

**EFFECT OF FINANCIAL LIBERALISATION ON REAL ESTATE PRICES  
IN KENYA**

**BY**

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## DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the University of Nairobi for academic credit.

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**Paul Waini**

This Project has been submitted with my approval as the University Supervisor:-

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## **DEDICATION**

I dedicate this work to my Mother Susan Nyambura Waini, nieces, nephew, brothers and Sisters, Elizabeth, Blessing Nyambura, Sandra Nyambura

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I humbly acknowledge my Almighty God for gift of Life and good health, may his name be glorified for ever.

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## ABSTRACT

The study sought to establish the effect of financial liberalization on real estate prices in Kenya. Specifically, the study sought to establish the effect of Central Bank Rate (CBR), Commercial Bank Lending Rate, and Inflation Rates on Real Estate Prices in Kenya. The study followed a descriptive research design and used secondary data. The study used average annual secondary data for the period between 2000 – 2013. The independent variables CBR, Interest Rate, and Inflation were obtained from CBK website, while the Real Estate Prices were obtained from Hass Consult. The study used excels spread sheets to organize the data and SPSS version 20 to analyse the data. The study established that the study variables fluctuated throughout the period. Also, the study established that Real Estate Prices grew each year since 2000 to 2013 with growth spurts during the 2001/2002 (19.91%) and 2008/2009 (20.90%). Regression analysis results revealed that there is a strong positive relationship between the independent variables (CBR, Commercial Bank Lending Rates, and Inflation Rate) with Coefficient of determination ( $R=0.816$ ), but the independent variables would explain 56.6% of the change in Real estate prices ( $R\text{ Square}=0.566$ ); hence 43.4% of change in real estate prices is caused by other factors. Further, with a p-value equal to 0.009 the results implied that the regression model was significant in predicting the relationship between Real Estate Prices and the predictor variables as it was less than  $\alpha=0.05$ . However, F-table tabulated at  $F_{14; 3; 0.05}$  was 8.74 which was greater than  $F= 6.661$  determined through analysis depicting that the model was insignificant. The study concludes that a change in CBR causes the highest influence on real estate prices followed by the inflation rates since the coefficient corresponding to Central bank rate (CBR) was statistically significant (p-value was 0.001), while Commercial Bank Lending Rate and Inflation Rate were statistically insignificant as depicted by P-Values equal to 0.756 and 0.448 respectively. The study recommends that policy makers and regulators should enact and uphold rules that ensure that real estate prices remain affordable for the citizenry. Also, CBR should be regulated very cautiously because its corresponding correspondent was statistically significant while those corresponding to lending rates and inflation rates were statistically insignificant. Also, the study recommends that future studies should be conducted to find out the relevant regulatory and policy issues that should be developed and employed by regulatory policy makers in order to appropriately guide financial liberalization in the country. Moreover, future studies could include more variables that affect the real estate prices. Also, future studies may consider cross-economy comparisons.

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## LIST OF ABBREVIATIONS

CAPM	Capital Asset Pricing Model
CBK	Central Bank of Kenya
CBR	Central Bank Rate
DI	Disposable income
DPI	Disposable Personal Income
GDP	Gross Domestic Product
GVC	Government consumption as a ratio to GDP
HPI	House Price Index
MDGP	Metropolitan Gross Domestic Product
PGDP	Private Credit to GDP
PTC	Ratio of Private Credit to Total Domestic credit
REIT	Real Estate Investment Trust
ROE	Return on Equity

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

According to CBK (2011), mortgage loan size changed from Ksh. 2.5 million to Ksh. 4.0 million between 2006 and 2010. Although mortgage loan accounts had increased more than twice from 2006 to 2010, they were still small in 2010 as they stood at 15,049. Also, although the interest rate figures have consistently altered in between 2010 and 2014 CBK (2011) notes that they have been ranging between 12.2% and 14.4%. The real estate sector in Kenya has significantly grown in the last decade or more as both businesses and individuals are usually under the assumption that it is one of the few sectors where one is unlikely to incur a loss.

Regardless of this assumption, this sector has been highly affected by fluctuating interest rates that is highly evident in mortgage interest rates. These mortgage interest rates have been highly affected by banks, which are further influenced by the Central Bank of Kenya. Nevertheless, Ganoulis & Giuliadori (2009) state that the presence of financial liberalisation- being the elimination of interest rates restrictions and bank deregulations in combination with improved monetary policy frameworks to advance development and growth in the sector of finance- may have made its share of contribution in influencing the evident trends in the real estate sector.

Notably, market forces also have a significant role to play in the setting of real estate prices. Nevertheless, researchers feel that the role of government interference through the

banking and financing sectors has been most influential (Semmler & Young, 2006). Economists attribute the 2008/2009 financial meltdown to the banking sector due to financial liberalisation through fast capital market liberalisation. According to Semmler & Young (2006), too fast liberalised capital markets, with risks solely left to the market, can trigger boom-bust cycles, the busts precipitated by financial instability, entailing contagion effects and strong negative effects on the real side of the economy.

