THE RELATIONSHIP BETWEEN HOUSE PRICES AND REAL ESTATE FINANCING IN KENYA

BY

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DECLARATION

This research project is my original work and has not been submitted for a degree in any other university
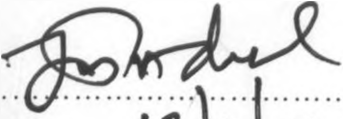
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DEDICATION

To my dear wife Joyce Ndeda my family Mr. Joseph Jumbale and Mrs. Leah Kahonzi my brothers Ronald ,Charles ,William ,my sisters Hilda, Claris ,Hellen,Gladys and Mercy I thank you all for this opportunity, God bless you.

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To Almighty God be the glory and honor, for the grace and mercies during the entire period of study. I thank you Lord for gift of life and the good health that you provided me during the period of my study.

I would like to extend my appreciation and gratitude to all those that contributed tremendous inputs towards completion of this research project

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ABSTRACT

In many countries, house price fluctuations which have been witnessed by the several booms and busts over the past two decades have been associated with financial instability. The degree to which such house price booms and busts have led to financial instability differs among countries because of the important differences in countries' housing systems and the role that the government plays. The recent financial crisis has led to accelerated housing defaults in the U.S as well as in other countries, with millions of residential properties having negative equity mortgages with the outstanding loan balances being greater than the property value. Property prices in the Kenyan market have not been spared by the crisis being experienced. The Hass property index has been tracking property prices in the 'upper and middle' sectors of the Kenyan property market and has seen the average price in this sector rise from Ksh 15 million in 2006 to Ksh 20 million in 2010. The objective of the study was to determine the relationship between house prices and real estate financing in Kenya.

Causal study design was employed in this research. Purposive sampling technique was used to select the sample. The study purposively selected a total of 20 respondents who formed the sample size of this study. The researcher administered a survey questionnaire to each member of the target population. Secondary data was collected for this study. Quantitative data collected was analyzed by the use of descriptive statistics using SPSS latest version (20.0).Regression analysis was done to establish the relationship between growth in Real Estate financing and house prices.

The study found that the changes in housing prices are positively and significantly related to the long-term evolution of real estate financing. This result suggests that the evolution of housing prices is not triggered by bank real estate lending and that banks just accommodate real estate financing to the evolution of house prices. Though the study shows a bi-directional causality it concludes that the real estate market does not really affect housing price changes rather changes in housing prices do affect the amount of real estate financing.

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LIST OF ABBREVIATION

3SLS	Three Stage Least Squares
CBK	Central Bank of Kenya
GDP	Gross Domestic Product
GOK	Government of Kenya
MM	Modigliani-Miller
NSE	Nairobi Stock Exchange
PLR	Property Lending Rates
SPSS	Statistical Package for Social Science
U.S	United States

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In many countries, house price fluctuations which have been witnessed by the several booms and busts over the past two decades have been associated with financial instability. The degree to which such house price booms and busts have led to financial instability differs between countries because of the important differences in countries' housing systems and the role that the government plays. The recent financial crisis has led to accelerated housing defaults in the U.S as well as in other countries, with millions of residential properties having negative equity mortgages with the outstanding loan balances being greater than the property value (Burnside *et al*, 2011)

Property prices in the Kenyan market have not been spared by the crisis being experienced. The Hass property index has been tracking property prices in the 'upper and middle' sectors of the Kenyan property market and has seen the average price in this sector rise from Ksh 15 million in 2006 to Ksh 20 million in 2010. This has led to a compound annual growth rate of 7.5%. The average value of a property has increased from Ksh 6.83 million in 2001 to over Ksh 19 million in 2010. This is a tripling in value and an annual average compound growth rate of around 12.5%. Neither of the issues facing the Kenyan economy like political instability seems to have had a significant impact on the real estate market. The consistent growth can partly be explained by the lack of supply in housing which helps keep prices rising and the growing access to credit (Hass Consult, 2010)

Housing price represents the major investment required for one to own a house. It is the cost of owning a real estate which encompasses land along with improvements to the land such as buildings. Customers in the housing market enjoy the services by either renting or owning a house which can be classified as a highly durable consumer good as well as an investment. This implies that home ownership is preferable due to the smooth consumption of housing services as compared to the price risk of rental services. Studies show that 32 percent of household wealth is invested in the form of primary residences. However, the fraction of

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households wealth held as houses varies significantly between the poor and the rich. Most home owners finance their purchases by putting a down payment requirement with a mortgage financier and the house equity serves as collateral for a loan (Diaz and Luengo-Prado 2002).

Overall mortgage lending by banks for real estate purposes represents the major type of lending at present in Kenya. This includes lending for commercial property and other real estate linked activities, as well as lending to private households. The boom in lending however does point towards a readjustment in lending. The fall in lending for building and construction also suggests that the real estate lending is more to purchase land for speculative purposes than for engaging in new construction. Given the rapid rate of growth in real estate prices, this should be a major reason why many Kenyans are opening up to mortgage credit (World Bank, 2011). The general performance of the housing markets in these economies seems to have greatly contributed to the different reactions. Institutional set-ups in housing and mortgage markets play an important role not just for overall economic efficiency and real incomes but also for the propagation of shocks and the ability of monetary policy to respond effectively to them (Catte, Girouard, Price and Andre, 2004)

Real estate lending has been closely correlated with property prices in both developed and developing economies in the past decades. From a theoretical perspective, there exists potentially a two-way causality between bank lending and property prices. On the one hand, property prices may influence both demand and the availability of bank credit via various wealth effects. This is mainly related to the role of asymmetric information in credit markets which gives rise to moral hazard or adverse selection problems. Property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans (Bernanke and Gertler, 1989).

1.1.1 Real Estate Financing

Real estate investment involves the commitment of funds to property with an aim to generate income through rental or lease and to achieve capital appreciation. Real estate refers to

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immovable property, such as land, and everything else that is permanently attached to it, such as buildings. When a person acquires real estate, s/he also acquires a set of rights, including possession, control and transfer rights. Understanding real estate investment is crucial because it usually involves a substantial investment and a long-term one. Moreover, the real estate market can be unpredictable. This is particularly important when one goes beyond buying a home to actually 'investing' in real estate. There are a number of ways in which an investor can participate in the real estate market (Dubois and Anderson, 2010).

Investment generally entails the commitment of a lump sum now for future streams of income flow and/or for capital appreciation. Puts in a different context, it is an acquisition of an asset by an individual or institution with a view to earning returns, either through its income or capital gains. In investment market, investors are generally faced with numerous alternative investments where fund could be ejected. These include stocks and shares, bonds, unit trusts, bank deposit and landed property. This diversity eventually creates the problem of choice, which according to Hargitay and Yu (1993) is one of the fundamental problems of investment decision-making. This requires investors to choose from myriad of opportunities that differs not only in the amount of required initial capital outlay, but also in the timing and amount of expected future flows and the degree of confidence that can be placed in the expectations. The choices are expected to take into consideration the characteristics of the various assets and the linkages among them (Hoesli and MacGregor, 2000) since investment funds will only flow to the sectors that promise the most attractive return in the light of expected risks and returns trade off.

The implication of the foregoing is that investors usually have to reckon with the problem of choice, which requires the establishment of criteria and rational basis for assessing the desirability or otherwise of the acquisition of an individual investment proposition. Success, in this regard, is most dependent upon finding strategically appropriate investment opportunities and being able to accurately forecast their past performance (Faragher and Klieman, 1999). Such forecasting must also consider the performance of the investment media relatives to other similar assets and to different types of investment assets (Hargitay and Yu, 1993).

Property is not only an investment asset, but an asset that has clearly established itself as a strategic role player in the multi-asset portfolio due to its effectiveness as a diversifier of risk in a mixed asset portfolio. Empirical studies have also suggested that one of the principal reasons investors favour property investment relative to other investment media has been attributed to the superior investment performance (Coyne *et al.*, 1980). Property investment decisions, based on the foregoing, were majorly an acquisition of direct investment in real property through private market that consists of buildings owned and managed by investors or their agents. But, with the development of the new financing arrangements for real estate in the capital markets, investors now have the opportunity to include property in a diversified portfolio by acquiring a security backed by direct real estate investment through public markets.

In an efficient capital market, there is no gain from switching between equity and debt and neither is there any benefit in timing securities issues (Modigliani and Miller, 1958). The efficiency of the capital market, however, has been questioned and more researchers are nowadays willing to explore the implication of market inefficiencies on corporate financial policy (Fama and French, 1993). In particular, the presence of inefficiencies in the market, the debt-equity choice and security issues may have important implications on shareholders wealth. Accordingly, proponents of the market-timing theory contend that firm's time and choose the type of securities to issue according to their relative costs. Stein's (1996) proposes that a rational manager should take advantage of investor exuberance by issuing more shares when the firm's stock price is too high.

1.2 Statement of the Problem

Housing booms and busts have been associated with financial stress. The recent experiences in several countries are examples of unsustainable housing booms that have turned into busts, causing output losses and banking crises. Given that housing busts weaken household and financial sector balance sheets, housing-linked recessions are more severe (Claessens, Kose, and Terrones 2008). The dramatic increase in mortgage credit has been blamed for the housing crisis. However, the relationship between the two remains largely unexplained. This paper analyses the relationship between housing prices and mortgage credit in Kenya, to

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determine whether mortgage lending has led to the booms and busts. An examination of the long and short-term relationship between house prices and real estate lending on the Hong Kong Housing market, showed that the increases in house prices were positively and significantly related to growth in long-term real estate financing but was not found to significantly affect house prices (Gerlach and Peng, 2005). Recent evidence shows that real estate financing has had no impact on house prices and the correlation between housing prices and real estate financing though observed in most countries (Coleman et al., 2009).

Studies done in Kenya on real estate include, Karanja (2002) did a study on competitive strategies of real estate firms, the perspective of porter's generic model, Gitonga (2003) did a study on the performance of real estate markets, the case of central business district of Nairobi, Kinyanjui (2004) risk & returns of real estate hold in pension funds investment portfolios in Kenya and Kariuki (2006) an assessment of the viability of real estate excunilization in Kenya. This study sought to fill the existing research by conducting a study to determine the relationship between house prices and real estate financing in Kenya

1.3 Objectives of the Study

The objective of the study was to determine the relationship between house prices and real estate financing in Kenya

1.4 Significance of the Study

The findings of this study will be useful to different groups of the Kenyan population as explained below. Property developer will benefit from the study by learning how property prices react to the real estate financing variables like interest rates. Developer will benefit from such information when making their real estate investment decisions.

