EFFECT OF MORTGAGE FINANCE ON DEVELOPMENT OF THE REAL ESTATE SECTOR IN NAIROBI COUNTY

BY:

SERAH M. KITAVI

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, UNIVERSITY OF NAIROBI

2013

DECLARATION

I declare that this research project is my original work and has never been submitted anywhere for a degree or qualification in any other university or institute of higher learning.

Signature ________________ Date ________________

Serah Mbithe Kitavi

D61/60083/2011

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

Signature ________________ Date ________________

Mrs. Winnie Nyamute

Lecturer, Department of Finance and Accounting

School of business

University of Nairobi

ACKNOWLEDGEMENT

I thank the almighty God for giving me the grace and making all things possible.

Special thanks go to my supervisor Mrs. Winnie Nyamute for her invaluable guidance and assistance. Her astute advice, insightful criticisms and patient encouragement aided the writing of this project in innumerable ways.

I cannot find words to express my gratitude to my parents, fiancé, sisters, brothers and friends whose encouragement, support, patience and understanding enabled me complete my studies.

Finally, I would like to thank the management, administrative staff, fellow students and lectures at the University of Nairobi especially the school of business. May the Lord bless you abundantly.

DEDICATION

To my late father Mr. Jackson K. Malika and mother Mrs. Ruth Malika whose foresight in education, constant encouragement and unparalleled love drove me to this level of education. Your sacrifice for my education shall remain a permanent inspiration in my life and the generations after. To my fiancé Mr. Joseph Ndata for moral support, cooperation and understanding that I needed while doing this project.

TABLE OF CONTENTS

LIST OF ACCRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
ARMS	Adjustable Rates Mortgages
CBK	Central Bank of Kenya
DLA	Development Lease Agreement
EAC	East African Community
KCB	Kenya Commercial Bank
KES	Kenya Shillings
MBAA	Mortgage Bankers Association of America
MOU	Memorandum of Understanding
OPIC	Overseas Private Investment Corporation
PPP	Public-Private Partnership
SPSS	Statistical Package for Social Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
UN	United Nations
USA	United States of America

LIST OF TABLES

ABSTRACT

The UN-Habitat (2011) noted that real estate development in most emerging economies in Africa face a dilemma following the inability to adequately finance urban shelter, amidst a dire need and ever-increasing demand for housing. Mortgage loans and real estate financing is very important in housing investment as in most cases it is the key for making a transaction feasible and profitable. According to Marcum, & Goddard (2012), the real estate sector experienced a great expansion in the years 2002 to 2007 due to low cost of mortgage finance worldwide, which encouraged home ownership. According to UN-Habitat (2009), home ownership has become a significant measurement of economic health in USA and Australia with almost 63% and 45% of home owners acquiring their homes through mortgages respectively. The situation in Nairobi is no different from that of African emerging economies. Little information is available concerning the role of mortgage in housing development in Nairobi, whilst at the same time the availability and access to mortgage finance is limited. It is against this background that this study undertakes to determine the effect of mortgage finance on development of the real estate sector in Nairobi County. The interest of this research is to establish opportunities for growth in housing in Nairobi through the availability and access to mortgage finance.

The study was conducted as a descriptive survey. The target population consisted of 33 licensed mortgage lenders in Kenya. However, data available was for 25 mortgage lenders which were sampled through the CBK where aggregate values of mortgage were obtained for the period 2008 to 2012. Collection of data was done by way of in-depth document analysis guide. The researcher edited and coded the data into the SPSS. Both descriptive and inferential statistics were used to analyze the data. In descriptive statistics, the researcher used mean and standard deviation; while in inferential statistics multivariate regression analysis was used to determine the relationship between variables.

The study found that the average of house units for the 25 sampled mortgage companies as extracted from the financial and annual statements indicated an upward increase over the 5 year period, with the highest being 3,220 in 2012. In addition, the standard deviation depicts a variation in number of house units build annually. The study also found that, the averages for annual housing loans allocated by the 25 sampled mortgage lending companies rose from 5.70 to 5.97. It is also evident that the sampled mortgage lending companies extended almost the same amount of annual housing loans as the standard deviation is so small (less than 1) depicting minimal variability. The study also found that, from the annual averages of the 25 mortgage lending companies, it is evident that annual number of house units built increased with increase in the amount of annual housing loans allocated. The key finding of the study was that, there is a positive relationship between annual number of house units build and annual housing loans allocated. In conclusion therefore, the move by the mortgage lending firms to allocate more housing loans to real estate developers significantly influences the number of housing units developed in Nairobi County.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

According to UN-Habitat (2011), the real estate development in most emerging economies in Africa is faced by a dilemma resulting from the inability to adequately finance urban shelter, amidst a dire need and ever-increasing demand for housing. As such, there has been a rise in poverty in the cities mainly in developing countries in a process referred to as urbanization of poverty. This has led to influx of cities in search for better lifestyles causing growth of slum areas. Nevertheless, the cost of housing has accelerated in the past few years; a situation that has had considerable implications for the desire of home ownership, and has consequently undermined development of the housing sector.

The issue of mortgage loans and real estate financing is very important in housing investment as in most cases it is the key for making a transaction feasible and profitable. African economies are waking up to the fact that mortgages are becoming an attainable reality for transformational potential home ownership. However still, in many of these economies, housing finance remains underdeveloped despite its recognized economic and social importance. The low levels of lending reflect the small numbers who can access mortgages because of affordability and availability as stated by Noppen, (2012).

In a distinct comparison, mortgage lending in developed countries is at an all-time high, to encourage increased home ownership. Continuous efforts are being made to extend mortgage opportunities to the ordinary people. According to UN-Habitat (2009), home ownership has become a significant measure of economic health in USA and Australia with almost 63% and 45% of home owners acquiring their homes through mortgages respectively. This is adequate attestation of the significance housing finance plays in developing the real estate sector to be a productive contributor to the national income.

The situation in Nairobi is no different from that of African emerging economies. Its economic development has been on a slow but steady rise. Such development has been observed in the growth of the Banking sector with the increase in the number of banks across the county with agent banking in almost all estates. The city suffers a desolate housing situation amidst an increase in demand for housing occasioned by economic development. Such demand is further stimulated by the steady growth of the middle class owing to the advancement in trade, education and banking. There is also an additional anticipated increase in demand for housing prompted by the integration of the East Africa Community, and the awaited completion of the ongoing construction of highways.

Regrettably still, little information is available concerning the role of mortgage in housing development in Nairobi, whilst at the same time the availability and access to mortgage finance is limited. It is against this background that this study undertakes to determine the effect of mortgage finance on the development of the real estate sector in Nairobi. The interest of this research is to establish the opportunities for growth in housing real estate in Nairobi through the availability and access to mortgage finance.

1.1.1 Mortgage Financing

The concept of mortgage financing 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. However, it requires one to put forward some equity, while the funding entity finances a fraction of the intended project. This means that one will need to save up some money for the requisite deposit, forming equity financing. Depending on the amount of loan funded, one will be required to make monthly repayments to the financing institution for the mortgage so granted (Kuria, Gachari, Odera, & Mvuria, 2013).