### **1.1.1 Financial Liberalization**

Financial Liberalization refers to reduction of any sort of regulations on the financial industry of a given country. According to Patnaik (2011) financial liberalisation involves; allowing interest rates to fluctuate based on fundamentals, reducing directed and subsidised credit, redrafting financial and bank statutes, adopting indirect instruments of monetary policy, privatising banking systems, and easing conditions for participation in stock markets. According to Glaeser et al. (2008) financial liberalisation is often associated with better economic development and eased life for citizens.

According to IMF (2004), Financial Liberalization refers to reduction of any sort of regulations on the financial industry of a given country. Although highly subjective, financial Liberalization can be categorized as being either rules-based, where they are constructed from the legal statutes and laws of the respective country or outcome-based, where liberalization is measured by a variable that is supposed to represent the outcome of the liberalization process (for example, interest rates or the volume of credit by deposit money banks to the private sector to capture DFL, or actual capital openness). The rules-

based measures are often differentiated into 0/1 indicators or some continuous version thereof.

Lending rates are highly influenced by real interest rates, which are greatly driven by inflation. CBK supervises the banks, which sets the base lending rate with the consideration of all economy factors (Wanyama, Yegon&Kemboi, 2014). With this guidance, under the umbrella of financial liberalisation, banks form their own borrowing rates or mortgage rates with the basis of the lending rate set by CBK. Evidently, the country is not financial liberalised as it ought to appear.

The cost-benefit ratio may be one of the attributes that have been highly influenced by financial liberalisation. Liberalization allows various market forces to come into play. The cost of houses is highly affected by interest rates. High interest rates on money lent or mortgages elevate the prices of the houses in order to gain a considerable benefit (Muthaura, 2012). However, the number of banks in a market may balance forces of interest rates and government influence. Many banks in a market have a downward effect on the interest rates as banks lower their rates in order to attract consumers.

The disposable income (DI) was predicted to be one of the areas that would be affected by liberalisation. As a result of liberalisation, businesses increase, employment opportunities increase, which further increases the spending behaviour. Increased DI may affect such issues as urbanisation, which highly affects the housing sector (Ganoulis&Giuliodori, 2009). According to UN Habitat (2008) two-thirds of the world's population will be living in urban areas by the year 2030. Overall, the cost of borrowing,

CBR, number of banks and DI are significant factors that should be considered when assessing the effect of liberalisation on the real estate sector.

### **1.1.2 Real Estate Prices**

Real estate pricing deals with valuation of real estate and all standard valuation methods of valuing the price of fixed assets apply (Coporale& Gil-Alana 2010). Real estate appraisal also known as property valuation is the process of establishing the value of real property such as land and structures established on land such as a house (Grabel 2003). The value sought is the property market value. Notably, compared to corporate stock, real estate transactions occur very infrequently. Also, every property is different from the next, a factor that does not affect assets like corporate stock and others. In addition, all properties differ from each other in their location - which is an important factor in their value (Amadeo 2012).

Real estate can be valued; at Cost – cost of investment, at market value - price at which an asset would trade in a competitive market or at Value-in-Use also called Use Value– the NPV of a cash flow that the asset generates for a specific owner under a specific use (may be lower or higher than market price). According to Schram (2006) pricing real estate at cost is always the easiest method since one can use the total cost of buying land and establishing structures, or by simply using the rate at which funds can be obtained by lending institutions.

Mortgage rates, which affect the prices of houses/real estate, are highly dependent on the above mentioned independent variables. This can only be explored with the

understanding of real estate investments. Real estate is a term that is used to address land and every other thing that is linked or attached to the same (Ott, 2006). It further entails the extent to which interests and rights in of the same are owned. It is a relatively new asset class that has attracted the interest of numerous investors who are searching for long-term investments. This asset class is highly characterised by heterogeneity, where trade occurs between individual buyers and sellers, therefore moulding a non-transparent and illiquid market (Ott, 2006). Nevertheless, the asset's qualities of diversification and creation of attractive risk-adjusted returns via its high Sharpe Ratio and low risk have made the sector very attractive. The market's risks are controlled through hedging against unexpected inflation (Ganoulis&Giuliodori, 2009). Many investors view the market as a generator of cash flow through return's income component.

Common in real estate pricing, is the concept of property productivity(Fanning, 2005).Property productivity analysis is the analysis of a property's capacity to deliver services to meet human needs, house economic activities, and supply satisfaction and amenities(Fanning, 2005). A parcel of real estate produces (supplies) services for those who use it.Price paid is a function of:its supply of services relative to potential users' purchasing power, need for its services, and inability to find good substitutes at a lower price. Notably, market value analysis in Real Estate is different from other types of market price analysis since; real estate is not well defined, product can change over time, and the fact that the location is fixed.