Real estate financing firms can use this study to improve on their policies in regard to how much financing to advance to borrowers depending on their property valuations used as collateral. This study will also assist the firms in coming up with strategies on how to react to house price fluctuations.

This study will help the regulators to understand the effects of house price fluctuations and come up with appropriate policies to regulate the housing markets hedging the economy against the ever rising prices. The government should normalize the functioning of the mortgage market by taking action to return mortgage rates to what they would otherwise be if the mortgage market were functioning normally.

The study will be useful to academicians and scholars as it will lay foundation for further studies on real estate financing and house prices and how it contributes to the overall growth of the country. The academicians being charged with the responsibility of dissemination of knowledge to various stakeholders will find the study useful.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter brings up relevant literature required to find answers and connect to our research objective. First, a review of theories that guide this study will be presented to give the research a firm theoretical base. Then, empirical studies done on this research topic will be looked at which will make it easier to understand the research area.

2.2 Theoretical Review

2.2.1 Title Theory and Lien Theory of Mortgages

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

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

complete. The language of the mortgage provides for possession rights being in the mortgagor up to the time of the foreclosure.

2.2.2 Innovation Theory of Mortgage Financing

Innovations are often adopted by organizations through two types of innovation-decisions: collective innovation decisions and authority innovation decisions. The collection-innovation decision occurs when the adoption of an innovation has been made by a consensus among the members of an organization. The authority-innovation decision occurs when the adoption of an innovation has been made by very few individuals with high positions of power within an organization (Rogers, 2005). Unlike the optional innovation decision process, these innovation-decision processes only occur within an organization or hierarchical group. Within the innovation decision process in an organization there are certain individuals termed "champions" who stand behind an innovation and break through any opposition that the innovation may have caused. The champion within the diffusion of innovation theory plays a very similar role as to the champion used within the efficiency business model Six Sigma. The innovation process within an organization contains five stages that are slightly similar to the innovation-decision process that individuals undertake. These stages are: agenda-setting, matching, redefining/restructuring, clarifying, routinizing. There are both positive and negative outcomes when an individual or organization chooses to adopt a particular innovation. Rogers states that this is an area that needs further research because of the biased positive attitude that is associated with the adoption of a new innovation (Rogers, 2005). In the Diffusion of Innovation, Rogers lists three categories for consequences: desirable versus undesirable, direct versus. indirect, and anticipated versus unanticipated.

Innovators and early adopters make up only a small proportion of any population (2.5% are innovators and early adopters about 13%) and there are not enough of them to have an impact on embedding innovation in an organization. The early and late majority (called the mainstream adopters) makes up 64 % of any population and these are the ones who can make the difference to whether an innovative practice is embedded in an organization. The early majority are more practical: they do think through the pros and cons of a new idea before they adopt, so they help to make it more tangible and acceptable. But if the support systems

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and infrastructure aren't there, they'll hold back on a commitment (Daphni and Ferguson, 2004).

2.2.3 Gordon Growth Model theory

The Gordon growth model brings out the theoretical framework that links house prices to interest rates. Movements in the primary conventional mortgage rate are highly correlated with movements in other long-term interest rates. The model defines a one-period return to housing and implies that the ratio of housing rents to house prices, "rent-price ratio" must be equal to the present discounted value of expected future housing service flows and expected future returns to housing assets. The standard Gordon Growth Model states that Asset price = Dividend / (interest rate – Dividend growth rate). For the housing market, the model would be interpreted as House price = Rent / (Interest rate – Rental growth rate). This model shows a convex relationship between house prices and interest rates as well as mortgage rates. The lower the level of the mortgage rate, the greater is the elasticity of house prices to changes in mortgage rates and the greater the level of mortgage debt outstanding.. A more accurate version of the Gordon Growth Model as applied to housing requires further adjustments for factors like risk, taxes, depreciation, and mortgage rates (Gordon, 1962)

The expected future returns to housing assets can further be split into the sum of expected future risk-free rates of rental income and expected future premium paid to housing over the real risk-free rate. This model is known in the finance literature as the dynamic version of the Gordon growth model. The approach is equivalent to assuming that house prices are the discounted sum of housing rents, where the growth rate of housing rents and required return to housing can vary over time. It is precisely this variation over time in expected required returns and expected growth rate of housing rents that yields changes in relative house prices, enabling us to study the factors responsible for time-series changes to housing valuations (Campbell and Shiller 1988a, 1988b).

2.2.4 User Cost Model
When analyzing the determinants of tenure choice, each of these considerations has to be taken into account. Renters purchase housing services in the market and the cost they incur is the rental price of housing. For homeowners, the cost of using and owning one unit of

housing in a given period is known as the user cost, defined in a similar way to the user cost of capital from the Neoclassical theory of investment. The user cost is made up of the opportunity cost (forgone after-tax return of housing equity on alternative assets), out-of-pocket expenses (mortgage interest payments, maintenance costs, local housing taxes, etc.) and value variation (depreciation and capital losses associated to house price fluctuations). When the user cost of owner occupied housing is lower than the rental price of housing services, households would prefer to purchase houses instead of renting and wealth (liquidity) constraints are likely to be the main deterrence from home ownership (Rosen, 1979).

The user cost model can help explain how differences in expected appreciation rates of house prices across different metropolitan areas can make house prices more sensitive to changes in mortgage rates. A simple regression of the log (price-rent ratio) on the log (inverse of the user cost) suggests that variation in the after-tax real interest rate is an important component of explaining the price-rent ratios across metropolitan areas. Thus house prices in the recent boom appear to be particularly sensitive to changes in the after-tax cost of owning a home. Increases in house prices are accompanied by increases in mortgage debt levels suggesting that house prices reflect changes in the user costs to an appreciable degree (Mayer and Sinai, 2007).

2.2.5 Efficient Market Hypothesis

In his seminal article, Fama (1970) defined an efficient market as one in which market prices fully and instantaneously reflect all relevant information. Under the condition that new information arrives randomly in the housing market, the current price of a housing asset is an unbiased predictor of its future value. Numerous studies have tested the efficient market hypothesis in various housing markets in the United States and other countries. The consensus in this literature is that both house prices and excess returns exhibit systematic short-run and long-run serial positive correlations indicating the fact that the housing market is not informational efficient.

Housing assets are both consumption goods and investment assets. In mainstream analysis, rational agents operating in a risk-free world of perfect information and reversible decisions, respond to the factors affecting their housing investment / consumption decisions in a methodical way. The consumption component of a house purchase is a function of the discounted stream of imputed rents, reflecting not only future consumption plans but also the fact that housing assets are used as a hedge against future rent rises. The investment component will be affected by expectations of capital gains and losses in housing assets resulting to either increased mortgage borrowing if gains are expected and decreased mortgage borrowing if capital losses are expected (Pain and Westaway, 1997).

Adapting a Modigliani-Miller (MM) assumption of financing neutrality, i.e. by assuming that the type of financing used for an asset purchase does not affect its value, this model is completed because, in an MM world, financing vehicles and constraints will not affect decision-making when capital markets are perfect. However, this baseline model will be distorted by political and institutional change and by housing market complexities. In conventional analyses of housing demand assuming a risk-free world of complete information, and homogenous / rational agents, the user cost of housing is identified as a key variable determining individuals' decisions to own housing assets. User cost is a simple measure of the relative cost of housing assets, expressed in terms of real interest rates, imputed rents and capital appreciation (or depreciation). However, in a world of uncertainty and institutional change, the influence of the user cost of housing on decisions will be overwhelmed by other factors, generating destabilizing and volatile patterns in housing demand. Inefficiency and instability in housing markets can be understood in terms of the violations of the assumptions of perfect housing markets. Given uncertainty, financing constraints and irreversibility of decisions housing market will be characterized by volatility at a microeconomic level. This instability will be transmitted to the macro-economy as buyers, sellers, lenders and borrowers interact, and affect each others decisions regarding housing investment. Individuals do not behave independently with their housing (and mortgage) choices and are affected by social forces, conventions and herding tendencies, thus depreciation expectations in house prices will lead to a decline in mortgage debt as borrowers require less financing for the lowly priced houses (Baddeley, 2005)

2.3 Empirical Review

According to a study by Goldman Sachs in the Global Economics Weekly (2007), house prices boomed in many parts of the world between 1997 and 2007. The study analyzed house prices in different countries including the United States, European countries such as Britain, France, Ireland, and Spain, Germany, Japan, Australia, South Korea and China. The study showed that a rise in real house prices was accompanied by a secular decline in real estate rates in the early 2000s. As real mortgage rates dropped more quickly in 2002, house prices demonstrated a commensurate rise. House prices in the various European countries continued growing after 2005 even as real mortgage rates began rising. Many blamed mortgage market excesses such as the growth of subprime lending for the sharp increase in United States house prices in the 2000s as well as the sudden decline in house prices after 2007.

The extreme use of leverage at household level (sub prime loans) and mortgage-backed securities in the United States housing market may have led to a more sudden collapse in mortgage lending in the United States relative to much of Europe. Data from Australia, South Korea, and China show how house prices grew rapidly when interest rates fell in 2002 and 2003.German and Japanese real mortgage rates fell with much of the rest of the world. However, local economic conditions played a crucial role in holding down house price appreciation. In Germany, the strong construction boom after the reunification of the two German states combined with slow population growth, led the country to have an oversupply of housing. More relevant to today's conditions, Japan was in the middle of a more than decade-long economic slump. Even with low interest and mortgage rates, over-leveraged banks and underwater mortgages for many consumers led the country's housing market to be in a constant state of decline (Mayer, Pence, and Sherlund 2008).

According to Case and Shiller (2008), the meltdown in mortgage markets has substantially raised mortgages rates relative to their historical relationship to interest rates. They conducted a study analyzing the role of credit markets in mortgage prices and thus in house prices in the United States housing market. The study showed that the spread between the interest rate on the average 30-year conforming mortgage and the 10-year Treasury bond had widened enormously in the last few years. In fact, while the yield on the 10-year Treasury

bond had fallen by nearly 1.5 percent in the past 2 years, the average rate on a conforming mortgage had fallen by about 0.5 percent. Problems in the entire economy combined with the broader credit crunch were responsible for the increase in the spread between mortgage rates and Treasury securities. Nonetheless, the increase in mortgage spreads has had catastrophic consequences for housing affordability and has driven house prices down well below what their fundamental value would be with a normally functioning mortgage market. As a result of higher mortgage spreads, the imputed rent-to-rent ratio increased by about 10 to 17 percent, with the in the markets that were most sensitive to changes in interest rates. It also leads to a drop in demand associated with higher mortgage rates that pushed house prices down. Their calculations showed that house prices were expected to fall another 4 to 15 percent to reach their new fundamental level with higher mortgage spreads.

