prices and real estate financing in Kenya and found out that there is a positive correlation between the changes in prices of housing prices long-term evolution of real estate financing. The study adopted the causal study design in obtaining the study's objectives. The sampling technique used in selecting the sample was the purposive sampling technique making a total of 20 respondents who formed the sample size of this study.

Kariuki, (2013) in another study to find out what determines the performance of real estate's markets concluded that there is a significant negative correlation between residential real estate prices and interest rates but a positive correlation with GDP and the and level of money supply.

2.5 Conceptual framework

Conceptual framework is the systematic presentation which represents the variables that explain the objectives of the research. It is a graphical or visual description of the phenomenon under study showing the relationship among the research variables (Makori & Memba, 2015). This study will adopt the conceptual framework below.

Figure 2. 1 Conceptual framework



Source; Researcher 2016

From figure 2.1 above, performance of real estate's market is a dependent variable and will be measured in terms of return on investment, rental income and risks of occupancy level. Mortgage financing is the independent variable and will be measured in terms of the number of mortgage loans and the amount of mortgage loans balances. Economic factors measured in terms of GDP and Inflation Rate will constitute the moderating variables.

2.6 Summary of Literature Review

Over the last five years, real estate has continued to be the most preferred investment option among individuals and investors owing to the fact that it has higher returns at approximately 25% per annum total returns as compared to other sectors (Cytonn, 2016). This has led to increased concern on the performance of the sector with a wide literature supporting the availability of mortgage financing being major determinant. The available theories though they try to provide the basis of the need for mortgage financing, suffer a few setbacks due to the ideal assumptions on which they operate. Further, there is scanty empirical literature on the relationship and most studies are not conclusive.

There is evidence that the real estate market is enlarging not only in Nairobi but also in other parts of the country. However, little information is available concerning the role of mortgage in real estate market in Kenya, whilst at the same time the availability and access to mortgage finance is limited. Studies conducted both locally and internationally provide differing findings. While some authors established a weak relationship, others found a strong relationship or no relationship.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of the research design, population of the study, sample design, data collection method and finalizes with the data analysis.

3.2 Research Design

Research design refers to the plan the researcher intends to use so as to generate answers to the research questions based on the research objectives and the research problem. This study adopted a descriptive research design. Kothari, (2004) describes a descriptive research design as an empirical design which denies the researcher direct control over the variables and it allows the researcher to have close association with the research variables while at the same time maintaining minimal interference. Descriptive research design is also important in describing the characteristics and size of the target population as well as makes some meaningful predictions (Mugenda & Mugenda, 2008). This study sought to determine how the real estate's market performance in Kenya is affected by mortgage financing. This design was therefore be the most suitable. The design was also preferred due to its ability to minimize biasness and maximize reliability of the findings.

3.3 Population of the Study

Population of the study refers to a group of elements or persons of similar characteristics and of interest to the researcher (Mugenda & Mugenda, 2008). The population of the study entailed all the real estate firms registered by Kenya Property Developers Association (KPDA). The real estate developers registered by Kenya Property Developers Association (KPDA) are sixty nine in number as at 31st July 2016 as per appendix I. This population was targeted because the real estate firms are the ones who take part in arranging for the prequalification of buyers, discussion of general mortgage loan programs and answer finance and closing related questions hence the most conversant with the study topic.

3.4 Sample Design

The sampling design represents the sampling unit, sampling procedure and the sample size for the study. The study sample comprised of use of online publications such as journals, mortgage institutions surveys and CBK documentations on mortgage loans.

3.5 Data Collection

The study purely used secondary data. Secondary data refers to already documented information in either publications, books, journals or previously conducted studies. The preference of secondary data is that it is convenient, easily assessable and time saving hence chosen for the study.

3.6 Data Analysis and Presentation

After the collection of data, the data was analyzed quantitatively and represented through descriptive statistics by use of tables, charts, graphs, percentages and frequencies. Percentages were used largely to analyze and quantify responses and thereafter degrees of opinion were established and used to answer research questions. The data was analyzed by multiple regression models by use of The Statistical Package for Social Sciences (SPSS).

3.6.1 Analytical Model

Multiple regression analysis models was used in the study.