### **1.1.3 Effect of Financial Liberalization and Real Estate Prices**

Price liberation started to occur in Kenya at around 1991. Even though, CBK has been blamed for not being responsive enough to develop and enforce regulations to encourage faster and appropriate financial liberalizations. However, Kirugu (2013) notes that the presence of the government in the financial sector through CBK is still formidable. Nonetheless, the banking sector has been highly influential in the real estate market. The main avenue of influence has been through the lending rates. Even through, most ordinary Kenyans cannot afford the huge capital needed to invest in the real estate market. They therefore turn to banks for financial assistance.

Keynesian economics focuses on immediate results in economic theories. Policies focus on the short-term needs and how economic policies can make instant corrections to a nation's economy. The government is seen as the only force to end economic downturns through monetary or fiscal policies to balance the level of demand and supply of various products (Keynes, 1930). According to Keynes (1936), direct government control of investment is essential since market forces may lead a nation to disastrous economic state if left uncontrolled.

In their seminal paper on financial liberalization in developing countries, Mckinnon (1993) and Shaw (1973) explains that, financial liberalization can have an upward effect on interest rates, which would further lure parties to make more investments and savings. Also, they posit that real interest rates, if kept below the market equilibrium can increase the demand for investment but not the actual investment. In highly government controlled markets, capital supply of banking sector is limited and banks have only specialized

credit activities, people have to finance their investment projects by themselves or have to go to the informal sector where interest rates are often usurious (Shaw, 1973; Mckinnon, 1973).

In the neoclassical model, liberalizing the capital account facilitates a more efficient international allocation of resources and produces all kinds of salubrious effects (Solow, 1956). Resources flow from capital-abundant developed countries, where the return to capital is low, to capital-scarce developing countries where the return to capital is high. Therefore, financial liberalization mobilizes savings and allocates capital to more productive uses, both of which help increase the amount of physical capital and its productivity which in turn increases economic growth.

#### **1.1.4 Real Estate Firms in Kenya**

The real estate sector in Kenya has seen a boom that begun somewhere in the mid to late 2000's because the property market is responding to demand that has been created by the expanding middle class with disposable income and in which people have become able to service their mortgages (Abacus.com, 2014). In Nairobi, the capital and largest city of Kenya, there is one of the largest expatriate communities in the continent due to the significant number of multinationals who have chosen Nairobi as either their African hub or East and Central African hub (Turner, 2013). The rebirth of property development in Nairobi has attracted global attention. In its 2012 Wealth Report, real estate management company, Knight Frank, ranked Nairobi as the fastest-growing real estate market in the world, outpacing cities like Miami and Monaco (Turner, 2013). Real estate prices in Nairobi rose 25 percent between January and December 2011. Nairobi was also voted as

one of the top 10 cities to watch by global real estate firm, Jones Lang LaSalle, out of 150 cities globally (Turner, 2013).

According to IMF (2004), monetary policy conditions have been an important factor behind house price inflation and deflation. Economic commentators have long attributed movements of housing prices to mortgage market conditions. Despite this widespread conviction, the empirical evidence on the importance of financial factors on house price dynamics is relatively thin and often difficult to interpret. However, interest rates (or the user cost of capital) have been found to have a statistically significant, though quantitatively limited impact on house prices (McGibany & Nourzad, 2004).

Tsatsaronis and Zhu (2004), IMF (2004), and Ott (2006) have explored the role of bank credit in house price and generally agree that, credit quantity is statistically significant. Muellbauer & Murphy (1997) argued that financial liberalization of mortgage markets leads to notable shifts in house price behaviour and real interest rates is relatively an important factor. Muthaura (2012) empirically established that the relationship between financial liberalisation and the real estate sector occur on the basis of real interest rates, log of GDP and log of real housing prices. The monetary policy conditions have been a factor in deflation and inflation of house prices.

Wanyama, Yegon & Kemboi (2014) stated that economists mainly state that shifts in housing prices are caused by conditions in the mortgage market. Despite this perception, Ganoulis & Giuliadori (2009) empirically evidenced that a weak link between house prices and financial conditions, and stated that it is difficult to be explained. Researchers

have mainly focused on the interest rate avenues in as far as house price dynamics are concerned. The use of cost capital on interest rates is statistically relevant but has a quantitatively restricted the effect on the price of houses (Ganoulis&Giuliodori, 2009).

## **1.2 Research Problem**

On a more generalized level, Wanyama, Yegon & Kemboi (2014) attempted to identify the effect of financial liberalization on the general economic growth. Their results indicated that there was a prominent relationship between economic growth and the size of the financial services sector. In their study Onwumere, Okore&Ibe (2012) noted that interest rate liberalization had negative non-significant effect on savings and negative significant effect on investment in Nigeria. Thus, interest rate liberalization, though a good policy was counterproductive in Nigeria.