Gyourko et al. (2006) conducted a study of the overall price of housing in the cyclical markets (superstar cities) in the US. While previous empirical evidence suggested that real house prices in "superstar cities" grew at a real rate of about 2 percent above the national average, real house prices in other metropolitan areas were more closely related to the construction costs. Their study showed that for the cyclical cities, real house prices were about 10 to 20 percent above their 21-year average. This suggested that house prices were about where they should be given that the underlying reasons for the long-term real growth of house prices in these superstar cities still persisted, including limited supply and growing demand due to income growth. With real interest rates much lower then than they were in the previous years suggested that house prices were actually a bit cheap in some of these markets--or at least would be cheap if mortgage spreads were at historic levels. In the steady markets, house prices had fallen most of the way to their previous levels, although Chicago and Denver exhibit a slight upward trend in real house prices. Given that these two markets had experienced demand growth and had some constraints on building, house prices were bound to rise with time. Real construction and materials costs had also gone up over this time period, so some real appreciation of house prices was warranted.

Gerlach and Peng (2003) examined the long and short-term relationship between housing prices and mortgage credit on the basis of approximation of the co-integration relations

between both aggregates. With an application to the Hong Kong housing market, their results showed that the increases in housing prices are positively and significantly related to growth in long-term mortgage loans but credit is not found to significantly affect housing prices. Bank lending was closely correlated with property prices in that property prices influenced both demand and the availability of bank credit via various wealth effects. This was mainly related to the role of asymmetric information in credit markets which gave rise to moral hazard or adverse selection problems. The borrowing capacity and credit demand of households and firms are affected by changes in prices of properties, which are often used as collateral for bank lending. Furthermore, property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans. The latter may rise as falling property prices affect the solvency and, potentially, the willingness to repay of households and corporate borrowers. On the other hand, credit conditions may also affect asset valuations, as increases in credit availability may expand the demand for a (temporarily) fixed supply of properties. They also find that the direction of causation goes from housing prices to private sector debt both in the long run and in the short run.

In a study by Hofmann (2003) on the interaction between housing prices and credit has recently finds that changes in property prices affect private sector borrowing in the long run when analyzing a panel comprising quarterly data for 20 countries (Norway included) covering the period 1985-2001. He also reports that results for the short run adjustment, where he finds that the causality goes in both directions. The long run results are further corroborated in Hofmann (2004) where separate regressions in real credit to the private sector, gross domestic product (GDP) (as a broad measure of economic activity) and the short-term real interest rate as a measure of financing costs are first studied for each country. When extending the analysis to include real property prices in the regression, Hofmann finds strong support for one co-integrating vector for all countries, which (through the significance of the loadings) can be interpreted as determining credit in the long run for those countries where a high share of loans are secured by real estate.

These results are supported by Brissimis and Vlassopoulos (2009) in a single country study for Greece, for quarterly data specific to the housing market covering the period 1993-2005. Using multivariate co-integration techniques they find, based on a co-integrated relationship identified as a mortgage loan equation, that housing prices do not adjust to disequilibria in the market for housing loans. Hence, in a long run perspective the causation does not run from mortgage lending to housing prices. In the short run they find evidence of a contemporaneous bi-directional dependence.

Fitzpatrick and McQuinn (2007) look at the interaction between housing prices and mortgage credit in Ireland between 1981 and 1999. They analyzed co-integration within a single equation framework by adopting the Engle-Granger approach (Engle and Granger, 1987). A uni-equational approach is used to specify the error correction models for housing prices and debt before estimating them jointly by three stage least squares (3SLS). They show that the two variables are mutually dependent in the long run, as well as in the short run and the interaction is found to go in both directions.

Oikarinen (2009) uses quarterly data for Finland (the sample is 1975 to 2006) to explore the mutual dependence between housing prices and borrowing. A Johansen analysis supports the existence of only one co-integrating vector and the direction of causation is found to be from household borrowing to housing prices in the long run. An impulse response analysis shows that the interaction between housing prices and credit grew to become important only after 1987, i.e. after the Finnish credit market was considered fully deregulated. A multivariate co-integration analysis shows that the two variables are interdependent in the long run, i.e. that housing prices affect mortgage credit in the long run, and vice versa. Further, the loading factors imply that disequilibrium in the credit market leads to adjustments in both markets, while only housing prices error correct to disequilibrium constellations in the housing market. They do not report results on the short run dynamics, and they are therefore not able to study the dynamics of the system.

According to a study on housing demand in Kenya by Mbogua and Nganga (1973) and Chana (1984), the projected housing demand during the period 1986-2001 indicated that

about 348,000 housing units were needed to meet housing demand. This meant an annual rate of 23,000 housing units. However, during the period between 1992-1997 for example, annual housing production from both the public and private sector averaged 1142 houses per year (GOK, 1992- 1997). To meet their own housing needs in the face of unaffordable house prices and rents, most urban residents in Kenya are opting to develop their own housing by mortgage credit due to the an unstable housing market existing which is characterized by high property prices. Many homeowners are opting for loans in order to purchase houses before the prices increase to unaffordable levels.

Real estate finance can be looked at, as the fund needed to Cary out real estate development and other related operations. It is an essential ingredient in modern day real estate development and most large-scale development would not take their present scale without substantial credit. The housing finance system in Kenya is not viable and this makes mobilization of finance and credit for housing development difficult. Finance constitutes a fundamental centerpiece in any real estate development; the ability of a developer to mobilize enough funds for the project determines largely, the success of the project. Finance is an all-important factor, a sinequanon and very crucial ingredients to projects, no matter their nature. It is basically the fulcrum, which sustains the lever for development projects.

The performance of any housing finance system will depend primarily on the volume and nature of funds within the economy and the proportion of it that can be spread, mobilized or even dedicated for housing. Real estate finance can be viewed as the borrowing of money to carry out real estate development. Private equity financing is restricted by the financial capacity of shareholders, and public equity financing is controlled by strict regulations and policies. So firms, including developers, often depend on debt financing. Over the years, researchers have proposed numerous theories to explain firms' debt financing. In the early literature, Robicheck and Myers (1966), and Karus and Litzenberger (1973) have established the tradeoff theory that borrowings will increase the firm's value. When the debts increase, the firm's distress cost will increase too, which reduces the firm's value and produces the optimal capital structure. In a market-oriented legal system has only been developed over the

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past two decades and is still relatively weak or incomplete in many aspects, and the enforcement of laws is often ineffective.

The financing option refers to the developers' option to finance projects through landowners, banks, contractors, buyers, and so on. There is little literature on developer's financing option; the financing option may be unique to developers because of their unique operating environment. Take the presale approach as an example. Shih (1992), Chang and Ward (1993), and Chang (1994) treat a presale as a forward or futures contract. Lai *et al.* (2004) argued that a presale arrangement is of benefit to a developer in that it reduces marketing costs, inventory costs and uncertainty about future demand. All these authors ignore the financing function of a presale arrangement.

Debt financing may lead to the financial distress of the firm, thus causing the firms' default on debts and abandonment of buildings. In this paper, the abandonment option refers to the developers' option to mothball or scrap the projects, and to default on and escape from the contractual debts. Real estate projects are usually highly leveraged. When a highly leveraged real estate project experiences cash-flow problem, the developer must either inject additional cash or default on the debt (Oikarinen, 2009). The developer may leave the project abandoned and unfinished in cases where: the developer's cash flow is constrained and outside financing is impossible; the developer, who has invested a small proportion of his wealth in the project, may find that he is not in a position to make the required cash injections; the developer cannot sell some portion of the equity in the project to outside investors in return for cash, or it is costly for the developer to sell the project to cash out equity; there is little probability that the lender will reduce their debt claim or take equity in exchange for debt forgiveness; abandonment or default costs are low; and the projected future income to the developer, or the value of the project, falls below a level the developer considers adequate (Higgins, 1997).

Because developers are often highly leveraged, abandoning a building is closely related to default on debts. Some scholars have studied the incentives for borrowers to default on loans. In the early literature, Jensen and Meckling (1976), Myers (1977), and Gertner and Scharfstein (1991) have established that loan contracts create incentives for borrowers to

behave in ways contrary to the interests of the lenders, and the borrowers may have the incentive to extract as much cash flow from the underlying property as possible. While these principles apply to any borrowing relationship where the borrower's future actions influence the market value of the underlying collateral, they are especially relevant in real estate lending because of the combination of high loan-to-value ratios, substantial borrower discretion over the use of cash flows from the property during the term of the loan, and high foreclosure costs.

Studies specific to Kenya suggest that Kenya's outdated 1968 Building Code that is currently in operation does not allow the inclusion of newer construction technology that is instrumental to the provision of low cost buildings. The building code requires contractors to adhere to what is now costly and time consuming building measures that are not in use in developed countries. This raises the cost of construction as well as house prices as developers try to maintain their profit taking opportunities. Therefore, for Kenyans to be able to afford the highly priced houses they need more financing from the mortgage lenders which in return increases the outstanding debt (Macoloo, 1994).

A study on property prices in Kenya shows that the growth in prices for apartments which are priced at a lower level than houses have seen rapid growth in the last 2 or 3 years. Over the 10 year period, the average growth rate for apartments has been just 7.8% but between 2008 and 2010 prices have almost double for smaller apartments. During the same period, the mortgage debt outstanding has more than tripled as households borrowing capacity increases with increase in house valuations. Households are using their homes as collateral to access more financing for further investments in the real estate market (Hass Consult, 2010)

A survey on mortgage lenders showed that an increase in property prices led to an increase in mortgage lending as more and more people borrow to purchase properties for speculative purposes. In Kenya, the strong property rights, the ability to use land and property as collateral is the basis for a strong collateral lending system. Being able to provide collateral can be the basis for a loan to purchase houses or land to anticipate income inflows form the price appreciations. The increases in both mortgage credit and house prices have had an

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accelerator effect on the whole economy by increasing household spending /consumption capabilities. (World Bank, 2009)

2.4 Summary of literature review

Creative and innovative real estate financing is a topic which has attracted much attention in the academic and practice real estate literature. The research conducted in this field mainly deals with single instruments such as convertible mortgages (Tung, 1990); participating mortgages. Basic real estate finance literature covers different instruments (Higgins, 1997). Housing prices have been the main focal point of economic and social debate in recent times in many developed countries. The rise in housing prices in the Kenyan case has been has been one of the most striking issues in the economy. There are many factors affecting housing prices, although the influence of any of these factors and the possible interactions between them require a long-term analysis of these influences over time. Amongst these factors, and with the advent of the financial crisis, the relationship between real estate financing and prices has concentrated a big deal of attention in this context.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed in completing the study. It involved a blueprint for the collection, measurement and analysis of data. Specifically the following subsections were included; research design, target population, data collection instruments, data collection procedures and finally data analysis.