The analytical relativity between performance of real estate market and mortgage financing that will be employed entailed;

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

Y= Performance of Real Estate Market in terms of the growth rate in prices (Returns)

X_1, X_2, X_3, and X_4 are the research control variables and represent:

X_1 = Number of Mortgage Loans

X_2 = Amount of Mortgage Loans Balances

X_3 = GDP growth.

X_4 = Inflation Rate

$\beta_0 \ldots \beta_4$ are the various intercepts

ε = Error Term

3.6.2 Test of Significance

The analysis of the variance (ANOVA), t-tests, z-tests and F-tests was used to establish the significance between the study variables. As such, it determined the relationship significance between the dependent and the independent variables at the 95% level of confidence.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

Data was collected from the Central Bank of Kenya, Central Bureau of Statistics and real estate firms' published financial statements obtained for the period of five years from 2011 to 2015. To interpret the results of the study, descriptive and inferential statistics were used

4.2 Description of study variables

This section sought to understand the trend in the study variables over the study variables so as to understand better the context of the study. The study variables were number of mortgage loans, amount of mortgage loan balances, inflation rate and GDP growth.

4.2.1 Number of mortgage loans

Due to the increased importance of mortgages in development, the number of mortgage loans sourced has increased significantly over the recent years. As such an upward trend has been experienced in the mortgages sector, as illustrated by figure 4.1 below. The lowest number of mortgages recorded was in the second quarter of 2012 which was a total of 130,800 mortgages. This was followed by 140,500 mortgages in the third quarter of the same year. Since then, the number has been consistently rising to close at 380,100 mortgages in the year 2016. The increase in the number of mortgages may be attributed to the fact that, mortgages have proven to be a reliable source of capital especially in the real estate developments.

Figure 4. 1 Number of mortgage loans

Source: Research Data, 2016

4.2.2 Amount of Mortgage Loans Balances

The amount of mortgage loan balances entails the mortgage loans which are yet to be settled. This is majorly because not all projects financed by mortgages get to perform as well as expected, hence the difficulties in fulfilling the mortgage obligations. As shown by the figure below, the amount of mortgage loan balances has been constantly rising. This is from the lowest of Ksh 53 billion in 2011 to the highest of Ksh 143.3 billion end year 2015, a total of Ksh 90.3 billion in mortgage balances. This high number of mortgage balances raises concerns onto what exactly causes the balances not being settled, with the underperforming real estate market being one of the possible causes.

Figure 4. 2 Amount of Mortgage Loans Balances

Source: Research Data, 2016

4.2.3 GDP

The Gross Domestic Product has been used as evaluation measure of the economic progress of any particular country. Particularly, an increasing GDP will imply improving economic standards, while a decreasing GDP would imply low economic standards. In Kenya, the GDP has been dynamic, evidenced by frequent fluctuations as documented by figure 4.3 below. The highest GDP of 7.5% growth is in the second quarter of 2013. This is followed by GDP of 6.3% in the third quarter of 2013. Correspondingly, various low GDP growths have been experienced with the lowest duration being in the year 2012, a low GDP of 4.3 being obtained. This may be explained due to the political unrest created by the elections which had occurred. The lowest GDP growth rate however was 3.1% being in end 2013. This was contributed majorly by increased insecurity levels in the country. Thus raising the need for the government to come up with measures aimed at curbing the GDP volatility.