Kirungu (2013) identified that the Kenyan real estate price is influenced by interest rates. In another research conducted by Ndahiriwe (2008), it was identified that irrespective of house sizes, during the period of financial liberalisation, interest rateshocks had relatively stronger effects on house price inflation. However, given that the size of these effects was nearly negligible, the result indicates that house prices are exogenous, and at least, is not driven by monetary policy shocks.

IMF (2004), Tsatsaonis & Zhu (2004), Lecat & Mesonnier and Ott (2006), amongst other researchers, have researched on the effect of bank credit on house price models. The studies explore various countries. The studies revealed that credit quantities variables were statistically relevant. The creation of alternative measures of excess liquidity of

credit availability has not been quite successful empirically. This is aside from raising more measurement and methodological issues.

Theoretically, there is no well-defined conceptual framework which satisfactorily explains the effect of financial liberalization and real estate (Ganoulis & Giuliadori, 2009). On one side theoretical discussions on overall financial system and structural changes in mortgage markets are inconclusive; on the other side, there is a light weight placed by the empirical literature in identifying any changes over a period linking financial liberalization and house price dynamics (Ott, 2006). While some researchers state that there is a relationship between financial liberalization, their findings are inconclusive. They do not indicate the direction or the strength of the relationship. The question that begs and is the subject for this study is what is the effect of financial liberalization on real estate prices in Kenya?

### **1.3 Objective of the Study**

To establish the effect of financial liberalization on real estate prices in Kenya.

#### **1.3.1 Specific Objective of the Study**

To establish the influence of Central Bank Rate (CBR), Commercial Bank Lending Rates and Inflation Rates on the real estate prices in Kenya.

### **1.4 Value of the Study**

Policy Makers and Investment Advisors: The results of the study can be used by company managers and investors to identify the empirical relationship between financial liberalisation and the real estate market, especially on grounds of house prices.

Executives in companies and investors can therefore use the information to make informed decisions relating to the real estate in Kenya in as far as pricing houses and real estate property is concerned. Also, investment advisors can draw information on the effect of financial liberalization on real estate prices. To consumers, the research can assist them to keep up with the changing trends of the real estate market.

Academia and Regulators: Additionally, the research can be included in, the body of literatures in relation to the effect of financial liberalisation on the real estate market of housing prices. To such an extent, future researchers and students on this and related topics can obtain information for the study. The study can also benefit the Kenyan government and regulatory bodies. It can help the regulators to understand the concepts of financial liberalisation and economic development in the Kenyan context and how it affects real estate prices in Kenya.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

A considerable amount of literature is available on the property market in Kenya. Different researchers and writers have written about different concepts that affect the property market. This chapter gives an insight on the various theories that affect real estate investment and interest rates.

#### **2.2 Theoretical Review**

According to Kumerov (2000) theory allows a reader to make sense of complex situations by directing attention to key issues and by guiding methods of analysis.

##### **2.2.1 Asset Pricing Theory**

Grabel (2003) indicates that “this theory addresses the questions as to why certain capital assets have higher expected returns than others and why the expected returns are different at different points in time.” Asset valuation applies to equity (including REITs or other forms of real estate ownership), debt (including mortgage-backed securities or other debt instruments collateralized by real estate), options, and loan servicing rights. Kummerow (2000) further states that in real estate, there is no CAPM-like approach to tell one how much ROE should exceed the expected return on some type of debt. This is because it is hard to measure a unique property’s returns.

### **2.2.2 Keynesian Economic Theory**

Keynes (1930), in his *Treatise on Money*, argued for the importance of the banking sector in economic growth. He suggested that bank credit "is the pavement along which production travels, and the bankers if they knew their duty, would provide the transport facilities to just the extent that is required in order that the productive powers of the community can be employed at their full capacity".

Keynesian economics focuses on immediate results in economic theories. Policies focus on the short-term needs and how economic policies can make instant corrections to a nation's economy. Also, the government is seen as the only force to end financial and economic downturns through monetary or fiscal policies, and providing aggregate demand to increase the level of economic output. Keynes (1936) later supported an alternative structure that includes direct government control of investment and advanced that financial deepening can occur due to an expansion in government expenditure. Since higher interest rates lower private investment, an increase in government expenditure promotes investments and reduces private investments concurrently.

### **2.2.3 McKinnon and Shaw theory**

McKinnon (1973) and Shaw (1973) argued that if real interest rates are kept below the market equilibrium can increase the demand for investment but not the actual investment. Low interest rates are insufficient to generate savings; it can even reduce savings especially if substitution effects dominate the income effect for households. On the other hand, low rates raise the expected profitability of investment projects by raising the net present value of future earnings from the project. The theory rests on the assumptions that saving is an

increasing function of real rate of interest on deposits and real rate of growth in output and that investment is a decreasing function of the real loan rate of interest and an increasing function of the growth rate.

The theory posits that the nominal interest rate should be administratively fixed. They advance that emerging economies are fragmented; hence there is a greater likelihood of having investments that are less productive. Capital accumulation is discouraged by the fact that for a high inflation rate, nominal interest rates are set too low and thus real interest rates could be negative. As capital supply of banking sector is limited and banks have only specialized credit activities, people have to finance their investment projects by themselves or have to go to the informal sector where interest rates are often usurious.