3.2 Research Design

The causal study design was employed in this research. Causal research aims to suggest causal linkages between variables by observing existing phenomena and then searching back through available data in order to try to identify plausible causal relationships. It was concerned with determining cause and effect relationship and to understand which variable is dependent and which is independent (Ross, 2005). This research design was the best in explaining if two variables are related and if they vary together with the help of enough information or data for testing cause and effect relationship. It aims to explore the relationship between house prices and real estate financing in Kenya and the empirical evidences that help answer the research objective. Along with house prices, this empirical exercise attempts to approximate the relationship between mortgage financing and the actual market valuation of houses which is approximated through the relationship between the asset price and the rental revenues as a house price-rents ratio (P/R). The study aimed at establishing the relationship between house prices and real estate financing in Kenya and the empirical evidences that helped answer the research objective.

3.3 Target Population

According to Ngechu (2004) a study population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. Thus the population should fit a certain specification, which the researcher will be studying and the population should be homogenous. Keya (1989) states that individuals or things or

elements that fit a researcher specification. The population can be divided into sets, population or strata and which are mutually exclusive.

The target population composed of Commercial banks in Kenya (appendix II) involved in real estate financing. This population was chosen since the people in the management are the ones involved in the day to day running of the company and thus are well conversant with the relationship between house price and real estate financing. Mugenda and Mugenda, (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study. For purpose of this study the target population was stratified through top management level.

3.4 Sample Size

Ngechu (2004) underscores the importance of selecting a representative sample through making a sampling frame. From the population frame the required number of subjects, respondents, elements or firms was selected in order to make a sample. Purposive sampling technique was used to select the sample. The study was purposively select 20 commercial banks that are involved in Real Estate financing, from where 1 respondent was picked from each bank making a total of 44 respondents who formed the sample size of this study.

3.5 Data collection

According to Ngechu (2004) there are many methods of data collection. The choice of a tool and instrument depends mainly on the attributes of the subjects, research topic, problem question, objectives, design, expected data and results. This is because each tool and instrument collects specific data. Donald (2006) notes that there are two major sources of data used by respondents' primary and secondary data. Primary data is information gathered directly from respondents and for this study the researcher used questionnaires. The questionnaire was used to collect mainly quantitative data although some qualitative data was collected from the open ended questions. Secondary data involved the collection and analysis of published material and information from other sources such as annual reports, published data. Thus in this study the researcher was employ the use of survey questionnaire for data collection.

3.5.1 Data Collection Instrument

The researcher was administered a survey questionnaire to each member of the target population. The questionnaire was carefully designed and tested with a few members of the population for further improvements. This was done in order to enhance its validity and accuracy of data to be collected for the study.

Secondary data was collected for this study. This data was useful for generating additional information for the study from already documented data or available reports. Cooper and Schindler (2003) further explain that secondary data is a useful quantitative technique for evaluating historical or contemporary confidential or public records, reports, government documents and opinions. Mugenda and Mugenda (2003) add that, numerical records can also be considered a sub category of documents and those records include figures, reports and budgets. The study collected secondary data for the last six years starting year 2006 to 2011.

3.5.2 Data Collection Procedure

The researcher administered the questionnaire individually to all employees of the commercial banks in Kenya involved in Real estate financing who are the sample population. The researcher exercised care and control to ensure all questionnaires issued to the respondents are received and achieve this, the researcher maintained a register of questionnaires, which were sent, and which was received.

3.6 Pilot Test

According to Somekh, and Cathy (2005) validity is the degree by which the sample of test items represents the content the test is designed to measure. Content validity which is employed by this study is a measure of the degree to which data collected using a particular instrument represents a specific domain or content of a particular concept. To establish the validity of the research instruments the researcher sought the opinions of experts in the field of study especially the lecturers in the department of business administration. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity

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According to Walliman (2001), reliability refers to the consistency of measurement and is frequently assessed using the testNretest reliability method. Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. The pilot data was not be included in the actual study. The pilot study allowed for pre-testing of the research instrument. The clarity of the instrument items to the respondents was established so as to enhance the instrument's validity and reliability. The pilot study enabled the researcher to be familiar with research and its administration procedure as well as identifying items that require modification. The result helped the researcher to correct inconsistencies arising from the instruments, which ensured that they measure what is intended.

3.7 Data Analysis and Processing

The researcher perused completed questionnaires and document analysis recording sheets. Quantitative data collected was analyzed by the use of descriptive statistics using SPSS and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts and in prose-form. This was done by tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS. Content analysis was used to test data that is qualitative nature or aspect of the data collected from the open ended questions. According to Baulcomb, (2003), content analysis uses a set of categorization for making valid and replicable inferences from data to their context.

In this research a dynamic econometric model was employed to assess the joint relationship between housing prices and real estate financing. To investigate this relationship the study formulated multiple regression equation and in doing so the research sough to answer one key question has dramatic increase in real estate credit caused by booms in the housing sectors in Kenya or is it the house prices that have affected the mortgage market. This approach provides an opportunity to study the major determinants of real estate financing and house price in Kenyan market. As the above empirical evidence indicates, it seems plausible that the direction of causality is bi-directional and a multivariate co-integration approach

allowed treatment of both variables as endogenous in the long-run. A pair of equations describing what determines real housing prices and real household debt at the aggregate level in long run equilibrium are considered. The model was selected price of the house was function of household debt and household debt was a function of various factors thus two equation.

$$D = \beta_0 + \beta_1 H + \beta_2 R + \beta_3 YH + \beta_4 TH \quad (1)$$
$$PH = \beta_0 + \beta_1 YH + \beta_2 D \quad (2)$$

In (1) and (2) PH denotes real housing prices, YH represents real disposable income for the household sector, R is the real interest rate after tax, D is real household debt, H is the housing stock and TH is housing turnover. The equations are not estimated simultaneously because the research seeks to determine the direction of causation and to establish a relationship but not solve the equations.

Equation (1) defines household debt as a function of the housing stock, the interest, disposable income, and housing turnover. The credit equation is an extended version of Fitz Patrick and Mcquin (2007) credit model where they studied mortgage credit as a function of disposable income and housing supply and demands. The specification is augmented by the housing stock and housing turnover as plausible explanatory variable. Instead of just considering the direct effects of house prices on credit, the research use the value of housing investment which is product of housing stock and housing turnover (demand and supply). The reason for this is that it's the value of investment in the house that determines the collaterizable net worth and not supply of housing prices.

Equation (2) presents housing prices as a function of disposable income, household debt, the interest rate, housing stock and housing turnover. It is inverted demand equation for housing services and express market clearing prices for any housing with given household income and available housing finance. This methodology was borrowed from the seminar contribution by (Hendry and Wallis, 1984). The equation describes housing prices as an increasing function of disposable income and household debt, while a greater supply of housing services is expected to push housing prices.

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CHAPTER FOUR:

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the findings on to determine the relationship between house prices and real estate financing in Kenya. From the study population target of 20 respondents from various commercial banks in Kenya were selected and presented with a questionnaire, out of 20respondents, 20 respondents filled and returned their questionnaires, constituting 100 % response rate. Data analysis was done through Statistical Package for Social Scientists (SPSS). Frequencies and percentages were used to display the results which were presented in tables, charts and graphs.

4.2 Analysis and Interpretation

4.2.1 General Information

Table 4.1: Gender of the respondent

Gender	Frequency	Percent
Male	13	63.4
Females	7	36.6
Total	20	100.0

From the finding on the gender of the respondent, the study found that 63.4% of the respondent indicated that they were males whereas 36.6% of the respondent indicated they were females, this is an indication that most of the respondent were males.

Table 4.2: Age of the respondent

Age	Frequency	Percent
26 to 30 years	5	26.8
31 to 35 years	6	31.7
36 to 40 years	5	24.4
Above 40 years	4	17.1
Total	20	100.0

On the age of the respondent the study found that 31.7% of the respondent indicated that they were aged between 31 to 35 years , 26.8% of the respondent indicated that they were aged between 26 to 30 years , 24.4% of the respondent indicated that they were aged between 36 to 40 years whereas 14.1% of the respondent indicated that they were aged above 40 years , this clearly show that employee working in the banking industry were well distributed in terms of their age .

Table 4.3: Respondent highest level of education

Level of education	Frequency	Percent
Diploma	4	19.5
Degree	10	51.2
Post Graduate	6	29.3
Total	20	100.0

From the finding on the respondent highest level of education the study found that majority of the respondent as shown by 51.2% indicated they had attained degree level of education , 29.3% of the respondent indicated that they had attained post graduate level of education whereas 19.5% of the respondent indicated that they had attained diploam level of education , this show that all the employees working in the banking industry had attained tertiary level of education .

Table 4.4: Length of time in the bank

Length	Frequency	Percent
1 to 3 years	3	14.6
3 to 7 years	7	34.1
8 to 10 years	5	24.4
Above 10 years	5	26.8
Total	20	100.0

From the finding on the respondent length of time they had been working in the banks, the study found that 34.1% of the respondent had worked in the bank for 3to 7 years , 26.8% of the respondent indicated that they had worked in the bank for above 10 years , 24.4% of the respondent indicated that they had worked for the bank for 8 to 10 years whereas 14.6% of the respondent indicated that they had worked for their organisation for 1 to 3 years, this shows most of the employee had worked in the bank long enough to give credible information to the study.

4.2.2 Real Estate Financing and House Price
Table 4.5: Extent to which bank emphasises on Real Estate financing

Extent	Frequency	Percent
Very great extent	7	36.6
Great extent	10	46.3
Moderate extent	3	17.1
Total	41	100.0

From the findings on the extent to which bank emphasises on real estate financing, the study found that 46.3% of the respondent indicated to great extent, 36.6% of the respondent indicated to very great extent whereas17.1% of the respondent indicated to moderate extent, this is an indication that commercial banks in Kenya emphasises on real estate financing to great extent.