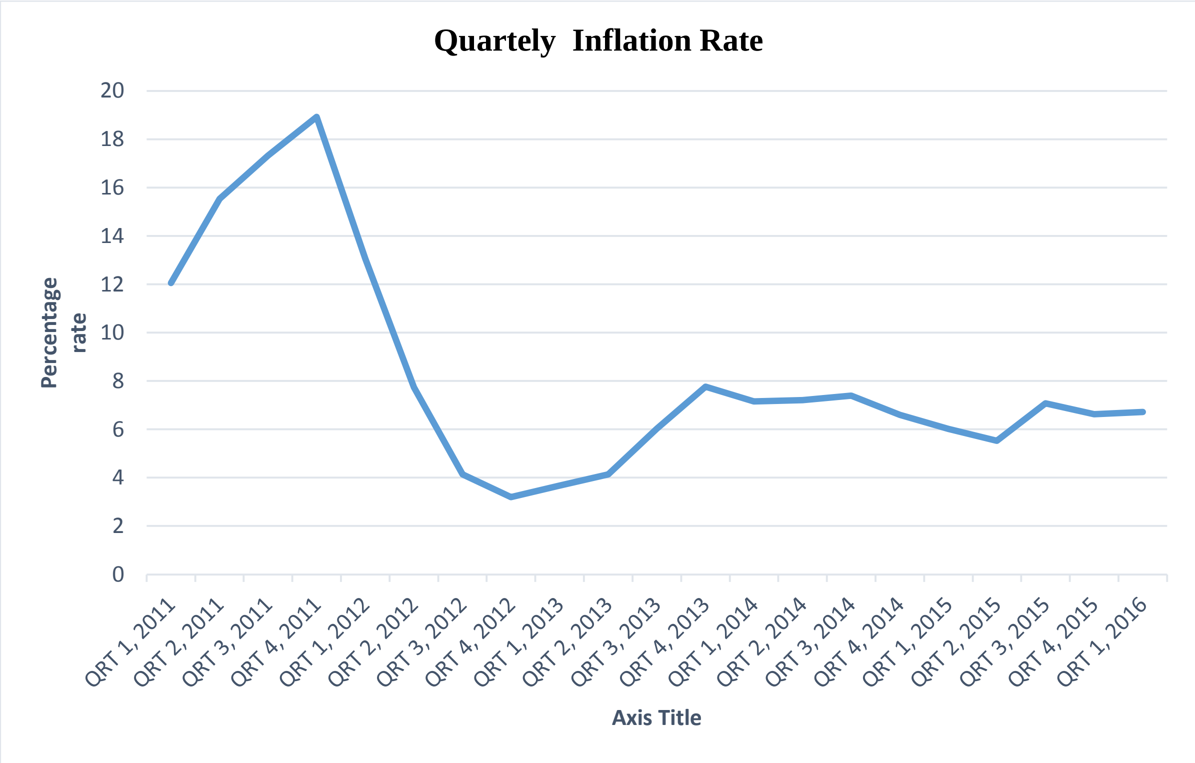
Figure 4. 3 GDP

Source: Research Data, 2016

4.2.4 Inflation

From the findings, it can be noted that the mean values for inflation rate have significantly dropped since the year 2012. Particularly, the rates dropped from 18.93% in 2012 to a rate of 3.2% 2013, a total of 15.73% drop. This may be attributed greatly to the various measures put in place by the Central Bank so as to reduce the inflation rates.

Figure 4. 4 Inflation



Source: Research Data, 2016

4.2.6 Descriptive Statistics

The descriptive statistics are as shown in table 4.1 below. The minimum number of mortgage loans attained during the study period was 4.66, maximum of 7.54, and standard deviation of 0.6453. The minimum of amount of mortgage loans balances was 11.92, maximum of 19.2, mean 14.0892 and standard deviation of1.2301. The minimum inflation of rate was 14.62%, maximum of 19.31%, mean of 16.2301% and standard deviation of 0.6214 %. Whereas Minimum GDP growth was 3.4, maximum of 6.6, mean of 4.5 and standard deviation of 1.05.

Table 4. 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Number of mortgage loans	69	4.66	7.54	5.0231	0.6453
Amount of Mortgage Loans Balances	69	11.92	19.2	14.0892	1.2301
Inflation	69	14.62	19.31	16.2301	0.6214
GDP	69	3.4	6.6	4.467	1.05265

Source: Research Data, 2016

4.3 Normality test

In order to ensure consistency and accurate analysis using the multiple regression model, the study variables ought to be well distributed. This relates to the level of Skewness and Kurtosis of the study variables. The findings of the normality test conducted by the study are as illustrated by the table 4.2 below.

Table 4. 2: Normality Tests

Variable	Skewness	Kurtosis
Number of mortgage loans	-0.464	-0.520
Amount of Mortgage Loans Balances	-0.075	-0.678
Inflation	0.147	-0.631
GDP	0.004	0.404

Source: Research Data, 2016

Skewness which is the extent to which a distribution of values deviates from symmetry around the mean was used to test normality of the data. A value of zero means the distribution is symmetric, while a positive Skewness indicates a greater number of smaller values, and a negative value indicates a greater number of larger values. Values for acceptability for empirical purposes are (+/-1 to +/-2). The Skewness statistics showed that Number of mortgage loans, Amount of Mortgage Loans Balances, Inflation and GDP had values of -0.464, -0.075, 0.147 and 0.004 respectively. All the variables were acceptable since they were falling between +/-1 to +/-1.