### **2.3 Factors that Influence Real Estate Price**

Some factors that have been found to be crucial in influencing mortgage prices or real estate prices include; Central bank rate (CBR), commercial bank lending rates, and amount of credit advanced for real estate purposes. The lending rates at the commercial banks have a direct effect on the mortgage as they affect the interest rates, which is a contributory factor to the mortgage. The central bank affects the mortgage through its policies. Inflation affects the whole economy, which includes interest rates.

#### **2.3.1 Central Bank Rate (CBR)**

The aim is to achieve low inflation and to sustain the value of the Kenyan shilling. As postulated by Ngugi (2001), a low and stable inflation rate together with adequate liquidity facilitates higher levels of domestic savings and private investments therefore leading to economic growth. However, as Wedeya (2013) points out, the Central Bank

cannot influence inflation directly but can do this by use of tools such as interest rate adjustments (Central Bank Rate), open market operations, standing facilities (as a lender of the last resort), foreign market operations, required reserves, supervision and licensing of commercial banks and communication of bank decisions.

Central Bank Rate is meant to change the cost of the money and hence influence the commercial bank interest rates in the market. Interest rates influence the target variables through other intermediate targets including credit (loans), exchange rates and inflation forecasts, as noted by Kibe (2003). Though Central Bank of Kenya supports the determination of interest rates by market forces, it expects the interest spread to be narrowed by market discipline especially given the relative macroeconomic stability since 2000, drop in level of nonperforming loans and reduced cash reserve requirement has also been reduced (Wedeya, 2013). With these improvements, institutions are expected to respond by reducing their interest rate spreads; but the spreads remain relatively high.

### **2.3.2 Commercial Bank Lending Rates**

According to findings by Frida (2011) interbank rate, competition among interbank rate, credit risk premium due to various risks, (including interest risk, credit risk, foreign exchange risk and legal risk) demand and supply as well as industry trend also influenced determination of lending rate of commercial banks. According to her findings, fiscal policy actions saw an increase in Treasury bills rates and high inflationary pressure that called for tightening of monetary policy. As a result banks increased their lending rates

but were reluctant to reduce the lending rate when the Treasury bill rate came down because of the declining income from loans

According to Ngugi (2001) interest spread increased because of yet-to-be gained efficiency and high intermediate costs. Increase in spreading in the post liberalization periods was attributed to the failure to meet the prerequisites for successful financial reforms, the lag in adopting indirect monetary policy tools and reforming the legal system and bank's efforts to maintain threatened profit margins from increasing credit risk as the proportion of non-17 performing loans. She attributed the high non-performing loans to poor business environment and distress borrowing, owing to the lack of alternative sourcing for credit when banks increased the lending rate and the legal system in enforcement of financial contracts.

### **2.3.3 Inflation**

The inflationary expectations of consumers and businesses can have a major effect on interest rates. Cummings (2007) indicated that lenders who foresee rising prices for goods and services do charge higher interest rates in order to compensate for the likelihood that their loans are to be repaid with devalued currencies. At the same time potential borrowers, who are also anticipating rising inflation rates, are more likely to accept higher-interest loans because they expect to be able to pay them back with devalued currencies. Cummings (2007) further states that the anticipation of rising inflation also stimulates consumers and businesses to buy as soon as possible in order to beat the expected price increases, placing more of a demand on credit which, in turn, drives interest rates upward.

The Financial Web (2012) states inflation has an unfavourable effect on the demand for houses financed by mortgages and that fluctuations in the rate of inflation tend to lead to corresponding fluctuations in construction activity rests on the following a few considerations. Inflation and the anticipation of its continuation tend to raise interest rates, including mortgage rates, by an "inflation premium" needed to compensate the lender for the anticipated erosion in the purchasing power of his claim (Kirungu, 2013). The rise in interest in turn raises the annual payment needed to acquire a house of given value.

This higher interest rate and resulting annual payment do not per se change the real cost of carrying a house in that they are offset by the gain to the debtor resulting from the gradual decline in the purchasing power of his debt and of his annual payment (Cimmunigs, 2007). Nonetheless the rise in interest rates resulting from inflation has an important effect on the time profile of the stream of annual payments, expressed in terms of constant purchasing power.

#### **2.3.4 Disposable Income**

Fraser, Hoesli & McAlevey (2007) find results suggest that while real house prices have an along-run relationship with real income in all three economies, the responsiveness of house prices to innovations in income vary over both time and markets depending on whether the income disturbances are viewed as permanent or temporary. Falls in interest rates reduce the monthly cost of mortgage repayments. This leaves householders with more disposable income and should cause a rise in consumer spending.