Table 4.6: Factors relating relationship between real estate financing and house price

	Strongly agree	Agree	Moderate	Disagree	Strongly disagree	Mean	Std deviation
consistent growth in real estate financing can be explained house prices which keep on rising and the growing	7	12	1	0	0	1.9032	.73816

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in access to credit							
Housing price represents the major investment required for one to own a house	6	10	3	0	0	2.0000	.76613
Customers in the housing market enjoy the services by either renting or owning a house which can be classified as a highly durable consumer good as well as an investment	6	11	3	0	0	2.0108	.72972
Mortgage lending by banks for real estate purposes represents the major type of lending at present in Kenya	9	10	1	0	0	1.6989	.62180
Real estate lending has been closely correlated with property prices in both developed and developing economies	8	10	1	0	0	1.6667	.53838
Property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans	11	9	0	0	0	1.5591	.56071
diversification of investment	10	9	0	0	0	1.5839	.63610
promote innovation Real Estate financing	8	10	1	0	0	1.7097	.86704
attracting more customers	8	9	3	0	0	1.7527	.86798

From the findings on the extent to which various factors relating relationship between real estate financing and house price, the study found that majority of the respondent agreed that property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans as shown by mean 1.5591, diversification of investment as shwon by mean 1.5839,

real estate lending has been closely correlated with property prices in both developed and developing economies as shown by mean of 1.6667, mortgage lending by banks for real estate purposes represents the major type of lending at present in Kenya as shown by mean of 1.6989, promote innovation Real Estate financing as shwon by mean 1.7097, attracting more customers as shwon by mean 1.7527, consistent growth in real estate financing can be explained house prices which keep on rising and the growing in access to credit as shown 1.9032, housing price represents the major investment required for one to own a house as shown by mean 2.0 and customers in the housing market enjoy the services by either renting or owning a house which can be classified as a highly durable consumer good as well as an investment as shown by mean of 2.0108.

Table 4.7: Extent to which house Price affects real estate financing

Extent	Frequency	Percent
Very great extent	4	19.5
Great extent	10	51.2
Moderate extent	6	29.3
Total	20	100.0

From the finding on the extent to which house Price affects real estate financing by commercial bank, the study found that majority of the respondent as shown by 51.2% indicated to great extent, 29.3% of the respondent indicated to moderate extent whereas 19.5% of the respondent indicated to very great extent.

Table 4.8: Factors affecting house price in the country

	Very great extent	Great extent	Moderate extent	Low extent	Not at all	Mean	Std deviation
Economic growth	7	5	4	4	0	2.2258	1.1433
Real estate financing interest rate after tax	6	5	5	3	0	2.1312	1.11453

						Mean	Std dev
Real estate financing debt	7	5	4	3	0	2.4194	1.00350
Housing turnover	14	4	2	0	0	1.5978	.64504
Housing stock	7	12	1	0	0	1.7097	.68494
Real disposable income	8	9	3	0	0	1.7204	.69729

From the finding on the extent to which various factors affect house price in the country, the study found that majority of the respondent rated the following to great extent, housing turnover as shown by mean of 1.5978, housing stock as shown by mean of 1.7097, real disposable income as shown by mean 1.7204, real estate financing interest rate after tax as shown by mean of 2.1312, economic growth as shown by mean 2.2258 and real estate financing debt as shown by mean of 2.4194.

Table 4.9: Level of agreement on factors relating to Real Estate financing in Kenya

	Very great extent	Great extent	Moderate extent	Low extent	Not at all	Mean	Std deviation
Bank lending is closely correlated with property prices in that property prices influenced both demand and the availability of bank credit via various wealth effect	7	9	3	0	0	1.8817	.76399
Real estate financing reliably provide housing to Kenyans	6	9	5	0	0	1.9355	.74901
Increases in housing prices are positively and significantly related to growth in long-term mortgage loans	5	10	5	0	0	1.9892	.71467
Real estate financing provide mechanism of aggregating funds through financial intermediation	9	10	1	0	0	1.6344	.60406
Real estate financing encourage bank customers to save	7	12	1	0	0	1.6559	.54163
Credit conditions may also affect asset valuations, as increases in credit	10	10	0	0	0	1.5269	.54357

availability may expand the demand for a (temporarily) fixed supply of properties							
Borrowing capacity and credit demand of households and firms are affected by changes in prices of properties	12	6	1	0	0	1.5516	.61708
Property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans	11	7	2	0	0	1.6559	.86596
Property prices leads to an increase in mortgage lending as more and more people borrow to purchase properties for speculative purposes	8	9	1	1	0	1.7957	.86677
Increases in both mortgage credit and house prices have had an accelerator effect on the whole economy by increasing household spending /consumption capabilities	7	5	4	3	0	2.4161	.38992

From the findings on respondent level of agreement the various statements relating to Real Estate financing in Kenya, the study found that respondent agreed that borrowing capacity and credit demand of households and firms are affected by changes in prices of properties as shown by mean of 1.5516, credit conditions may also affect asset valuations, as increases in credit availability may expand the demand for a (temporarily) fixed supply of properties as shown by mean of 1.5269, real estate financing provide mechanism of aggregating funds through financial intermediation as shown by mean of 1.6344, real estate financing encourage bank customers to save and property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans as shown by mean of 1.6559 in each case , property prices leads to an increase in mortgage lending as more and more people borrow to purchase properties for speculative purposes as shown by mean of 1.7957, bank lending is closely correlated with property prices in that property prices influenced both demand and the availability of bank credit via various wealth effect as shown by mean of 1.8817, Real estate financing reliably provide housing to Kenyans as shown by mean of 1.9355, Increases

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in housing prices are positively and significantly related to growth in long-term mortgage loans as shown by mean of 1.9892 and Increases in both mortgage credit and house prices have had an accelerator effect on the whole economy by increasing household spending /consumption capabilities as shown by mean of 2.4161.

Table 4.10: Market factors that affect Real Estate financing by commercial banks in Kenya

	Strongly agree	Agree	Moderate	Disagree	Strongly disagree	Mean	Std deviation
Real Estate financing affects the financial performance of commercial banks	5	6	5	3	1	2.1204	1.12642
Real estate financing enhances banks diversification of portfolio	4	7	6	3	0	2.4301	.99343

From the findings on the extent to which various market factors that affect Real Estate financing by commercial banks in Kenya, the study found that respondent agreed that real Estate financing affects the financial performance of commercial banks as shown by mean of 2.1204 and real estate financing enhances banks diversification of portfolio as shwon by mean 2.4301.

Table 4.11: Aspect of Real Estate financing influence on financial performance of commercial Banks

	Very great extent	Great extent	Moderate extent	Low extent	Not at all	Mean	Std deviation
Prevailing market conditions	14	4	1	0	0	1.7871	.64323
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty.	7	12	1	0	0	1.7419	.72086
Liquidity premium	9	8	3	0	0	1.6774	.70958
Competition leading to interbank rate	12	6	1	0	0	1.5914	.85002
Policy rate that is linked to the Open Market Operations	6	9	5	0	0	1.9355	.74901
Demand and supply	10	8	2	0	0	2.3731	.95085
Return on Asset	8	9	2	0	0	1.5582	.59548
Market expectations	7	10	3	0	0	1.7164	.69208

On the extent to which various aspect of Real Estate financing influence on Financial performance of commercial Banks, the study found that those rated to great extent were return on asset as shown by mean of 1.5582, competition leading to interbank rate as shwon by mean of 1.5914, liquidity premium as shown by mean of 1.6774, market expectations as shwon by mean of 1.7164, credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty as shwon by mean 1.7419, prevailing market conditions as shown by mean of 1.7871, policy rate that is linked to the open market operations as shown by mean 1.9355 and demand and supply as shwon by mean of 2.3731.

Table 4.12: Real Estate financing and financial performance of the Real Estate firm

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std deviation
high interest from real estate improve financial performance of the bank	6	11	3	0	0	1.8209	.67252
Sound credit risk management practices are built on good-quality portfolio management	6	10	4	0	0	1.8955	.74130
Real estate financing encourage bank customer to Save leading to high interest earnings for the Bank	5	10	5	0	0	2.0149	.70695
Encountering competitions in the market improve Real Estate firm's assets	9	11	0	0	0	1.5821	.55457
Real estate financing lead to increase Real Estate firm's investment yielding to high yield performance	10	10	0	0	0	1.7015	.52267
The Real Estate financing firms attract more customers leading to increase customer base	12	7	1	0	0	1.5224	.53252
Customers are offered good free consultant service.	4	7	6	3	0	2.1761	1.08462
Real Estate investment has made the firm to result to diversification of investment increasing firm's	7	9	1	2	0	1.6418	.88252

earnings.							
Market liberalization lead to improvement of Real Estate finance	6	10	4	0	0	1.8806	.89650
Cross selling potential has promoted Real Estate financing	8	6	6	0	0	2.1866	3.91659
Real Estate finance has led to Improving profitability of the bank	6	11	2	1	0	2.1776	.61196

From the finding on the respondent level of agreement on various statement relating to Real Estate financing and financial performance of the financial performance of the Real Estate firm, the study found majority of the respondent agreed that the real estate financing firms attract more customers leading to increase customer base as shown by mean 1.5224, Encountering competitions in the market improve Real Estate firm's assets as shwon by mean of 1.5821, Real Estate investment has made the firm to result to diversification of investment increasing firm's earnings as showb by mean 1.6418,Real estate financing lead to increase Real Estate firm's investment yielding to high yield performance as shwon by mean 1.7015, high interest from real estate improve financial performance of the bank as shown by mean of 1.8209, Sound credit risk management practices are built on good-quality portfolio management as shwon by mean 1.8955, Market liberalization lead to improvement of Real Estate finance as shwon by mean 1.8806, Real estate financing encourage bank customer to Save leading to high interest earnings for the Bank as shown by mean of 2.0149, Real Estate finance has led to Improving profitability of the bank as shwon by mean of 2.1776, Customers are offered good free consultant service as shwon by mean 2.1761 and Cross selling potential has promoted Real Estate financing as shown by mean of 2.1866.

4.2.3 Regression Analysis
Table 4.13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.981[a]	.962	.955	98136.87815

From the findings in the above table , the adjusted R^2 is known as coefficient of determination and it tell us the variation in real estate financing with changes in housing stock, the real estate interest, real disposable income and the housing turnover. From the above table there was 95.5% variation in real estate financing with changes in housing stock, the real estate interest, real disposable income and the housing turnover. R is the correlation coefficient which shows the strength of relationship between real estate financing and housing stock, the real estate interest, real disposable income and the housing turnover. From the data there was a strong correlation between household debt and housing stock, the interest rate, disposable income and the housing turnover as shown by correlation coefficient of 0.981. The above table shows that there was very strong relationship between real estate financing , housing stock, the real estate interest, real disposable income and the housing turnover accounted for 95.5% changes in real estate financing .