The term mortgage refers to a loan secured by actual assets or property through the use of a mortgage note which acts as a proof for the existence of the loan and the encumbrance of the real estate through the granting of a mortgage which acts as a collateral for the loan. The mortgagor is entitled to pay the mortgage loan with an interest in addition to the principle amount. The two common types of mortgage loans are fixed rate mortgage loan and adjustable rate mortgage loan. A flat rate of interest is applied for the fixed rate mortgage loan while for the ARMs loan, adjustments are made to the interest rate at given intervals. (Harris & Friedman, 2006).

There was a high demand in housing in the 2003s going to the 2000s resulting from low rates of mortgage finance. As such, people with low income could afford to obtain mortgage to build houses and others could afford to build expensive homes since mortgage loans was easily accessible (Sirota, 2003). This continued to 2007 when there was a financial crisis that affected the mortgage industry when they handled nearly half of all loan originations each year. This resulted to the merging of the mortgage financing industry and the increasingly fundamental role of commercial banks as housing mortgage originators currently. As a result, commercial banks originated 51 percent of mortgage loans by the end of 2009. In addition, mortgage brokers exist in the market acting as agents for the large mortgage lenders (Baker & Wiedemer, 2012).

1.1.2 Real Estate Development

According to MBAA (2002), Commercial real estate assets are continually bought, sold, developed and redeveloped. This makes real estate investment one of the nation's most active and important business activities. Individuals are waking up to the need to own homes around Nairobi with others buying homes at an early age as a worthwhile investment. However, the challenge of home ownership has been occasioned by shortage of land with people being issued with fake title deeds, and government interference that has seen demolition of people's homes.

Merrill et al, (2006), in a report prepared for OPIC noted a number of positive developments in the housing market over the past few years in Kenya. Despite the fact that the housing market for upper-and-upper-middle income earners in Kenya is becoming more dynamic, there is huge and mounting gap- approximated at 150000 units per year- between existing supply and the total requirement for housing in Kenya. A survey of real estates in Meru Municipality by Messah (2011) on factors influencing real estate property prices designated that real estate accounts for a big percentage of wealth and it is multifaceted. Prices are determined by the forces of demand and supply. Though, for some other reason it may be determined by other forces. The real estate market is distinguished by more or less predictable cycles of booms and busts.

1.1.3 The Relation between Mortgage Financing and Development of Real Estate

According to Marcum and Goddard (2012), the real estate sector experienced a great expansion in the years 2002 to 2007 due to low cost of mortgage finance worldwide, which encouraged home ownership. The central bank promoted lending through low rates of interest and commercial banks were enthusiastic about giving loans. Unfortunately, this went down during the 2007 and 2008 global financial crisis which affected the world economy. There was a crash in the real estate sector as investors were left holding property with no one to purchase as the mortgage interest rates had gone high and people could not afford the loans as before.

Okonkwo (1997) affirms that finance is one of the essential inputs into housing production. Therefore, the level of financing is directly related to the level of real estate development. Looking at Nairobi, the housing sector is at a critical precipice, given that there is an ever increasing demand for housing amidst a grim housing situation. Mortgage finance is key in resolving this situation, in a city whose economic conditions are looking up. The research will aid in precipitating the role of mortgage finance in the development of the housing sector, as well as in the development of the Housing Finance Policy Framework for Nairobi.

Mortgage finance has been the number one reason people are able to afford homes. The challenge has however been high mortgage rates and lack of information to many individuals occasioned by ignorance. The mortgage market in Kenya currently has Thirty-three mortgage lending institutions with five lenders dominating the market, that is, Housing Finance, Kenya Commercial Bank, CFC Stanbic, Standard Chartered Bank, Barclarys Bank which lend Sh25.8 billion, Sh18.1 billion, Sh8.8 billion, Sh7.7 billion, and Sh4.4 billion respectively, in 2011 (The Star, May 30, 2012).

1.1.4 Real Estate Industry in Nairobi County

Scholars have divided the real estate sector into formal and informal with its market presenting a peculiar complexity with three autonomous but associated markets connected to the economy. These markets include the space, asset and development markets which solely portray market arenas where trading take place and prices are determined through the interplay of demand and supply. The space market entails the interaction of the demand by residential property users with current stock of space which is made available by landlords. This predicts the patterns of rents and the level of occupancy with vacancy clearing the market (Geltner, 2007; Keogh, 2006; Pugh, 1997; Ubale, Martin & Wee, 2013).

Nairobi has been one of the cities in Africa full of activity with real estate forming a bigger part of investment. However, there has been increase in slum population where people are not able to finance their houses and cannot afford better lifestyle. Land issues have also led to increase in conflicts with some pieces of land going un-developed due to land disputes. Building of real estate in Nairobi has been majorly by individuals or groups with the commercial sector lagging behind due to uncertainties and challenges including speculation, in-availability of funds, materials bias, volatile economic environment and delays (Noppen, 2012).

Noppen, (2012) asserts that the price for housing in Nairobi has drastically increased due to the increased demand for housing with limited supply. He further states that, apartments in Nairobi are currently priced at KES 11.58M (USD 136,000), being an increase from 5.2M (USD 61,000) in December 2000. High demand has seen the rise in property prices and with KES 2M (USD 23,000), one cannot afford a house which the low income earners cannot even afford. The improving infrastructure in Nairobi with the construction of Nairobi-Thika super highway and the ongoing Eastern by-pass, is creating more demand for real estate's hence creating more demand for mortgage finance. There are several office blocks up coming in Nairobi most of which are financed through mortgage loans, hence enlarging the mortgage market in Nairobi.

1.2 Research Problem

Research by Freire, Ferguson, Lima, Cira and Kessides (2007) highlighted that legal land development for low-income households has dried up or is in the process of drying up in many developing country cities. For example, in Buenos Aires, the formal submarket for sales of individual lots in monthly installments to low-income households was important from 1950 to 2000 (World Bank, 2006), but has disappeared since then. The mounting pressure on urban land has accelerated the rise in housing prices, and made housing markets mostly dysfunctional in many major metropolitan areas of developing countries.

Research by Monsod (2011) stated that a functioning real estate market is one where households can translate their hypothetical demand for quality housing into valuable demand at market prices, and where the supply of housing is reactive to that demand. Housing, unfortunately, is prone to significant market failures, especially noticeable at the bottom end of the housing market. On the supply side, investments are relatively risky due to the 'irreversible' nature of housing, inherent uncertainties, and the long gestation periods involved in its production. Without a complete set of insurance markets to intervene these risks, private markets tend to under invest in new construction, maintenance, or upgrading giving rise to neighborhood decline, slums or segregation

There is also the problem of slow adjustment in the housing system, manifested by market prices adjusting much more rapidly than quantities, among others. Large populations in the city live in informal settlements which are congested and lack basic services such as water and proper sanitation, a situation that has been exacerbated by the slow growth of housing development in the area. While this is the case, real estate sector development as is dependent on the ability to finance home expansion, can be largely attributed to the inability to access mortgage finance in addition to the challenges encountered in availing such finance (Noppen, 2012; UN-Habitat, 2011).