Coporeal & Gil-Alana (2010) investigated the relationship between US disposable personal income (DPI) and house price index (HPI) during the last twenty years applying fractional integration and long-range dependence techniques to monthly data from January 1991 to July 2010. The empirical findings indicate that the stochastic properties of the two series are such that integration cannot hold between them, as mean reversion occurs in the case of DPI but not of HPI. Also, recursive analysis shows that the estimated fractional parameter is relatively stable over time for DPI whilst it increases throughout the sample for HPI.

#### **2.4 Empirical Review**

Through their study- theoretical and empirical review of the financial sector reform of 1986- of the effect of interest rate liberalization on savings and investment in Nigeria, Onwumere, Okore & Ibe (2012) identified that liberalized lending rate had a negative significant effect on investment. Thus, interest rate liberalization had a negative non-significant effect on savings and negative significant effect on investment. Hence, high interest rate following liberalization did not cause savings and investment to increase in Nigeria.

In a study conducted by Muthaura (2012), the use of the user cost model established that most banks had fixed mortgage rates between the periods of 2007 to 2010 as an outcome of stable interest rates; house prices were also stable during this period. However due to spiking interest rates in 2011, most banks had to hedge risk by adopting floating rates. These further indicated that with inflation being high, interest rates rising and technological advancement demanding newer technology every day, banks are forced to

respond to these changes which jeopardize investor confidence, as they try to hedge against credit risk.

Using the ex-post facto research design to study financial liberalization and house price dynamics in Europe, Ganoulis & Giuliadori (2009) identified that mortgage contracts make reference to more elements than the interest rate, all of which may affect the “effective” cost of mortgage debt and quantity constraints are not uncommon in this market. When modelling house price dynamics, one needs to, first, consider the credit quantity variables alongside the interest rate and, second, allow for differences in the short and long run effects of the two types of variables. Finally, one should consider the possibility that these relations may have changed over time as financial market liberalisation has progressed

Bouchellal (2010) using a unique data set from the French credit market, a sample of 277 French firms between the years of 2006 and 2010, studied the effect of the number of lending relationship variable has on the credit margin. He found the existence of a negative relationship between margins applied to credit being supplied to firms, and the level of competition between credit institutions. The results suggest that multiple bank relationships constitute an effective solution for the companies in order to lower their financing costs and also to avoid hold-up problems.

Wanyama, Yegon & Kemboi (2014), through Engle-Granger two-step procedure of Johansen procedure, studied the effect of financial sector liberalization on the finance – growth nexus in Kenya by comparing a list of selected indicators of financial

development using data covering pre - reform and post - reform periods. Ratio of Liquid Liabilities to GDP(MGDP), Ratio of Private Credit to GDP (PGDP), and Ratio of Investment to GDP (IGDP), Ratio of Private Credit to Total Domestic credit (PTC), openness of the economy (OP) and Government consumption as a ratio to GDP (GVC), influence economic growth negatively. The long-run negative influence of PTC and OP are however insignificant. Therefore the long-run significant determinants of financial development include MGDP,PGDP, IGDP, and GVC. PTC, OP, and Du have been found to have insignificant effect on financial development.

Using quarterly data from 1998:Q1 to 2009:Q4 and monthly data from July 2005 to February 2010, Xu & Chen (2012) examined the effect of key monetary policy variables, including long-term benchmark bank loan long-term rate, money supply growth, and mortgage credit policy indicator, on the home price growth behaviour in China. Empirical results consistently demonstrate that declining interest rates, faster money supply growth and loosening mortgage down payment policy tend to accelerate the subsequent home price growth, while rising interest rates, slower money supply growth and tightening mortgage down payment policy tend to decelerate the subsequent home price growth.

## **2.5 Summary of Literature Review**

The theoretical literatures link financial liberalisation with better life for a country's citizenry. Also, empirical literature reveals that financial liberalisation affects the well-being of citizenry. Specifically, some literatures have linked financial liberalization with better living standards and improved disposable income, better interest rates, inflation,

and improved banking sector competition hence performance. This enhances access of financial resources including credit and mortgage loans. However, studies have not linked the direction and the strength of the relationship between these variables with real estate prices before and after financial liberalization. In the Kenyan context, while the role of CBK is evident through policy formation and regulation of interest rates, as well as evidence of increased commercial banks, studies generally indicate that there has been a steady increase in the demand for property in Kenya over time, but no direct link to real estate prices.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology that was used to carry out the study. The chapter considered in detail the methods that were used to collect any secondary data required in the study. In this chapter, the researcher discusses the research design, target population, data collection and sample. The researcher also discusses how this data was analysed giving details of any models or statistical tools that were used in the analysis with reasons as to why these particular models or statistical tools were used.

#### **3.2 Research Design**

Borget *al* (2007) describe a research design as a set of decisions that make up the master plan specifying the methods and procedures for collecting and analysing the needed information. Research design guides a researcher as regards the arrangement of methods, tools and relevant resources to collect data and analyse it to come up to study conclusions.