Table 4.14: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.943E12	3	1.314E12	136.482	.000[a]
	Residual	1.541E11	16	9.631E9		
	Total	4.097E12	19			

From the ANOVA statics in the above table , the processed data, which are the population parameters, had a significance level of 0 which is less than 0.05 and indication that the data is ideal for making a conclusion on the population's parameter.

Table 4.15: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	-1.036E7	6730144.381		-1.539	.143
	real interest rate after tax R	-14783.828	64336.600	-.025	-.230	.821
	real disposable income (YH)	380.251	213.937	.493	1.777	.095
	housing turnover(TH)	93.708	57.578	.514	1.628	.123

The table above was also used in coming up with the model below:

$$D = -1.0367E7 - 14783.828\,R + 380.251\,YH + 93.708\,TH$$

According to the model, holding real interest rate after tax, real disposable income, housing turnover and housing stock to a constant zero, real estate financing would stand at - 1.036E7, a unit increase in real interest rate after tax would lead to decrease in real estate financing by a factors of 14783.828, a unit increase in real disposable income would lead to increase in real estate financing by a factor 380.251, further unit increase in house turnover would lead to increase in real estate financing by factors of 93.708. In developing the above model housing stock was excluded.

Table 4.16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972[a]	.946	.939	5.08317E5

The adjusted R^2 is known as coefficient of determination and it tell us the variation in housing prices with changes in real disposable income and economic growth. From the above table there was 93.9% variation in housing prices with changes in real disposable income and economic growth. R is the correlation coefficient which shows the strength of relationship between the housing pricing real disposable income and economic growth, there was a strong positive correlation between housing pricing real disposable income and real household debt as shown by correlation coefficient of 0.972.

Table 4.17: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.640E13	2	3.820E13	147.833	.000[a]
	Residual	4.393E12	17	2.584E11		
	Total	8.079E13	19			

From the ANOVA statics in the above table, the processed data, which are the population parameters, had a significance level of 0 which is less than 0.05 and indication that the data is ideal for making a conclusion on the population's parameter.

Table 4.18: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	-2.909E7	2.665E7		-1.092	.290
	real disposable income (YH)	1145.897	911.613	.335	1.257	.226
	Economic Growth (EG)	2.854	1.182	.643	2.414	.027

The coefficient table in table above was also used in coming up with the model below:

PH = - 2.909E7 + 1145.897YH + 2.854 EG

According to the model holding real disposable income and economic growth to a constant zero, housing price would stand at would stand at -2.909E7 , a unit increase in economic growth would lead to increase in housing price by a factors of 1145.897, a unit increase in real household debt would lead to increase in housing price by a factors of 2.854 .

The study further sought to establish the regression equation between the housing price and real disposable income, real interest rate after tax, real estate financing, housing turnover and housing stock. The results are shown in the tables below.

Table 4.19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983[a]	.967	.958	4.22259E5

The adjusted R^2 (coefficient of determination) tells us the variation in housing price with changes in real disposable income, real interest rate after tax, real estate financing , housing turnover and housing stock. From the above table there was 95.8% variation in housing price with changes in real disposable income, real interest rate after tax, real estate financing, housing turnover and housing stock. R is the correlation coefficient which shows the strength of relationship between the housing pricing and real disposable income, real interest rate after

tax, real household debt, housing turnover and housing stock as shown by correlation coefficient of 0.983.

Table 4.20: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.811E13	4	1.953E13	109.525	.000[a]
	Residual	2.675E12	15	1.783E11		
	Total	8.079E13	19			

From the ANOVA statics in the above table , the processed data, which are the population parameters, had a significance level of 0 which is less than 0.05 and indication that the data is ideal for making a conclusion on the population's parameter.

Table 4.21: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.792E7	3.103E7		1.222	.240
	real disposable income (YH)	855.919	1007.302	.250	.850	.409
	real interest rate after tax R	-457356.998	277280.837	-.175	-1.649	.120
	real estate financing (D)	1.610	1.076	.363	1.497	.155
	housing turnover(TH)	829.930	267.464	1.025	3.103	.007

The coefficient table in table above was also used in coming up with the model below:

$$PH = 3.792E7 + 855.919 \, YH - 457356.998R + 1.610D + 829.930TH$$

According to the model holding real disposable income, real interest rate after tax, real household debt, housing turnover and housing stock at zero , housing price would stand at   -3.792E7. A unit increase in real disposable income would lead to increase in housing price

by a factor of 855.919, a unit increase in real interest rate after tax would lead to decrease in housing price by a factor of 457356.998, a unit increase in real estate financing would lead to increase in housing price by a factor of 1.610 whereas a unit increase in housing turnover would lead to increase in housing price by a factor of 829.930. In developing the above model housing stock was excluded as it is largely represented by housing turnover.

4.3 Summary and Interpretation of Findings

From the finding the study established the following regression analysis

$$D = -1.0367E7 - 14783.828\ R + 380.251\ YH + 93.708\ TH$$

From the model it was revealed that holding real interest rate after tax , real disposable income , housing turnover and housing stock to a constant zero, real estate financing would stand at -1.036E7, a unit increase in real interest rate after tax would lead to decrease in real estate financing by a factors of 14783.828, a unit increase in real disposable income would lead to increase in real estate financing by a factor 380.251 , further unit increase in house turnover would lead to increase in real estate financing by factors of 93.708. In developing the above model housing stock was excluded.

The study further established the following regression equation

$$PH = -2.909E7 + 1145.897YH + 2.854\ EG$$

According to the model holding real disposable income and economic growth to a constant zero, housing price would stand at would stand at -2.909E7 , a unit increase in economic growth would lead to increase in housing price by a factors of 1145.897, a unit increase in real household debt would lead to increase in housing price by a factors of 2.854 . The study further sought to establish the regression equation between the housing price and real disposable income, real interest rate after tax, real estate financing, housing turnover and housing stock. The established equation is

$$PH = 3.792E7 + 855.919\ YH - 457356.998R + 1.610D + 829.930TH$$

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According to the model holding real disposable income, real interest rate after tax, real household debt, housing turnover and housing stock at zero , housing price would stand at -3.792E7. A unit increase in real disposable income would lead to increase in housing price by a factor of 855.919, a unit increase in real interest rate after tax would lead to decrease in housing price by a factor of 457356.998, a unit increase in real estate financing would lead to increase in housing price by a factor of 1.610 whereas a unit increase in housing turnover would lead to increase in housing price by a factor of 829.930. In developing the above model housing stock was excluded as it is largely represented by housing turnover.

The study revealed that commercial banks in Kenya emphasises on real estate financing to great extent. On various factors affecting the relationship between real estate financing and house price these were property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans, diversification of investment, real estate lending has been closely correlated with property prices in both developed and developing economies, mortgage lending by banks for real estate purposes represents the major type of lending at present in Kenya, promote innovation Real Estate financing, attracting more customers, consistent growth in real estate financing can be explained house prices which keep on rising and the growing in access to credit, housing price represents the major investment required for one to own a house and customers in the housing market enjoy the services by either renting or owning a house which can be classified as a highly durable consumer good as well as an investment.The study found that house price affects real estate financing by commercial bank to great extent. The study revealed that factors affecting house price were housing turnover, housing stock, real disposable income, real estate financing interest rate after tax, economic growth and real estate financing debt.

The study also found that borrowing capacity and credit demand of households and firms are affected by changes in prices of properties, credit conditions may also affect asset valuations, as increases in credit availability may expand the demand for a (temporarily) fixed supply of properties, real estate financing provide mechanism of aggregating funds through financial intermediation and real estate financing encourage bank customers to save and property

prices affect banks' capital position and thus lending capacity, increases in housing prices are positively and significantly related to growth in long-term mortgage loans and Increases in both mortgage credit and house prices have had an accelerator effect on the whole economy by increasing household spending /consumption capabilities.The study found that the market factors that affect Real Estate financing by commercial banks in Kenya were real estate financing affects the financial performance of commercial banks and real estate financing enhances banks diversification of portfolio.

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study revealed that commercial banks in Kenya emphasises on real estate financing to great extent. On various factors affecting the relationship between real estate financing and house price these were property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans, diversification of investment, real estate lending has been closely correlated with property prices in both developed and developing economies, mortgage lending by banks for real estate purposes represents the major type of lending at present in Kenya, promote innovation Real Estate financing, attracting more customers, consistent growth in real estate financing can be explained house prices which keep on rising and the growing in access to credit, housing price represents the major investment required for one to own a house and customers in the housing market enjoy the services by either renting or owning a house which can be classified as a highly durable consumer good as well as an investment.The study found that house price affects real estate financing by commercial bank to great extent. The study revealed that factors affecting house price were housing turnover, housing stock, real disposable income, real estate financing interest rate after tax, economic growth and real estate financing debt.

The study also found that borrowing capacity and credit demand of households and firms are affected by changes in prices of properties, credit conditions may also affect asset valuations, as increases in credit availability may expand the demand for a (temporarily) fixed supply of properties, real estate financing provide mechanism of aggregating funds through financial intermediation and real estate financing encourage bank customers to save and property prices affect banks' capital position and thus lending capacity, increases in housing prices are positively and significantly related to growth in long-term mortgage loans and Increases in both mortgage credit and house prices have had an accelerator effect on the whole economy by increasing household spending /consumption capabilities.The study found that the market factors that affect Real Estate financing by commercial banks in Kenya where real estate

financing affects the financial performance of commercial banks and real estate financing enhances banks diversification of portfolio.

5.2 Conclusion

From the findings on the correlation analysis the study found that there was strong positive correlation between real house price and real disposable income and the study also found strong positive correlation between real house prices and real interest rate after tax. The association between real house price and real estate financing was found to have positive relationship, house turnover and housing price were found to have positive correlation while real house price and house stock were found to have positive correlation as well.

From the above findings the study concludes that the factors that affect the real estate financing are housing stock, housing prices, the interest rate, disposable income and the housing turnover. The study also found that there is positive association between real estate financing and real disposable income and housing turnover but real interest rate after tax was found to be negatively associated with real estate financing. It shows that factors that affect housing pricing were real disposable income, real interest rate after tax, real estate financing, housing turnover and housing stock. The study further concludes that there is a positive association between housing prices and real estate financing, housing turn over and real disposable income but housing price was found to have negative association with real interest rate after tax.

The study concludes that the changes in housing prices are positively and significantly related to the long-term evolution of real estate financing. This result suggests that the evolution of housing prices is not triggered by bank real estate lending and that banks just accommodate real estate financing to the evolution of house prices. Though the study shows a bi-directional causality it concludes that the real estate market does not really affect housing price changes rather changes in housing prices do affect the amount of real estate financing.