The disconnect between demand for real estate property and its supply capacity by investor-developers, with the actual growth levels of the real estate industry despite the existence of mortgage is a cause of alarm; a fact which justified the purpose of this research. The questions that begged for answers therefore were: What level of financing through the mortgage market is enough to propel real estate development? What is the size and growth rate of the mortgage market? Is mortgage finance readily available to the property buyer? Are there factors that inhibit the accessibility to mortgage? These questions represent controlling variables whereupon if answered would provide solutions increasing the level of real estate development.

1.3 Objectives of the Study

The objectives of the study were:

i. To ascertain the level of growth of mortgage market in Nairobi county.

ii. To determine the effect of mortgage finance on real estate growth

1.4 Value of the Study

The research is of significant importance to mortgage financing institutions as it provides recommendations to the Central Bank, commercial banks and other mortgage lenders to explore better ways and means of improving availability and access to mortgage finance. This would best be done by providing mortgage loans at affordable interest rates.

Further, the study aids the Kenyan government in understanding the contribution of the real estate sector in its overall economic growth. This foster implementation of policies that reduce mortgage interest rates in order to promote funding of the real estate sector as a fundamental investment project. In addition, the study advices that a law be passed where Kenyans can't build their own homes unless they go through real estate developers like it is done in the developed countries. This will reduce on the risk of non-occupancy where developers have got stuck with houses because an ordinary Kenyan thinks it is cheaper to build their own house rather than purchase homes from property developers.

The study is of benefit to investors as it provides advice to real estate investors on the importance of mortgage in financing their investments. In addition, the study advices investors on the demand levels for housing hence give an opportunity for further investment.

Nevertheless, the research add to the existing literature and provide background information to research organizations and scholars who will need to carry out further study on real estate financing as a key area development. For instance, a research on SWOT analysis should be conducted on the housing finance situation in the country, using lenders (financial institutions) and borrowers (private estate developers/companies) to ascertain how housing finance in the country is characterized by problems associated with risk, information, fund availability and government's policies.

Finally, the research impacts on households' decisions concerning financing for housing. It provides more information on the availability and accessibility of mortgage finance and the importance of the same in securing a home. The study further advocates for low interest rates on mortgage which would encourage borrowing and in turn promote housing development.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter seeks to explore more on the literature associated with the main areas of interest in this study. These areas include; the use of mortgage finance to fund real estates, availability and accessibility of mortgage finance, and availability of information in the market with regard to mortgage finance. The chapter looks into various theories that have been studied by earlier researchers and scholars, highlighting their approaches and findings in the above areas. The first section of this chapter covers a theoretical review and work of earlier researchers while the second part of this chapter will show the empirical evidence showing results of earlier researches. The final bit will be to bring out the research gap in this area of study, and hence show the need for the study.

2.2 Theoretical Review

2.2.1 The Theory of Financial Leverage and Optimal Capital Structure

Financial leverage is the notion of using debt to fund an investment. Basically, projects are financed by the use of debt and equity including real estate projects. The best way to show financial leverage is by looking at the relationship between the return in general on the project and the return on equity. For instance, a certain real estate asset providing a 12.5 percent return. Meaning, the annual after tax cash flow is 12.5 percent of the cost of the asset.

Where the asset is financed by all equity, the return to the equity investor is equal to the overall return on the asset, 12.5 percent. Where a debt can be taken at a favorable rate, that is less than 12.5 percent, it can be used to enhance the return on the equity. A portion of an asset that gives up 12.5 percent is financed by lower cost debt, the difference going through to the equity holder. This is to mean that, favorable financial leverage will result in an equity yield greater than 12.5 percent. Unfavorable financial leverage will occur if the cost of borrowing exceeds the return on the investment, resulting to a decline in the return on the equity, resulting in a financial risk. According to this theory, the investor's equity position increases with leverage, hence the irrelevance of capital structure. (Clauretie & Sirmans, 2010).

According to Deng (2009), USD 560 billion of residential property was sold in China, up by 80% from the previous year before constituting a tremendous rise in construction, lending and speculative buying. Nationally housing rose by close to 200% in 2009. With the high prices and clear indication of enthusiasm everywhere, developers are scrambling to build more mansions, villas and high rise apartments. Further, the study indicated that an investor in Shangai bought 54 apartments in a single day in 2009, a villa sold for USD 30 million in 2008 and in December a consortium of developers paid more than USD 3.5 billion for ahuge tract of land in Guangzhou: an important trading centre as well as a busy port and the capital city of the province of Guandong.

2.2.2 The Theory of Financial Intermediation

Allen and Santomero (1999) argue that, Capital market imperfections form the basis for understanding intermediaries; that is, transaction costs and asymmetric information. The main reason for the existence of financial intermediaries is risk management, liquidity and credit evaluation. These financial intermediaries include commercial banks, mutual savings bank, savings and loan associations and life insurance companies. The financial intermediaries act as a link between suppliers of funds (the depositors) and borrowers of mortgage loans. They also help distribute funds in a nation by transferring funds from those parts that have surplus to the areas that need to borrow (Coles & Boleat, 2012).

A qualitative research done by Ibem (2010) on the assessment of the role of government agencies in public-private partnerships in housing delivery in Nigeria revealed formal partnerships between government agencies and commercial private housing developers to be the prevailing type of PPP housing provisions in Nigeria. However, this exists also in other countries and relies on negotiations, MOU and DLAs between the partners and is centered on dealing with the needs of the middle and high income instead of the low income earners. Data used in this research was obtained from oral interviews and secondary sources and was presented and content analysis and descriptive statistics were applied respectively in the data analysis. Percentages and tables were used in describing and presenting the data.

According to this theory, mortgage finance can only be obtained through financial intermediaries due to the risk involved in direct borrowing. This is because; the financial intermediaries can assess the viability of projects to be invested in as well as their location and advice investors accordingly. They also look at the credit position of the borrower before advancing the credit to minimize cases of default in payment. Therefore, financial intermediaries have established some strict measures for borrowers to ensure that depositors' money is put into most useful projects that yield a reasonable return.

2.2.3 Portfolio Theory

This theory states that, "when assets are combined to form a portfolio, the expected return on the portfolio will be equal to an average of the expected returns on the individual assets, weighted by the relative amount of each asset included in the portfolio." A portfolio of several assets has expected return and expected risk (as measured by the variance in returns). A portfolio helps in reduction of risk that is present in an individual asset, without a sacrifice in expected returns.

There is a greater benefit in diversifying through portfolio construction of real estate assets. Properties of different types (hotels, warehouses, office building, and farmland) and/or different geographical regions are combined for maximum benefit. The greatest reduction in risk is through geographical diversification, where regions are defined in terms of their economy (Clauretie & Sirmans, 2010). However, this theory to a large extend favors large investors and not individuals, like life insurance companies and pension funds as a lot of capital outlay is required.