This study sought to investigate and substantiate the effects of Financial Liberalization to real estate prices in Kenya. This study followed a descriptive research design. Descriptive research portrays an accurate profile of persons, events, or situations (Groves, 2007). Descriptive research design is appropriate as the study seeks to describe the relationship between the study variables.

### **3.3 Target Population**

This is the entire group of people, events or things of interest that the researcher does investigate (Borg *et al.*,2007). The target population was all banks in Kenya offering mortgage financing according to (Central Bank of Kenya survey 2010). This study also adapted a census study of all the properties in the Hass Property Index.In a census study, a researcher studies the entire population (Borg *et al* 2007).

The study targets the 44 commercial banks in Kenya.For the purpose of this study, the data was obtained for a period of 13 years, spanningbetween 2000 – 2013years.

### **3.4 Data Collection**

Data collection is gathering empirical evidence in order to gain new insights about a situation and answer questions that prompt undertaking of the research (Flick, 2009). Secondary data wasobtained from the Hass Property Index and from the Central Bank of Kenya Monetary Policy Committee data base.

For the purpose of this study, the researcher obtained the data for the study variables including Real Estate Price or Mortgage Rate (Dependent Variable), and Financial liberalization variables (Independent Variables) such as; Central Bank rate, Inflation, Number of commercial banks, and the Disposable income from secondary data sources aforementioned.

### 3.5 Data Analysis

According to Mugenda (1999), data must be cleaned, coded and properly analysed in order to obtain a meaningful report. Secondary data from the Central Bank of Kenya (CBK) reports and library, and Hass Property Index was organized in spread sheets for the purpose of analysis. The data was then be analysed using Statistical Package for Social Sciences for data analysis (SPSS) to obtain various statistics, percentages, frequency distribution, means and standard deviation. The findings were organized in tables and charts, and then used to complete the study report and to answer the study question.

#### 3.5.1 Analytical Model

For the purpose of this study, the unit of analysis was the secondary data from the Central Bank of Kenya (CBK) reports and library, and Hass Property Index. The variables involved includes, Central Bank rate, inflation, commercial bank lending rates. The real estate price was measured using the Average Annual Hass Sales Index.

The study analytical model is depicted by the regression model:

$$Y=f(X) \quad (1)$$

$$Y = \alpha + \beta X_1 + \beta X_2 + \beta X_3 + \mu_i \quad (2)$$

Where; Y = Real Estate Price, measured by the Hass Composite Sales Index i.e. the Annual Hass Sales Index.

X = Independent variable (Financial Liberalization); whereby  $x = f(X_1, X_2, X_3)$

$X_1$  = Central Bank rate measured as average annual CBR,

$X_2$  = Commercial Bank Lending Rate, measured as Average annual lending rate

$X_3$  = Inflation rate, measured as average annual inflation

$\beta$  =Determinesthe relationship between the independent variable  $X_1$ and the dependent or Gradient/Slope of the regression measuring the amount of the change in  $Y$  associated with a unit change in  $X$ , while  $\mu_i$  – Normallydistributed error term.

### **3.5.2 Test of Significance**

This study seeks to establish the effect of financial liberalization on real estate prices.

The study used the inferential statistics such as The Pearson Product Moment - correlation coefficient  $R^2$ and the coefficient of determination  $R$  of the data set.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND REPRESENTATION OF FINDINGS**

#### **4.1 Introduction**

This chapter provides data analysis and the findings on the effect of financial liberalization on real estate prices in Kenya. The study was conducted as defined in the research methodology in order to address the set out study objective and the research question.

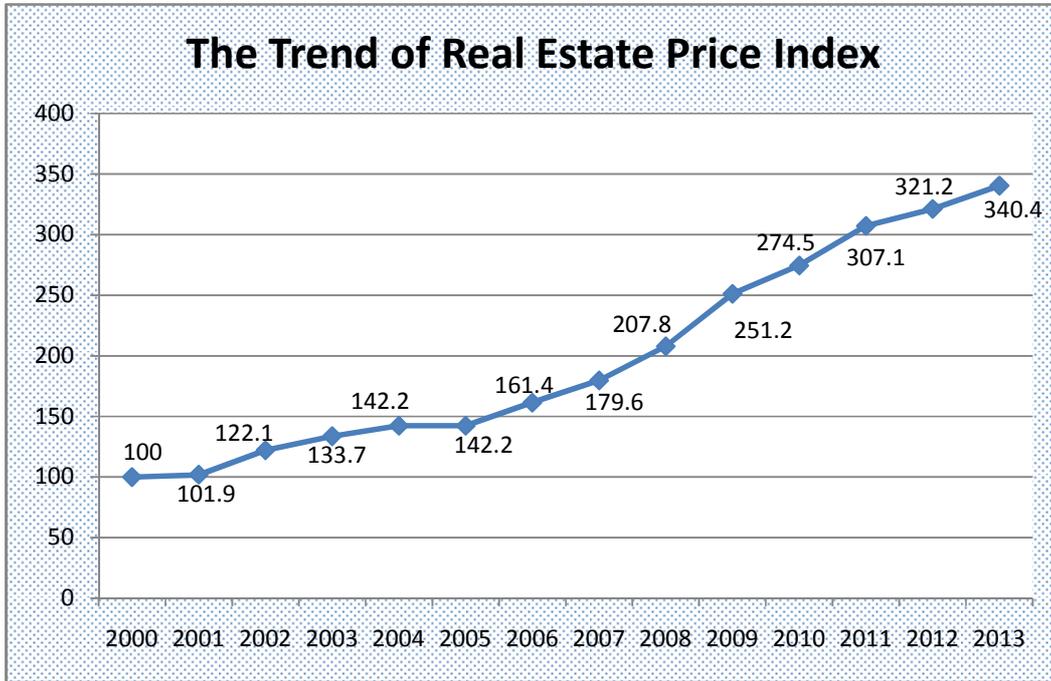
#### **4.2 Data Analysis and Presentation**