5.3 Policy recommendations
From the findings and conclusion the study recommends that in order to maintain the prices of housing at relatively stable levels there is a need for the players in the industry to control

various factors that affect housing prices which include disposable income, real interest rate after tax, real estate financing, housing turnover and housing stock. The government should normalize the functioning of the entire financial market by taking actions to return real estate rates to what they would otherwise be if the real estate market were functioning normally. The CBK should consider exploring more prescriptive rules which would set some minimum standards for real estate development loans in terms of both loan to value and payment to income. Additionally, control standards could be set which would ensure a uniform calculation and disclosure of terms and conditions, rates, fees and charges on properties in Kenya which would stabilize the housing market.

Some of the special characteristics of the housing market that set it apart from other asset markets like a prevalence of small investors, the absence of derivatives and short-selling, the heterogeneity and indivisibility of the traded asset, and low transaction frequency tend to create some degree of inertia in price movements and to exacerbate informational problems. They may also make it easier for prices to be driven by expectations that depart from fundamentals. Several studies have documented a tendency of house price expectations to be of the extrapolative kind. For these reasons, supervisory authorities must continue to ensure that the prudential framework is also resilient, by discouraging excessive risk-taking on the part of lenders and monitoring the possible emergence of financial fragilities in balance sheets in situations where asset prices may be subject to large corrections.

CBK and other interested parties should be encouraged to collect and publish regular real estate market data as well as house prices data. This would be an important instrument for both market development as well as market monitoring. CBK should take lead in collecting this information and making it available to the market on a regular and timely basis.

5.4 Limitations of the study
The study involved the collection of secondary data and primary data from different government and private entities. There being only one private firm that has collected data on house prices made it the only source of the secondary data on house prices. Data from many different entities would have enabled comparison and thus providing strong credibility and confirmation of data accuracy.

There lacked enough local studies on the relationship between the real estate financing and housing prices which is a key sector in the Kenyan financial market. The study relied heavily on international studies which provided insightful data and knowledge on the relationship of the two variables. The Kenyan government should encourage more studies in this direction as the housing market is one of the fastest growing markets as every Kenyan strives to own a home. The real estate financing banks and firms should be highly involved in such studies.

Due to lack of data from the previous years prior to 2006, the study was only carried out for six years. The available data only cover the six year period which is a relatively short period. Availability of more data would have enabled a broader study which would have been more reliable in making generalization regarding the entire housing market.

5.5 Suggestions for Further Research

The area of housing prices and the real estate financing is vast and very little research has been done especially in the Kenyan context. The real estate lending firms should conduct more studies on this issue which would be advantageous in their strategic plans.

One area of research would be the potential re-design of the fiscal structure and the impacts that this may have on the housing market. The imbalance between supply and demand has led to increasing house prices over the last ten or so years, and a good proportion of potential first-time buyers are now priced out of the market. Whilst moves to encourage these first-time buyers (such as recent changes to thresholds on stamp duty) may have positive long-term effects in reducing housing wealth inequality across the generations, the short term effects will be continued instability in the housing market until actual policy changes catch-up with expected policy changes.

Future research focusing on specific elements of housing transaction costs such as brokerage fees, search costs and effects of non-price factors in real estate lending will provide findings that will better characterize the role of those particular items of transaction costs in home purchase.

Area of study would be the effects of land policies in Kenya to the real estate market. This study would show how old a new land policies were affecting the housing market and would assist in coming up with sound policies to govern land issues.

Additional research is needed to more fully understand the role of regional housing and labor markets in generating regional variations in the real estate market.

REFERENCES

Baddeley, M.,. (2005): Housing Bubbles, herds and frenzies: Evidence from British Housing Markets, Gonville & Caius College, and Cambridge UK CEPP POLICY BRIEF NO. 02/05, May 2005.

Bernanke, B. and M. Gertler (1989), Agency Costs, Net Worth and Business Fluctuations, American Economic Review, 79(1): 14-31.

Brissimis, S. N. and T. Vlassopoulos (2009). The Interaction between Mortgages Financing and Housing Prices in Greece. *Journal of Real Estate Economics*, 39,146.164.

Buckley , J and Kalarickal , D. (2005), 'Capital Theory and Investment Behaviour', *American Economic Review*, 53, pp. 247-59.

Burnside, Craig, Martin Eichenbaum, and Sergio Rebelo (2011) "Understanding Booms and Busts in Housing Markets," NBER Working Paper 16734 (Cambridge, Massachusetts: National Bureau of Economic Research).

Campbell, J., Shiller, R., 1988a, The dividend-price ratio and expectations of future dividends and discount factors, Review of Financial Studies 1 (3), 195-228.

Campbell, J., Shiller, R., 1988b, Stock prices, earnings and expected dividends, *Journal of Finance* 43 (3), 661-676.

Case, Karl E. and Robert J. Shiller. (2008). "The Efficiency of the Market for Single Family Homes", *American Economic Review* (March 1989), 79(1):125–37.

Catte . P., Girouard. N., Price. R., and Andre C., (2004): "The contribution of housing markets to cyclical resilience," André *OECD Economic Studies No. 38, 2004/1*

Chana T.S. (1984): Nairobi: Dandora and other projects: in low income Housing in the Developing World. *The role os Sites and services and Settlement upgrading.* Edited by Geoffrey K. Payne. John Wiley and Sons Ltd.

Chang, J., (19894), Stock prices, earnings and expected dividends, *Journal of Finance* 43 (3), 661-676.

Chang, P.J. and , Wald , P. (1993), "House price development and the fiscal treatment of home-ownership", *Housing and Urban Development in New Europe*, Polish Academy of Science, Institute of Geography, Warsaw, (Pultusk, 25-06-2001), pp.1-13.

Claessens, Stijn, M. Ayhan Kose, and Marco E. Terrones, (2008), "What Happens During Recessions, Crunches and Busts? IMF Working Paper 08/274 (Washington: International Monetary Fund).

Coleman, M., LaCour-Little, M. and K.D. Vande (2009): Subprime lending and the housing bubble: Tail wags dog?, *Journal of Housing Economics* 17, 272-290.

Cooper, D. R. & Schindler, P.S. (2003) Business Research Methods (9th Edn). New York: McGraw Hill.

Coyne C.B., Limberg S.T. and Robinson J.R. (1980). "The impact of federal taxes on the use of debt by closely held corporations". *National Tax Journal*, 50 (2), 261-277.

Daphni, J. & Ferguson, A. (2004), 'Booms and Busts in the UK Housing Market', *Economic Journal*, 107(445), pp. 1701-1727.

Diaz, A., and M. J. Luengo-Prado (2002): Durables and the Wealth Distribution, Manuscrip Universidad Carlos III de Madrid.

Donald. K. Kombo & Delno L.A.Tromp, (2006) *Proposal and Thesis Writing,* Kenya   Don
    Bosco Press.

Dubois, M and Anderson, J (2010) Managing household debts: Social service provision in
    the E U. Working paper. Dublin: European Foundation for the Improvement of
    Living and Working Conditions

Engle, Jonathan and Granger W (1987), "Are Home Prices the Next 'Bubble'?"   *FRBNY*
    Economic Policy Review,

Fama, E., French, R.K. (1993). Testing trade off and pecking order predictions about
    dividends and debt. *The Review of Financial Studies,* 15(1), 1-33.

Fama, Eugene F. (1970). Efficient Capital Market: *A Review of Theory and empirical Work.,*
    Journal of Finance 25:383-420

Farragher, E., Kleinman, R. (1999), "A re-examination of real estate investment decision-
    making practices", *Journal of Real Estate Portfolio Management,* Vol. 2 No.1,
    pp.31-9.

Fitzpatrick, T. and K. McQuinn (2007). House Prices and Mortgage Credit: Empirical
    Evidence for Ireland. The Manchester School , 75, 82.103.

Gerlach, S. and W. Peng (2003): "Bank lending and property prices in Hong Kong",

Gertner, H. S., and Scharfstein, M.K., (1991): "Housing Decisions and the U.S. Income Tax:
    An Econometric Analysis," *Journal of Public Economics,* pp. 1–24.

Gitonga, J.N (2002), The Performance Of Real Estate Markets. The Case Of Central
    Business District Of Nairobi, Unpublished Thesis University of Nairobi.

Gordon, Myron J. (1962). The Investment, Financing and Valuation of the Corporation.
    Homewood, Ill.: Irwin.

Government of Kenya (GOK) (1997) "A Development Strategy For Nairobi Informal Settlements". *Prepared by The Nairobi Informal Settlements Coordination Committee*. Nairobi.

Gyourko, Joseph, Christopher Mayer and Todd Sinai. (2006). *"Superstar Cities,"* NBER working paper no. 12355.

Hargitay, S., Yu, S.M. (1993), *Property Investment Decisions: A Quantitative Approach*, E&FN Spon, London,

Hass Consult, (2010). The Hass property index: Quarter One Report 2010

Hendry, D.F. and K.F. Wallis (Eds.) (1984). Econometrics and Quantitative Economics. Oxford: Basil Blackwell.

Higgins, G., (1997), The changing nature of financing low income urban housing development in Kenya, *Housing Studies, Volume 9, Issue 2, pages 189-281.*

Hoesli , Goldman and MacGregor , Sachs, (2000). Global Economics, commodities and Strategy research. Paper No. 181, pp 1-36

Hofmann, B. (2003). Bank lending and property prices: Some international evidence. Tech. Rep. 22, The Hong Kong Institute for Monetary Research.

Jensen, H.M., Meckling and Mayer, C. (1976). Commentary on "Understanding Recent Trends in House Prices and Home Ownership." presented at the Federal Reserve Bank of Kansas City Conference at Jackson Hole, August 31.

Karanja, P (2002), Competitive Strategies of Real Estate Firms. The Perspective of Porter's Generic Model, Unpublished Thesis University of Nairobi.

Kariuki, S (2006) An Assessment Of The Viability Of Real Estate Excunilization In Kenya, Unpublished Thesis University of Nairobi.

Karus, R. and C. Litzenberger (1973). "The relationship between house prices and house purchase loans": The Spanish case. *Journal of Banking and Finance*.

Kinyanjui W.K.(2004) Risk & Returns Of Real Estate Hold In Pension Funds Investment Portfolios In Kenya, Unpublished thesis University of Nairobi .

Lai , T, N., Diaz, A., and M. J. Luengo-Prado (2004): Durables and the Wealth Distribution, Manuscript, Universidad Carlos III de Madrid.