Messah (2011) employed a descriptive survey aimed at providing a picture of the relationship between the income of the real estate owners, demand of real estates, and the location of real estate properties, and the extend of the realtors contribution on the real estate prices. The research targeted real estate owners owning commercial houses. Questionnaires were used in data collection while data was analyzed by use of SPSS to obtain descriptive statistics. The results of the study revealed a correlation between real estate prices and income of investors. On the contrary, there was no association found between the location of the real estate and its price. However, price was found to be related to demand of the real property.

2.2.4. Efficient Market Theory

This is the conception that an assets trades in a market where its value reflects all available information about that asset. As such, the asset is priced "efficiently" in the sense that no one individual is able to trade on the basis of information available to all other market participants and in the process make excess returns. The concept of an efficient market prevents an investor from taking advantage of information that is generally available to all investors to make abnormal returns. However, market imperfections, asymmetric information and the high fixed cost of small scale lending do exist leading to market failures which are a primary reason for poverty and financial market failures (Stiglitz, 2006).

Ebrahim (2009) in his research, sought to establish a framework to increase the affordability of formal housing. His motivation was based on ad-hoc practice of clans in Oman to fund the purchase of houses for their poor brethren by use of interest free loans. He remarked that, an informal financial system focused on funding homes through mitigating adverse selection, moral hazard, administrative costs and transaction costs is likely to promote development by providing access to financial services to many who are shunned by the formal system. This is in agreement with Emmons and Mueller (1997), Buijs (1998), Hart & Moore (1998) and Smets (2000). Callier (2003) also affirmed that informal finance systems prevails for the reason that it resolves fundamental problems that are not handled accordingly by most financial systems in developing countries.

2.2.5. Agency Theory

Also known as principle-agent theory involves the use of game theory to the analysis of a particular class of social interactions. In this case, one individual (the agent) acts on behalf of another (the principal) and is required to advance goals of the principal. In this sense, the agent is entitled to negotiate on behalf of a principal or bring the principal into a contractual relation with a third party. However, these relations results in to agency conflicts due to conflicting objectives of the individual parties.

The theory of the firm explains how the conflicting objectives are brought to equilibrium in order to yield profit maximization. Nevertheless, agency theory has its shortcoming in that, the relationship maybe used as an excuse for unethical conduct, as agents seek to avoid responsibility claiming to be following orders or serving the client (Boatright, 2010). This therefore brings out a challenge in acquiring mortgage finance as it is likely to result in to higher transaction costs. It also poses the question of the effectiveness of mortgage brokers.

Mortgage is the most prevalent method of borrowing for the purchase of real estate the world over, a fact that makes critical the accessibility to and availability of mortgage finance to the development of housing and real estate. A research by Fang and Jie (2008) showed that the Chinese real estate market has made a significant progress since 2008, as a result of economic reforms that lead to home market liberalization. This has seen expansion of home mortgages loan which has become the primary financing tool for Chinese citizens.

According to the People's Bank of China, the balance of home mortgage enlarged by more than 20 times, from 126.0 billion yuan in 1999 to 29.83 trillion yuan in 2008. However, the challenge highlighted was increasing house prices due to development of home mortgage service, whereas the income of the citizens remained constant. A Research Publication by Thomas (2009) suggests that the advancement of industrialization, trade and international trade supported by cheaper transportation in the 19th century led to the emergence of large urban populations, in Europe and North America. It highlights the case of the USA which presents the best example of a country whose enlarging economy was rapidly fueling demand for housing through the escalation of immigrants, growth of industrial employment as well as rapid urbanization.

2.3 Relationship Between Mortgage Financing And Real Estate Development

Okonkwo (1997) affirms that finance is an essential contributor in housing production and that the main issues are sustainable availability, affordability and accessibility. With increase in urbanization, there is a greater need to increase housing to accommodate the rising population. Mortgage finance facilitates a faster growth in housing which caters for the need of the increasing population. The access to and tapping suitable sources of funding, by individuals and institutions is central to realizing their home ownership and investment decisions. Nevertheless, the amortization of mortgage loan makes it affordable to many borrowers who buy or construct their homes and repay the loan over a longer period of time without having to repay in lump sum.

According to Kolbe, Greer & Rudner (2003), an approximated one third of all mortgage loans are made to fund new housing construction. They further state that housing is a sector in the industry in which value is created. Its role in the overall economic development cannot be over emphasized. Lorimer (2008) stated that financial institutions invested profoundly in urban improvement in Canada. This was marked by an increase in the number of mortgage loans over the years on real estate with most of it being urban real estate. There has also been a rise in competition by banks and other mortgage lending institutions in advancing mortgage loans. This has improved accessibility of mortgage and lead to development in housing as stated by Clauretie and Sirmans (2010).

Tirtiroglo (1997) asserts that private investors are short of adequate equity funds to finance their development and especially real estate which require a large capital outlay. They thus turn to mortgage financing for faster development as an investment that would bring them returns after a certain period of time. David and Zhu (2004) emphasized the role of mortgage financing to real estate development by funding construction projects, purchase of land and existing buildings, financing companies t at they may fund real estate and lending to non-financial firms based on real estate collateral. Herzog and Early (2000) further states that mortgage financing has been behind the remarkable growth in the real estate sector in the USA.

According to UN-Habitat (2009) acquisition of homes in USA is a momentous measure of economic health. Majority of the homes are acquired through mortgage finance which is the most common source of financing real estate development. This is further supported by Kings (2006) who emphasized housing as a store of wealth which can allow owners to develop housing and non-housing activities. The housing stock which is a valuable asset can thus be used as security for more loans hence promoting development. Boleat (1982) observed an increasing trend in the issue of mortgage loans over the years especially in Australia. This resulted to a positive development change not only in the housing sector, but also in the State economy. Individuals and developers obtained mortgage loans for construction of new houses or purchase of already built houses.

Kings (2006) stated the role of government in the regulation of the mortgage finance industry. He further explained that the need for government to regulate housing finance is due to the expensive and valuable nature of housing, not forgetting the limited supply and high demand. Thus, the government regulates the market through interest rates, rent controls and regulating standards which impose costs on property-owners. Despite government regulation, Kings (2006) concludes by stating that, housing finance accomplish an extra specified purpose which is to guarantee a housing scheme that offers quality and access to households.

2.4 Empirical Evidence

The various researches revealed mortgage finance to be the most prevalent source of funding for real estate development as indicated by Fang and Jie (2008). A critical factor in the housing policy framework is the provision of low cost housing. However, as concerns are raised regarding the availability of low cost housing by local developers, investors as well as households concerns themselves with availability of finance to purchase these homes. Increase in industrial employment raises the demand for dwelling houses and the mortgage market in North America and Europe has evolved into an active mortgage market in the world which many other countries have tried to replicate to support the growth of home ownership across the world, especially after the 1930s great depression.