Kurtosis which is a measure of the "peakedness" or "flatness" of a distribution was used in testing the normality of the study variables. Number of mortgage loans, Amount of Mortgage Loans Balances, Inflation and GDP had Kurtosis values of -0.520, -0.678, -0.631 and 0.404. The kurtosis values were all close to 0, +2 or -2 indicating that the data was distributed towards respective means and hence normal.

4.4 Correlation analysis

To establish the relationship that existed between the research variables, Karl Pearson's coefficient of correlation was employed by the study. This method entails the measure of the strength of a linear association between two variables and is denoted by r. The Pearson correlation coefficient, r, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. A value less than 0 indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases.

As illustrated below, the number of mortgage loans has a Pearson correlation of 0.483 and a p-value of 0.089. This means that the number of mortgage loans has a positive effect on the performance of real estate market in Kenya. The effect is significant at 95% and 99% confidence level since the p-value is less than 0.05 and 0.01 respectively. This means that an increase in the number of mortgage loans leads to improved financial performance of the real estate market. This is due to the mortgages enabling the provision of adequate money for the development of the real estates.

Inflation rates on the other hand has a Pearson correlation of -.398 and a p-value of 0.012. This means that inflation rates has a negative effect on mortgage default rate. The effect is significant at 95% confidence level since the p-value is less than 0.05. Similarly, the amount of mortgage loans balances was also established to have a negative effect having a coefficient of -0.410 and a p-value of 0.622. These findings concur with that of Sebastião, (2015) who also established a negative effect in his study. GDP Growth on the other hand has a correlation of -0.0921 and a p-value of 0.021. This implies that all the study variables except the number of mortgage loans had negative relations with real estate market performance.

Table 4. 3: Correlation Analysis

		Real Estate Performance	Number of mortgage loans	Amount of Mortgage Loans Balances	Inflation	GDP
Real Estate Performance	Pearson Correlation	1				
Number of mortgage loans	Pearson Correlation	0.483	1			
	Sig. (2-tailed)	0.089				
Amount of Mortgage Loans Balances	Pearson Correlation	-0.41	.607**	1		
	Sig. (2-tailed)	0.622	0.004			
Inflation	Pearson Correlation	-0.398	-0.164	-.544**	1	
	Sig. (2-tailed)	0.012*	0.555	0.004		
GDP	Pearson Correlation	-0.0921	-.*	-.466*	0.015	1
	Sig. (2-tailed)	0.021*	0.045	0.076	0.966	
	N	69	69	69	69	69

Source: Research Data, 2016

4.5 Regression analysis

In this study, multiple regression analysis was used to determine the effect of mortgage financing on real estate market performance in Kenya. Number of mortgage loans, Amount of Mortgage Loans Balances, GDP and Inflation were used as control variables. As shown in table 4.4 below, there is a strong positive relationship between independent (Number of mortgage loans, Amount of Mortgage Loans Balances, GDP and Inflation) and dependent variable (Real Estate Market Performance) with a coefficient of correlation of 0.746.

Table 4. 4: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.7456	0.556	0.419	0.1743

a. Predictors: (Constant), Quartely Inflation Rate, Quarterly GDP X3, X1 No of Mortgage Loans (billions), X2 Amount of Mortgage Loans Balances (billions)

Source: Research Data, 2016

The analysis of variance results are shown in table 4.5 below

Table 4. 5: Model Analysis of Variance

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.495	4	0.124	4.07	.024a
Residual	0.395	13	0.03		
Total	0.89	17			

a. Predictors: (Constant), X4-Quartely Inflation Rate, X3- Quarterly GDP , X1 No of Mortgage Loans (billions), X2 Amount of Mortgage Loans Balances (billions)

b. Dependent Variable: Y- Performance of Real Estate Market in terms of the growth rate in prices

Source: Research Data, 2016

The model coefficients obtained by the study are shown in table 4.6 below. As shown in the model, Number of mortgage loans has 0.451, Amount of Mortgage Loans Balances 0.601, Inflation 0.024 and GDP -0.128. The positive coefficient shows that all the variables except inflation rate have a positive effect on the real estate market performance in Kenya. This means an increase in these variables will result in increased real estate market performance whereas an increase in the inflation rate would result in decreased financial performance of the real estate market.