Macoloo, G., (1994), The changing nature of financing low income urban housing development in Kenya, *Housing Studies, Volume 9, Issue 2, pages 189-281*.

Mayer, Christopher and Sinai , John. (2007). Commentary on "Understanding Recent Trends in House Prices and Home Ownership." presented at the Federal Reserve Bank of Kansas City Conference at Jackson Hole, August 31.

Mayer, Christopher and Todd, Sinai. (2007). "Housing and Behavioral Finance," paper presented at the Federal Reserve Bank of Boston Conference on Behavioral Economics, September 25.

Mayer, Christopher, Karen Pence, and Shane Sherlund. (2008) "The Rise in Mortgage Defaults," *Journal of Economic Perspectives*, forthcoming.

Mbogua J.P. and Nganga A.J. (1973): Nairobi-Metropolitan Growth Strategy. Volume 1 Main Report. *The Nairobi Urban Study Group*. Town Planning Department, Nairobi.

Myers, P. (1977) Modelling structural change in the UK housing market: a comparison of alternative house price models *Economic Modelling*, 14, pp. 587-610.

Ngechu , A.J. (2004). *Elements of Education and Science Research Methods*. Masora Publishers.

Oikarinen, E. (2009). Interaction between housing prices and household borrowing: The Finnish case. *Journal of Banking and Finance*, 33, 747.756.

Pain, N. and Westaway, P. (1997) Modelling structural change in the UK housing market: a comparison of alternative house price models *Economic Modelling*, 14, pp. 587-610.

Robicheck, N. and J. Myers (1966), "Credit Cycles," *Journal of Political Economy*, 105(2): 211-48.

Roger, R. (2005). "Understanding Recent Trends in House Prices and Home Ownership." Paper presented at the Federal Reserve Bank of Kansas City Conference at Jackson Hole, August 31.

Rosen, H. S. (1979): "Housing Decisions and the U.S. Income Tax: An Econometric Analysis," *Journal of Public Economics*, pp. 1–24.

Shih, P.H. (1992), "Bubbles in metropolitan housing markets", *Journal of Housing Research*, Vol. 7 No.2, pp.191-207.

Stein's C. (1996), "The location and site selection decision process: meeting the strategic and tactical needs of the users of corporate real estate", *Journal of Corporate Real Estate*, Vol. 3 No.4, pp.356-62.

Tung, R. (1990). "Understanding Recent Trends in House Prices and Home Ownership." Paper presented at the Federal Reserve Bank of Kansas City Conference at Jackson Hole, August 31.

World Bank, (2011) "Developing Kenya's Mortgage Market", Policy Research Working Paper, March, 2011.

APPENDICES

Appendix I: Questionnaire

Section A : General Information

1. Kindly indicate your Gender

   Male   [ ]

   Female   [ ]

2. Indicate by ticking your age bracket

   20- 25 years of age   [ ]

   26-30 years   [ ]

   31 -35 years   [ ]

   36 -40 years   [ ]

   Above 40 years   [ ]

3. What is your highest level of Education? (Tick as applicable)

   Diploma   [ ]

   Degree   [ ]

   Post graduate   [ ]

   Others (specify)   [ ]

4. Indicate the period in years you have been working in your bank.

   Less than one year   [ ]

1-3 years   [ ]

3-7 years   [ ]

8-10 years   [ ]

   Above 10 years   [ ]

Section B : Real estate financing and house price

6. Please indicate the extent to which your bank emphasises on Real Estate financing ?

Very great extent   [ ]

Great extent   [ ]

Moderate extent   [ ]

Low extent   [ ]

Not at all   [ ]

7. To what extent do you agree with the following factors relating relationship between real estate financing and house price? (Where 1-Not at all, 2-Less extent, 3-Moderate Extent, 4 – Great extent and 5 -Very Great extent)

	Strongly agree	Agree	Moderate	Disagree	Strongly disagree
consistent growth in real estate financing can be explained house prices which keep on rising and the growing in access to credit					
Housing price represents the major investment required for one to own a house					
Customers in the housing market enjoy the services by either renting or owning a house which can be classified as a highly durable consumer good as well as an investment					
Mortgage lending by banks for real estate purposes represents the major type of lending at present in Kenya					
Real estate lending has been closely correlated with property prices in both developed and developing economies					
Property prices affect banks' capital position and					

thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans					
diversification of investment					
promote innovation Real Estate financing					
attracting more customers					

8. To what extent does the house Price affects real estate financing by commercial bank ?

Very great extent   [ ]

Great extent   [ ]

Moderate extent   [ ]

Low extent   [ ]

Not at all   [ ]

9. To what extent does the following factors affect house price in the country ?

	Very great extent	Great extent	Moderate extent	Low extent	Not at all
Economic growth					
Real estate financing interest rate after tax					
Real estate financing debt					
Housing turnover					
Housing stock					
Real disposable income					

9. To what extent do you agree with the following statements on relating to Real Estate financing in Kenya ? (Where 1-Not at all, 2-Less extent, 3-Moderate Extent, 4 –Great extent and 5 -Very Great extent)

	Very great extent	Great extent	Moderate extent	Low extent	Not at all
Bank lending is closely correlated with property prices in that property prices influenced both demand and the availability of bank credit via various wealth effect					
Real estate financing reliably provide housing to Kenyans					
Increases in housing prices are positively and significantly related to growth in long-term mortgage loans					
Real estate financing provide mechanism of aggregating funds through financial intermediation					
Real estate financing encourage bank customers to save					
Credit conditions may also affect asset valuations, as increases in credit availability may expand the demand for a (temporarily) fixed supply of properties					
Borrowing capacity and credit demand of households and firms are affected by changes in prices of properties					
Property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans					
Property prices leads to an increase in mortgage lending as more and more people borrow to purchase properties for speculative purposes					
Increases in both mortgage credit and house prices have had an accelerator effect on the whole economy by increasing household spending /consumption capabilities					

10. To what extent do you agree with the following market factors that affect Real Estate financing by commercial banks in Kenya? (1-means strongly disagree, 2-disagree, 3-neutral, 4-agree and 5- strongly agree).

	Strongly disagree	Disagree	Moderate	Agree	Strongly agree
Real Estate financing affects the financial performance of commercial banks					
Real estate financing enhances banks diversification of portfolio					

11. To what entent do following aspect of Real Estate financing influence on Financial performance of commercial Banks ?

	Very great extent	Great extent	Moderate extent	Low extent	Not at all
Prevailing market conditions					
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty.					
Liquidity premium					
Competition leading to interbank rate					
Policy rate that is linked to the Open Market Operations					
Demand and supply					
Return on Asset					
Market expectations					

13. To what extent do you agree with each of the following statement about Real Estate financing and financial performance of the financial performance of the Real Estate firm? (1-means strongly disagree, 2-disagree, 3-neutral, 4-agree and 5- strongly agree).

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
high interest from real estate improve financial performance of the bank					
Sound credit risk management practices are built on good-quality portfolio management					
Real estate financing encourage bank customer to Save leading to high interest earnings for the Bank					
Encountering competitions in the market improve Real Estate firm's assets					
Real estate financing lead to increase Real Estate firm's investment yielding to high yield performance					
The Real Estate financing firms attract more customers leading to increase customer base					
Customers are offered good free consultant service.					
Real Estate investment has made the firm to result to diversification of investment increasing firm's earnings.					
Market liberalization lead to improvement of Real Estate finance					
Cross selling potential has promoted Real Estate financing					
Real Estate finance has led to Improving profitability of the bank					

15.Kindly indicate how Real Estates financing affects by commercial affect the house prices?

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Thank you

Appendix II : List Of Commercial Banks In Kenya

1	African Banking corporation limited	24	Guardian Bank.
2	Bank of Africa limited	25	Giro Commercial Bank
3	Bank of Baroda(k) limited	26	Gulf African Bank
4	Bank of India	27	Habib bank A G Zurich
5	Barclays Bank of Kenya limited	28	Habib Bank Limited
6	CFC Stanbic limited	29	Imperial Bank Limited
7	Chase Bank	30	Investment and Mortgage Bank Limited
8	Citibank N. A kenya		
9	City Finance bank	31	Islamic Bank
10	Cooperative Bank of Kenya	32	K-REP Bank
11	Commercial Bank of Africa	33	Kenya Commercial Bank Limited
12	Consolidated Bank of Kenya	34	Middle East Bank (k) Limited
13	Credit Bank	35	National bank of kenya Limited
14	Development Bank of Kenya	36	NIC Bank limited
15	Diamond Trust	37	Oriental Commercial Bank Limited
16	Dubai Bank	38	Paramount Universal Bank Limited
17	Ecobank	39	Prime Bank Limited
18	Equatorial Commercial Bank	40	Southern Credit Banking Corporation Limited
19	Equity Bank		
20	Fidelity Commercial Bank	41	Standard Chartered Bank(k) Limited
21	Family Bank	42	Transnational Bank Limited
22	Fina Bank	43	Victoria Commercial Bank
23	First Community Bank		

Source, CBK (2011)

Appendix III: Data from hass consultant

		real house price (PH)	real disposable income (YH)	real interest rate after tax R	real household debt (D)	housing stock (H)	housing turnover(TH)
2007	Q1	15000000	32457	12.1	2500000	10016	7705
	Q2	15405000	32493	12.2	2575000	10517	8090
	Q3	15820935	32561	12.3	2652250	11042	8494
	Q4	16089891	32629	12.5	2731818	11595	8919
2008	Q1	16210000	32698	13.3	2813772	12174	9365
	Q2	16247283	32767	13.5	2898185	12783	9833
	Q3	16284652	32835	14.1	2956149	13422	10325
	Q4	17587424	32904	13.4	3015272	14093	10841
2009	Q1	18300000	32973	13.6	3075577	14798	11383
	Q2	18336600	33376	14.1	3137089	15538	11952
	Q3	18373273	33449	14.4	3199831	16315	12550
	Q4	18410020	33523	14.0	3263827	17131	13177
2010	Q1	18630940	33597	13.7	3329104	17473	13441
	Q2	20433480	33671	14.0	3428977	17823	13710
	Q3	19996447	33745	14.3	3531846	18179	13984
	Q4	20036440	33819	14.1	3637802	18543	14264
2011	Q1	20927083	33893	14.2	3746936	18913	14549
	Q2	20836364	33968	14.3	3859344	19292	14840
	Q3	20878037	34043	14.4	3975124	19678	15137
	Q4	20919793	34435	14.6	4000000	20032	15409