Research studies by Tomlison and Mary (2007) showed that the urbanization that is taking place in Sub-Saharan Africa of which Kenya is part of provides a context for the provision of housing. An overview of housing challenges in Sub-Saharan Africa reveals that all countries, similar to many developing countries, face backlogs. African cities are experiencing some of the fastest rates of urbanization in the world. The most striking aspect of these urbanizing cities is the extent of informal development, which is occurring. In many cities, the informal sector has outgrown the formal. Further analysis conducted by the UN-Habitat (2011) reveals that it is not just the urban poor that live in informal settlement, but also modest and middle-income households that are unable to access affordable housing. The UN-Habitat has therefore identified the concept of 'housing poverty'

A research by Merrill and Tomlinson (2006) in Tanzania, indicated that when the public sector ceased housing construction, household were left with little choice but to move into unplanned settlements and undertake their own house construction. Nearly 98% of houses countrywide and 90% of houses in the urban areas are constructed incrementally.

This situation remains today and is exacerbated by a 6% annual growth in urban population. In Kampala, Uganda findings for the City Council for Kampala revealed that many people construct their own houses using their own resources in comparison to those that access finance to have houses constructed for them.

A separate feature released by the UN-HABITAT (2009), asserted that the predicament facing housing development in most emerging economies in Africa was a consequence of the inability to adequately finance urban shelter, amidst a dire need and ever-increasing demand for housing. According to the report, the average cost of a decent low-income family house in Ghana for instance is more than 10 times the average annual salary of most key workers: a situation that has had considerable implications for the desire of home ownership, and has consequently undermined growth of the housing sector.

Macharia (2013) used a descriptive research design in her study on the effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. In achieving her study objectives, she employed a multivariate regression model. The conclusion of her results revealed a negative relationship between inflation and global financial crisis and financial performance of commercial banks offering mortgage finance in Kenya.

A research by Kings (2006) showed that there is a positive relationship between mortgage finance and real estate development. In his study, he highlighted that housing stock is a valuable asset to the owners who can use it as security and in the development of housing and non-housing activities. Consequently, housing expansion contribute to the country’s overall economic growth and development.

2.5 Summary of the Literature Review

A critical factor in the literature reviews as pointed out by Ebrahim (2009) is the provision of low cost housing. However, the concern by local developers, investors as well as households is the availability of financing for homes. The research by Ibem (2010) addressed only the needs of the middle and upper income rather than low income earners. As such, attention focuses on the role of mortgage finance in improving development in housing.

Financial intermediaries are primary institutions in mortgage financing. The mortgage market is highlighted to be affected by risk management and the cost of finance itself (Allen & Santomero, 1999). Furthermore, efficient markets are found to be the best trading place for mortgage loans where all information is available. Challenge exists in portfolio assets which can only be afforded by the big companies hence inhibiting growth of the real estate sector (Clauretie & Sirmans, 2010). This research therefore purposes to determine whether the slow growth in the consumption and growth of real estate housing in Nairobi is directly impeded by the unavailability and limited access to mortgage finance.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter examined the methodology that was used to carry out the study and collect data. It discusses the research design that was employed, the study population and sample, data collection, data analysis and the analytical model.

3.2 Research Design

The study was conducted as a descriptive survey of the sampled population. The survey method was relevant because it allowed a great flexibility essential for analysis and the study of the information collected. It had the advantage of generating in-depth information.

3.3 Population and Sample

The target population consisted of 33 licensed mortgage lending institutions. All were sampled through the CBK where aggregate values of mortgage were obtained for the period 2008 to 2012.

3.4 Data Collection

Collection of data was done by way of In-depth Document Analysis Guide. Data to be collected entailed trends of mortgage lending, aggregate number of housing loans issued per annum and aggregate number of houses build annually in Nairobi County. The data was sourced from the financial statements.

3.5 Data Analysis

Once data from the secondary sources were obtained, the researcher edited and coded the data into the SPSS. Both descriptive and inferential statistics were used to analyze the data. In descriptive statistics, the researcher used mean and standard deviation; while in inferential statistics multivariate regression analysis was used to determine the relationship between variables (the dependent and independent variables). The study findings were presented by use of tables. In the analysis process, relationships or differences that hold or differ from the expected relationship was subjected to tests of significance to determine with what validity data can be said to indicate any conclusions. Where there are differences, statistical tests helped to find out whether the differences are real or as a result of random fluctuations.

3.5.1 Analytical Model

This research adopted a simple regression analysis model which is stated below:

$Y = \beta 0 + \beta 1X + e$

Where:

Y= is the dependent variable representing aggregate number of house units build annually

β = vector of regression coefficients

β_0= is a constant term

X= Aggregate number of housing loans annually

e = error term

Y is the response variable which represents aggregate number of housing units while X is aggregate loan finance. βi, i= 1 represent slope coefficient whose sign portray the relationship between dependent variable and independent variable. E is the error term in the model which measures the goodness of the model and captures the effect of all other independent variables not captured in the model. This study used ANOVA to test for significant differences between means.

The study utilized Chi-square test in testing the significance of the variables in the study. Chi-square is a statistical test commonly used to compare observed data with data we would expect to obtain according to a specific hypothesis. The chi-square test is always testing the null hypothesis, which states that there is no statistically significant difference between the expected and observed result.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents data analysis and interpretation. The objective of the study was to ascertain the level of growth of mortgage market in Nairobi county and to determine the effect of mortgage finance on real estate growth. Data was collected from a sample of 25 mortgage financiers. The data sources included financial statements, magazines, journals, and publications by CBK, research papers and reports by various governmental committees in the housing sector for a period of 5 years (2008-2012) as well as internet sources, and publications.

4.2 Descriptive Statistics

Table 4.1 Number of house units

Year	**Number of house units**	
	Mean	Std. Dev.
2008	2101	1540
2009	2218	1691
2010	2446	1873
2011	2699	2056
2012	3220	2463

From the findings, averages for the number of house units for the 25 sampled mortgage lending companies as extracted from the financial and annual statements indicates an upward increase over the 5 year period, with the highest being 3,220 in 2012. In addition, the stardard deviation depict a variation in number of house units build annually.

Table 4.2 Annual housing loans

Year	**Annual housing loans (in billions)**	
	Mean	**Std. Dev.**
2008	5.70	0.60
2009	5.70	0.60
2010	5.80	0.48
2011	5.87	0.35
2012	5.97	0.18

From the findings, it can be noted that the averages for annual housing loans allocated by the 25 sampled mortgage lending companies rose from 5.70 to 5.97 billion. It is also evident that the sampled mortgage lending companies allocated almost the same amount of annual housing loans as the stardard deviation is so small (less than 1) depicting minimal variability.

From the annual averages of the 25 mortgage lending companies, it is apparent that the annual number of house units built increased with increase in the amount of annual housing loans allocated. This shows that there is a great relationship between annual number of house units build and annual housing loans allocated by the mortgage mortgage lending companies.

4.2.1 Correlation Analysis

To quantify the strength of the relationship between the variables, the study used Karl Pearson's coefficient of correlation. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a 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.