All the models except amount of mortgage loans balances are significant at 95% since their p-values are less than 0.05. These finding compares with that of Muli, (2013) who conducted a study on the factors affecting the growth in real estate investment in Kenya. The predictive model thus developed by the study is $Y = 0.586+ 0.451X_1 + 0.601X_2 + 0.024X_3+ -0.128X_4$. Where Y is the Performance of Real Estate Market in terms of the growth rate in prices (Returns), X_1 is the Number of Mortgage Loans, X_2 is the Amount of Mortgage Loans Balances, and X3 is the GDP growth while X_4 is the Inflation Rate.

Table 4. 6: Model Coefficients

Coefficients(a)					
	Un standardised Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	0.586	1.094		0.536	0.601
No of Mortgage Loans (Millions)	0.451	1.443	0.29	0.312	0.76
Amount of Mortgage Loans Balances (billions)	0.601	1.495	0.378	0.402	0.694
Quarterly GDP	0.024	0.448	0.01	0.054	0.958
Quartely Inflation Rate	-0.128	0.225	-0.129	-0.572	0.577

a. Dependent Variable: Y Performance of Real Estate Market in terms of the growth rate in prices

Source: Research Data, 2016

4.6 Discussion of findings

The study sought to determine the effect of mortgage financing on performance of real estate market in Kenya. Various variables of mortgage financing were investigated namely; number of mortgage loans, amount of mortgage loans balances, inflation and GDP. The study found that relationship between the number of mortgage loans and performance of real estate market has a Pearson correlation of 0.483 and a p-value of 0.089. This means that the number of mortgage loans has a positive effect on the performance of real estate market in Kenya. The effect is significant at 95% and 99% confidence level since the p-value is less than 0.05 and 0.01 respectively. This implies that mortgage loans are of importance in improving the performance of real estate market. The study's findings relate to that of Jumbale, (2012) who investigated the relationship between house prices and real estate financing in Kenya and found out that there is a positive correlation.

Inflation rates on the other hand was established to have a Pearson correlation of -.398 and a p-value of 0.012. This means that inflation rates has a negative effect on mortgage default rate. The effect is significant at 95% confidence level since the p-value is less than 0.05. Similarly, the amount of mortgage loans balances was also established to have a negative effect having a coefficient of -0.410 and a p-value of 0.622. This is due to the fact that both the inflation rate and the amount mortgage loans balances reduce the amount of capital that was to be gained from the real estates. Hence the real estates end up not performing as well as expected.

The study aimed at determining the exact relationship that existed between mortgages financing on performance of real estate market in Kenya. To achieve this, a multiple regression model was used of which a coefficient of correlation of 0.746 was obtained. This implied a positive relationship between the study variables, which was significant at 95% confidence level p-value of 0.024 is less than 0.5 and 0.1. This means that the effect of independent variables on the model has significant effect on the dependent variables. From the model developed, Number of mortgage loans has 0.451, Amount of Mortgage Loans Balances 0.601, Inflation 0.024 and GDP -0.128. The positive coefficient shows that all the variables except inflation rate have a positive effect on the real estate market performance in

Kenya. This means an increase in these variables will result in increased real estate market performance. An increase in the inflation rate would result in decreased financial performance of the real estate market.

The predictive model thus developed by the study is $Y = 0.586+ 0.451X_1 + 0.601X_2 + 0.024X_3+ -0.128X_4$. Where Y is the Performance of Real Estate Market in terms of the growth rate in prices (Returns), X_1 is the Number of Mortgage Loans, X_2 is the Amount of Mortgage Loans Balances, and X3 is the GDP growth while X_4 is the Inflation Rate. The study's findings are in line with those of Loyford and Moronge, (2014) who also established a positive effect between mortgage financing and the real estate market performance. However, they contradict Onyango (2015) who established that no relationship existed.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The independent variables included; number of mortgage loans, amount of mortgage loans balances, GDP growth and inflation rate while the dependent variable was the performance of real estate market. The descriptive analysis of the variables showed that all the variables have had a varying trend over the recent years thus showing volatility in the current market situations.