The Pearson's coefficient was used to verify the existence or non-existence of linear correlation between and among the variables. The findings are presented as follows;

Table 4.3: Pearson's Correlation Coefficient Matrix

	Annual number of house units built	**Annual housing loans allocated**
Annual number of house units built	1	
Annual housing loans allocated	.330**	1

**. Correlation is significant at the 0.01 level (2-tailed).

4.12.2 Correlation Analysis results

Results from table 4.3 above reveal that there is a significant positive relationship between annual number of house units build and annual housing loans allocated ($r = .330^{**}$, P-value < 0.01). Further, since the r value is so small (less than 0.5) there is consequently no evidence of multicollinearity and hence the following regression analysis.

4.2.2 Regression Analysis

Regression analysis is the statistical technique that identifies the relationship between two or more quantitative variables: a dependent variable, whose value is to be predicted, and an independent or explanatory variable (or variables), about which knowledge is available. The technique is used to find the equation that represents the relationship between the variables. Multiple regressions provide an equation that predicts one variable from two or more independent variables.

Regression analysis is used to understand the statistical dependence of one variable on other variables. The technique can show what proportion of variance between variables is due to the dependent variable, and what proportion is due to the independent variables. The relation between the variables can be illustrated graphically, or more usually using an equation. The study adopted simple regression guided by the following model:

$Y = \beta 0 + \beta_1 X1 + e$

Where:

Y= is the dependent variable representing aggregate number of house units build annually

β = vector of regression coefficients

β_0= is a constant term

X= Aggregate number of housing loans annually

e = error term

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.837[a]	.7005	.667	.23655

a. Predictors: Aggregate number of housing loans annually

In this case, the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R Square equals 0.7, that is, aggregate number of housing loans annually explain 70 percent of the variance in number of house units built annually.

Table 4.5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.992	3	.331	5.911	.003[a]
	Residual	1.455	22	.056		
	Total	2.447	25			

a. Predictors: (Constant), aggregate number of housing loans

b. Dependent Variable: number of house units

In this case, the significance value of the F statistic is 0.003 indicating the predictor variable (Aggregate number of housing loans) explain a variation in number of house units build annually and that the overall model is significant.

Table 4.6 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.449	0.698		2.074	0.048
	Aggregate number of housing loans (X)	0.631	0.074	0.056	8.527	0

a. Dependent Variable: number of house units

Y=1.449 + 0.631X

Table 4.6 present results of the simple linear regression of aggregate number of housing loans on number of house units built. From the findings, the coefficients of aggregate number of housing loans is positive and significant, indicating that the move by the mortgage lending firms to allocate more housing loans to real estate developers significantly influences the number of housing units developed. Without mortgage loans, housing growth would be 1.449 units. On the other hand, a one unit change in mortgage loan results in 0.631 change in house units.

4.3 Significance Testing

Chi-square test was also applied. Chi-square is a quantitative measure used to determine whether a relationship exists between two categorical variables. These tests are always testing the null hypothesis, which states that there is no significant difference between the expected and observed result. Testing of the null hypotheses is based on the fact that if the p value for the calculated Chi-square is $p > 0.05$, then the null hypothesis is accepted.

The objective of the study was to investigate the effect of mortgage finance on development of the real estate sector in Nairobi County.

Table 4.3.1: Relationship between number of house units build annually and number of housing loans annually

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.348	9	.002
N of Valid Cases	25		

Source: Research, (2013)

Table 4.3.1 shows that the chi-square value is 38.348 with an associated p of 0.002. Since p is less than $\alpha = 0.05$ confidence level ($p< 0.05\alpha$), the null hypothesis is rejected and therefore there is a significant relationship between number of house units build annually and number of housing loans annually.

4.4 Discussions and Interpretation of Findings

This study examined how aggregate number of housing loans influences the number of housing units developed. The study is motivated by theoretical models developed by Kau, Keenan, Muller, Epperson (2002) that examine the relationship between real estate development and mortgage loans by lending institutions. Real estate finance plays a crucial part in the development process (Miles et al, 2000). Therefore, mortgage lending firms play a crucial role in the financing of real estate through mortgage financing. They lend for the purchase of land for development of existing buildings; they finance construction projects; they lend to non-bank and they finance companies that they may finance real estate; and they lend to non-financial firms based on real estate collateral (David & Zhu, 2004). According to David and Zhu, (2004) in America, residential construction is peculiarly dependent on mortgage loans for example almost all one to four-family housing are being bought with the aid of mortgage loans, and this has led to a tremendous growth in the real estate sector in this USA.

According to Tirtiroglo, (1997), private investors seek mortgage financing for real estate because of lack of sufficient equity funds. With improved mortgage facilities, the performance of the real estate in a particular country will rise. These two variables in the study are positively correlated. An improvement in one of them will automatically lead to the improvement in the other. With a poorly developed real estate finance market, it makes it difficult for firms or households to mobilize the capital tied up in real estate. This denies firms the opportunity to use real estate as collateral for raising investment finance.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of data findings, conclusions based on the findings and recommendations there-to. The chapter also presents recommendations on further studies. The aim of the study was to examine the effect of mortgage finance on the development of the real estate sector in Nairobi county.

5.2 Summary of findings

From the findings, averages for the number of house units for the 25 sampled mortgage lending companies as extracted from the financial and annual statements indicates an upward increase over the 5 year period, with the highest being 3,220 thousand in 2012. In addition, the stardard deviation depict a variation in number of house units build annually.

From the findings, it can be noted that the averages for annual housing loans allocated by the 25 sampled mortgage lending companies rose from 5.70 to 5.97. It is also evident that the sampled mortgage lending companies allocated almost the same amount of annual housing loans as the stardard deviation is so small (less than 1) depicting minimal variability. In addition from the findings, the annual averages of the 25 mortgage lending companies, it is evident that annual number of house units built increased with increase in the amount of annual housing loans allocated. These finding support earlier work that was done by David and Zhu, (2004) where he emphasized the role of mortgage financing to real estate development through financing construction projects, lending for purchase of land for development and existing buildings, financing companies that they may finance real estate and lending to non-financial firms based on real estate collateral. This is further supported by Herzog and Earley, (2000) who argue that the tremendous growth in the real estate sector in the USA has been dependent on Mortgage Financing.

From the correlation analysis results, there is a significant positive relationship between annual number of house units build and annual housing loans allocated (r = .330**, P-value < 0.01). Further, since the r value is so small (less than 0.5) there is consequently no evidence of multi-collinearity. From simple regression analysis, the R Square equals 0.7, that is, aggregate number of housing loans annually explain 70 percent of the variance in number of house units built annually.

5.3 Conclusions

The aim of the study was to to examine the effect of mortgage finance on the development of the real estate sector in Nairobi county. The study concluded that there is a positive relationship between annual number of house units build and annual housing loans allocated and that the move by the mortgage lending firms to allocate more housing loans to real estate developers significantly influences the number of housing units developed in Nairobi county. In conclusion, the move by the mortgage lending firms to allocate more housing loans to real estate developers significantly influences the number of housing units developed.