The relationship that exists between the study variables was also sought. To attain this, Pearson correlation was used. The findings obtained showed that the number of mortgage loans has a Pearson correlation of 0.483 and a p-value of 0.089. Inflation rates on the other hand has a Pearson correlation of -.398 and a p-value of 0.012. Similarly, the amount of mortgage loans balances was also established to have a negative effect having a coefficient of -0.410 and a p-value of 0.622. GDP Growth on the other hand has a correlation of -0.0921 and a p-value of 0.021. This thus implies that all the study variables except the number of mortgage loans had negative relations with real estate market performance.

The study also aimed at determining the relationship that existed between mortgages financing on performance of real estate market in Kenya. To achieve this, a multiple regression model was used of which a coefficient of correlation of 0.746 was obtained. This implied a positive relationship between the study variables, which was significant at 95% confidence level p-value of 0.024 is less than 0.5 and 0.1. From the model developed, Number of mortgage loans has 0.451, Amount of Mortgage Loans Balances 0.601, Inflation 0.024 and GDP -0.128. The positive coefficient shows that all the variables except inflation rate have a positive effect on the real estate market performance in Kenya. The predictive model thus developed by the study is Y = 0.586+ 0.451X1 + 0.601X2 + 0.024X3+ -0.128X4. Where Y is the Performance of Real Estate Market in terms of the growth rate in prices (Returns), X1 is the Number of Mortgage Loans, X2 is the Amount of Mortgage Loans Balances, X3 is the GDP growth while X4 is the Inflation Rate.

5.2 Conclusions

Based on the study findings, the study makes a number of conclusions. To begin with, the study concludes that based on the five year period under which the study was conducted (2011-2015), mortgage financing has gained popularity among many developers in Kenya. This can be attributed to the increase in need for capital for developments in real estates, of which mortgages have proven to be reliable. The study finds the number of mortgage loans, amount of mortgage loans balances, GDP growth and inflation rate to have a negative effect on the real estate market in Kenya. This is mainly due to the expenses encountered during the fulfilment of mortgage obligations under unfavorable economic factors. However, number of mortgage loans had a positive impact on the real estate market performance. On the relationship that exists between the research variables, the study concludes a positive and significant effect between mortgage financing and real estate market performance. However, the effects are concluded to vary with each variable.

5.3 Recommendations to Policy and Practice

From the findings, several recommendations are made. The study concludes that interest rates determine greatly the mortgage sector. The study thus recommends that the government through the Central Bank and mortgage lending firms should implement policies that reduce on the interest rates that financial institutions charge on mortgages.

Additionally, the central banks should apply stringent regulations on interest rates charged by banks so as to regulate the number of mortgage default rate.

5.4 Limitations to Study

The study was faced with various limitations in undertaking the study. To begin with, researcher also experienced a challenge in obtaining secondary data from the audited accounts of some of the real estate companies since some of these companies did not disclose some mortgage aspects or had not yet published them at the time the research was conducted. The researcher was faced with time constraints since the wide research was initiated over a short period.

Also, this study centered in the only on particular variables of mortgage financing. This may not be adequate enough in explain the impact mortgage financing have on the real estate market. As such various variables such as mortgage insurance might have been omitted out. The study also did not consider the factors affecting the performance of the real estate market such as accessibility and availability of housing finance. Despite of this, the information provided did provide an accurate picture of the phenomena that exists as none of these difficulties were sufficient to over-ride the significance of this research.

5.5 Suggestions for Further Research

While the research questions were well answered, several areas remain unclear and require further research. First the study focused only on few aspects of mortgage financing. Future studies should aim to incorporate other aspects of mortgage financing such as mortgage insurance. The studies should also take into considerations other factors affecting the performance of the real estate market in Kenya other than mortgage financing. This will enable comprehensive generalization of the study’s findings.

Also, this study examined the effect of mortgage finance on the performance of the real estate sector in in Kenya over a period of 5 years. Similar tests should be done over a longer period of time to enable complete generalization of the study's findings.

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