The study concluded that the sampled mortgage lending companies allocated almost the same amount of annual housing loans as the stardard deviation is so small (less than 1) depicting minimal variability. Also the study concluded that annual number of house units built increased with increase in the amount of annual housing loans allocated.

From the correlation analysis results, the study concluded that there is a significant positive relationship between annual number of house units build and annual housing loans allocated as $r = .330^{**}$, P-value < 0.01. Further, since the r value is so small (less than 0.5) the study concluded that there is consequently no evidence of multi-collinearity. From the Chi-square test analysis results, the study concluded that the chi-square value is 38.348 with an associated p of 0.002 and since p is less than $\alpha = 0.05$ confidence level ($p< 0.05\alpha$), the null hypothesis was rejected and therefore the study concluded that there was a significant relationship between number of house units build annually and number of housing loans annually.

Finally, the study concluded that mortgage lending firms play a crucial role in the financing of real estate through mortgage financing. They lend for the purchase of land for development and existing buildings; they finance construction projects; they lend to non-bank and finance companies that they may finance real estate; and they lend to non-financial firms based on real estate collateral.

5.4 Limitations of the Study

Officials of some financial institutions in Nairobi County trading in housing finance were reluctant to reveal information. The inaccessibility of data materials from these institutions was a major challenge for this research as it led to delay in carrying out the study.

Another limitation is that the research entirely relied on secondary data which is primarily reported data. Due to the sensitive nature of the data, and the fact that an institution may want to be recognized as performing well, they may report information which is incorrect and this affect the study results.

Furthermore, the study was only carried out to investigate effect of mortgage finance in real estate development in Nairobi County whereas there are forty seven counties in the country. It did not consider the country's overall real estate development, which is imperative to economic growth and development.

This study did not seek to investigate the effect of mortgage insurance and its effect on interest rate. The study only sought to assess the effect of mortgage finance on development of the real estate sector; it did not consider the factors affecting the accessibility and availability of housing finance.

Inadequacy of time and financial constraints were the other complications encountered in the course of the research. However, none of these difficulties were sufficient to over-ride the significance of this research.

5.5 Recommendations

5.5.1 Policy Recommendations

From the findings, several recommendations are made. First, 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. Currently, Kenya has one of the highest interest rate for borrowing especially on mortgages compared to the other developed countries like the USA which charges 5% on their mortgages.

A law should be passed where Kenyans can't build their own homes unless they go through real estate developers like it is done in the developed countries. This will reduce on the risk of non-occupancy where developers have got stuck with houses because an ordinary Kenyan thinks it cheaper to build their own house rather than purchase the expensive homes from property developers.

5.5.2 Suggestions for Further Research

This study examined the effect of mortgage finance on the development of the real estate sector in Nairobi County over a period of 5 years. There is a need for further studies to carry out similar tests for a longer time period.

A similar study should also be carried out on mortgage insurance and how it affects the mortgage rate. In addition, further studies need to be carried out on the effect of attitude on mortgage financing in Kenya and how it affects the real estate development.

This study was silent on housing finance by individual people and long-term housing finance, which are of equal importance like those included in this study, serve as areas of interest for further studies.

This study made an explorative study on the effect of mortgage finance on the development of the real estate sector in Nairobi County. Therefore it suggests an explorative study on housing finance be conducted, by showing why many banks and major lenders do not give housing loans and recommend, ways to channel funds to residential development in Nairobi County.

Also the study recommends that, a SWOT analysis be conducted on the housing finance situation in the country, using lenders (financial institutions) and borrowers (private estate developers/companies) to ascertain how housing finance in the country is characterized by problems associated with risk, information, fund availability and government's policies.

REFERENCES

Allen, F. & Santomero A.M., (1999). What do financial intermediaries do? *Journal of Banking & Finance 25(2001) 271-294 and performance. Spatio Economic Development Record*, 1(5), 47–55.

Baker, J. K & Wiedemer, J, P. (2012). *Real Estate Finance (9th ed.)*. Mason: Cengage Learning.

Boatright, J. R. (2010). *Finance Ethics*: *Critical Issues in Theory and Practice*. Hoboken: John Wiley & Sons.

Boleat, M. (1982). *Housing Finance*: *An International Study*. London: Building Societies Association

Buijs, G., (1998). Savings and loans club: Risky ventures or good business practice? *A study of the importance of rotating savings and credit associations for poor women.* Development South Africa 15, 55-65.

Callier, P. (2003). *Informal finance*: *The ROSCA-An interpretation*. Kyklos 43, 273-276.

Clauretie, T. M & Sirmans, (2010). G.S: *Real Estate Finance*: *Theory & Practice (6th* ed). Mason: Cengage Learning.

Coles, A. & Boleat, M. (2012). *Mortgage market (RLE Banking and Finance)*: *Theory and Practice of Housing Finance. Vol.2*. Routledge.

David, M. & Zhu, C. (2004). *Availability of bank credit and the residential property price level*: evidence from America.

Deng, Y. & Liu, P., (2009). Mortgage prepayment and default behavior with embedded forward contract risks in China's housing market: *Journal of Real Estate Finance and Economics, 21, 47-83.*

Ebrahim, M. S. (2009). *Can an Islamic model of housing finance cooperative elevate the economic status of the underprivileged? Series 2008-04.* Nottingham University business school, UK.

Fang, H. & Jie C. (2008) "The relationship between home mortgage loan and real estate market in China: *evidences and insights from a regional perspective*.

Freire, M., Ferguson, B.W., Lima., R., Cira, D. & Kessides (2007). The world bank's 2005 international urban research symposium. *Global urban development vol. 3*.

Geltner, D. M., Miller, N. G., Clayton, J. & Eichholtz, P. (2007). *Commercial real estate analysis and investments (2nd ed)*. Thomson South-Western.

Gilbert, A. (2003). *The cost and benefits of the illegality and irregularity in the supply of land*. In: P. Baross, J. J. vander Linden (Eds.), *The transformation of land supply systems in Third World cities (pp. 17–36)*. Aldershot: Avebury.

Harris, J.C, & Friedman, J.P. (2006). *Keys to Mortgage Financing and Refinancing: Barron's Business Keys.* Barron's Educational Series.

Hart, O. & Moore, J. (1998). Cooperatives vs. Outside ownership. *Working paper 6421. National bureau of economic research, Cambridge, MA.*

Herzog D. and Earley F. (2000). Contributions from the World Bank on Housing Finance Group. Housing Microfinance. In *Housing Finance Policy for Emerging Markets*, pp. 395-415. World Bank. Washington, D. C.

Herzog, Thomas N. (2009) "History of Mortgage Finance with an emphasis on Mortgage Insurance". Report published in 2009. Society of actuaries.

Ibem, E.O. (2010). An assessment of the role of government agencies in public-private partnerships in housing delivery in Nigeria. *Journal of construction in developing countries. Vol 15(2), 23-48.*

Kau, J., D. Keenan, W. Muller, and J. Epperson (2002). The Valuation at Origination of Fixed Rate Mortgages with Default and Prepayment. *Journal of Real Estate Finance and Economics*, 11, 5–36.

Keogh, G. (2006). Use and investment markets in British real estate. *Journal of Property Valuation and Investment, 12(4), pp 58-72*

King P. (2009). *Understanding Housing Finance*: *Meeting Needs and Making Choices (2nd ed.).* New York: Routledge

Kolbe, P.T., Greer, G.E. & Rudner, H.G. (2003). *Real Estate Finance*. Chicago: Dearborn Real Estate.

Kuria, D., Gachari, M., Odera, P. & Mvuria, R. (2013). Securing bank loans and mortgages using real estate information aided by geospatial technologies. *International transaction journal of Engineering, Management, & Applied Sciences & Technologies:*.

Lorimer, J. (2008). *The Developers*. James Lorimer & Company

Macharia, E.W. (2013). The effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. *International Journal of social sciences and entrepreneurship, Vol. 1, Issue 2, 2013, 1 (2), 688-701.*

Messah, O.B. (2011). Factors influencing real estate property prices; A survey of real estates in Meru municipality, Kenya. *Journal of economics and sustainable development. Vol. 2, No. 4.*

Miles, M.E., Berens, G. and Weiss, M. A. (2000*), Real Estate Development: Principles and Process (3rd ed).* Urban Land Institute Washington DC

Mitra, B. C. (2003). Land supply for low income housing in Delhi.

Monsod, T. C. (2011). Is government really solving the problem? *Discussion paper No. 2011-04. University of Philippines, School of Economics.*

Mortgage Bankers Association of America. (2002). *Principles of Commercial Real Estate*: Finance. Dearborn Real Estate

Noppen, V. A. (2012). The ABC's of affordable housing in Kenya. *The acumen fund*.

Ojetunde, I., Popoola, N.I. & Kemiki, O.A. (2011). On the interaction between the Nigerian residential property market and the macro economy. *Journal of Geography, Environment and Planning, 7(2*), University of Adoekiti, Nigeria.

Okonkwo, O. (1997). Accessing off-shore sources and capital markets for housing finance in Africa: Strategies, Difficulties and benefits. *Workshop on maintaining sustainable mortgage finance scheme in Africa held in Ghana.* Publication Number 60.

Pugh, C. (1997). The changing roles of self-help in housing and urban policies, 1950–1996*: Experience in developing countries. Third World Planning Review,* 19(1), 91–109.

Singh, H. (2006). Housing land markets in Ludhiana city: *A study of their structure, conduct*

Sirota, D. (2003). *Essentials of Real Estate Finance*. Dearborn Real Estate.

Smets, P. (2000*).* ROSCAs as a source of finance for the urban poor: *An analysis of the self-help practices from Hyderabad, India. Community development journal* 35, 16-32.

Smith, W. (2000). The impact of the transition from informal housing to formalized housing in low-income housing projects in South Africa. *Paper from Nordic Africa Institute Conference on the Formal and the Informal City, Copenhagen*.

Stiglitz, J. (2006). The role of the state in financial markets. In: *Proceedings of the world bank conference on development economics. Washington DC: World bank*, 19-52.

Thisse, J. F. & Henderson, V. (2004). *Handbook of regional and urban economics*: Cities and geography (Malpezzi, S.). Elsevier.

Tirtiroglo, S. (1997). “Bank Lending and Property Prices in Hong Kong,” *Journal of Banking and Finance*, 29.

Tomlinson, Mary R. (2007). “A Literature Review on Housing Finance Development in Sub Saharan Countries”. Report published on May 2007. Commissioned by FinMark Trust.

Turkstra, J. (1998). *Urban development and geographical information*. Netherlands: ITC

Ubale, M. Y., Martin, D. & Wee, S.T. (2013). Examining and suggesting remedy to the effects of urban informal sector in urban residential property market in Bauchi Nigeria. *International journal of physical and human Geography*. Vol. 1, No. 2, pp 31-46.

UN-Habitat. (2011). The Impact of the Global Financial Crisis on Housing Finance.

United Nations Human Settlement Programme (UN-Habitat). 2005. *Financing Urban Shelter: Global report on human settlements.*

United Nations Human Settlement Programme (UN-Habitat). 2006. *Annual Report*.

APPENDICES

Appendix I: Annual Number of House Units

	2008	2009	2010	2011	2012
1	2453	2590	2856	3151	3759
2	2337	2467	2721	3002	3582
3	1900	2006	2212	2441	2912
4	2433	2568	2833	3125	3729
5	1543	1629	1796	1982	2365
6	1600	1689	1863	2055	2452
7	1756	1854	2044	2256	2691
8	2109	2226	2455	2709	3232
9	2500	2639	2911	3212	3832
10	1628	1719	1895	2091	2495
11	1700	1795	1979	2184	2605
12	1457	1538	1696	1872	2233
13	1306	1379	1520	1678	2002
14	2300	2428	2678	2955	3525
15	1541	1627	1794	1980	2362
16	2301	2429	2679	2956	3527
17	1900	2006	2212	2441	2912
18	1720	1816	2002	2210	2636
19	1542	1628	1795	1981	2363
20	2403	2537	2798	3087	3683
21	2217	2340	2581	2848	3398
22	2431	2566	2830	3123	3726
23	2800	2956	3260	3597	4291
24	3100	3273	3609	3982	4751
25	3548	3746	4131	4558	5438
Total House Units	**52525**	**55450**	**61150**	**67475**	**80500**

Appendix II: Annual Number of House Loans

	2008	2009	2010	2011	2012
1	4.8	5.67	4.88	4.94	5.03
2	5.2	4.9	5.29	5.36	5.45
3	5.6	5.4	5.70	5.77	5.87
4	4.5	6.3	4.58	4.63	4.71
5	6.3	6.11	6.41	6.49	6.60
6	5.6	5.83	5.70	5.77	5.87
7	5.8	5.7	5.90	5.97	6.07
8	5.95	6.25	6.05	6.13	6.23
9	6.16	5.69	6.27	6.34	6.45
10	6.25	6.5	6.36	6.44	6.55
11	5.67	7.11	5.77	5.84	5.94
12	4.9	5.7	4.99	5.05	5.13
13	5.4	142.5	5.49	5.56	5.66
14	6.3	4.8	6.41	6.49	6.60
15	6.11	5.2	6.22	6.29	6.40
16	5.83	5.6	5.93	6.00	6.11
17	5.7	4.5	5.80	5.87	5.97
18	5.2	6.3	5.29	5.36	5.45
19	4.7	5.6	4.78	4.84	4.92
20	5.3	5.13	5.39	5.46	5.55
21	6.8	5.95	6.92	7.00	7.12
22	6.5	6.16	6.61	6.69	6.81
23	7.11	5.2	7.23	7.32	7.45
24	5.13	4.7	5.22	5.28	5.37
25	5.69	5.3	5.79	5.86	5.96
Total cost (billions)	**142.5**	**142.5**	**145**	**146.75**	**149.25**