The obtained data spanned the period between years 2000 to 2013. The secondary data was organized in excel spread sheets and analyzed using SPSS version 20.

##### **4.2.1 Real Estate Prices**

The study sought to establish the trend of real estate prices in Kenya over the study period using the real estate index, and established the trend as depicted by figure 4.1 below. From the diagram, the findings reveal that real estate prices have been increasing each year throughout the period.

**Figure 4.1: The Trend of Real Estate Prices**



**Source: Hass Consult**

For the purposes of computing Hass Consult used the year 2000 as the base year and its equivalent index as 100. In the year 2001 the index rose to 101.9 in 2002 the price rose to 122.1 in 2003 it rose to 133.7 in 2004 it rose to 142.2, in 2005 it stood at 142.2, in 2006 it rose to 161.4, in 2007 it rose to 179.6, in 2008 it rose to 207.8, in 2009 it rose to 251.2, in 2010 it rose to 274.5, in 2011 it rose to 301.7, in 2012 it again rose to 321.2 and in 2013 to 340.4.

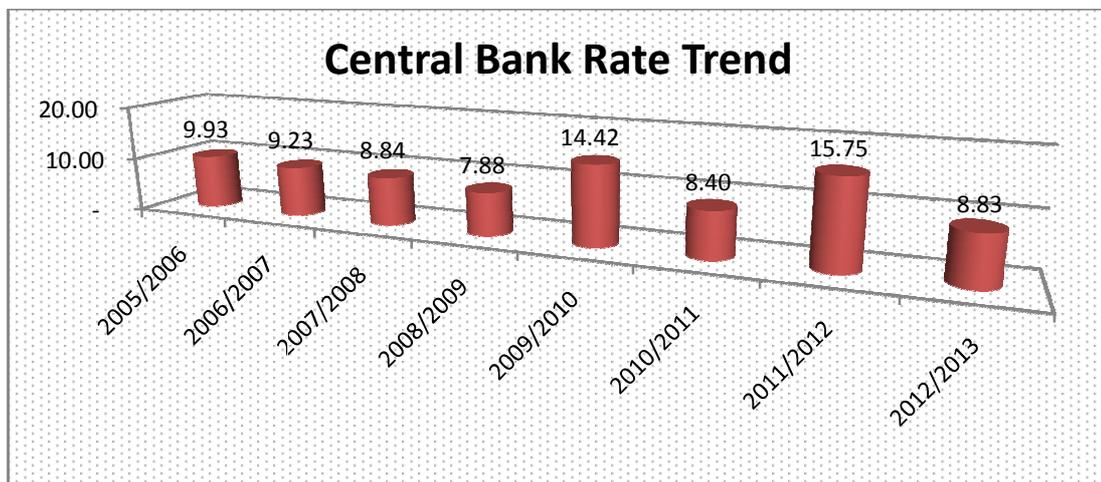
Notably the real estate prices experienced a growth spurt during the periods 2000-2001 and 2008-2009 as shown in Appendices 2. During the two periods, the prices witnessed 19.91% rise and 20.90% rise, after which they dropped immediately in the ensuing

period. Also, though not steady, real prices have grown at least each year. These findings concur with the findings of (Waithera, 2013) who established that Kenyan real estate prices had been rising over the years.

### 2.2.2 Central Bank Rate

The study sought to establish the trend of Central Bank Rate (CBK) over the study period. The results are shown in figure 4.2 below and appendix 1.

**Figure 4.2: Central Bank Rate Trend**



**Source: Central Bank of Kenya**

The study findings reveal that central bank rate has been varied across the period. The annual average rate as of the period 2005/2006 was 9.93%. It slightly dropped to 9.23% during the period 2006/2007, and further dropped during the period 2007/2008 and 2008/2009 to 8.84% and 7.88% respectively. The rate was raised and it averaged at 14.42% during the period 2009/2010; a period which saw a great rise in real estate prices

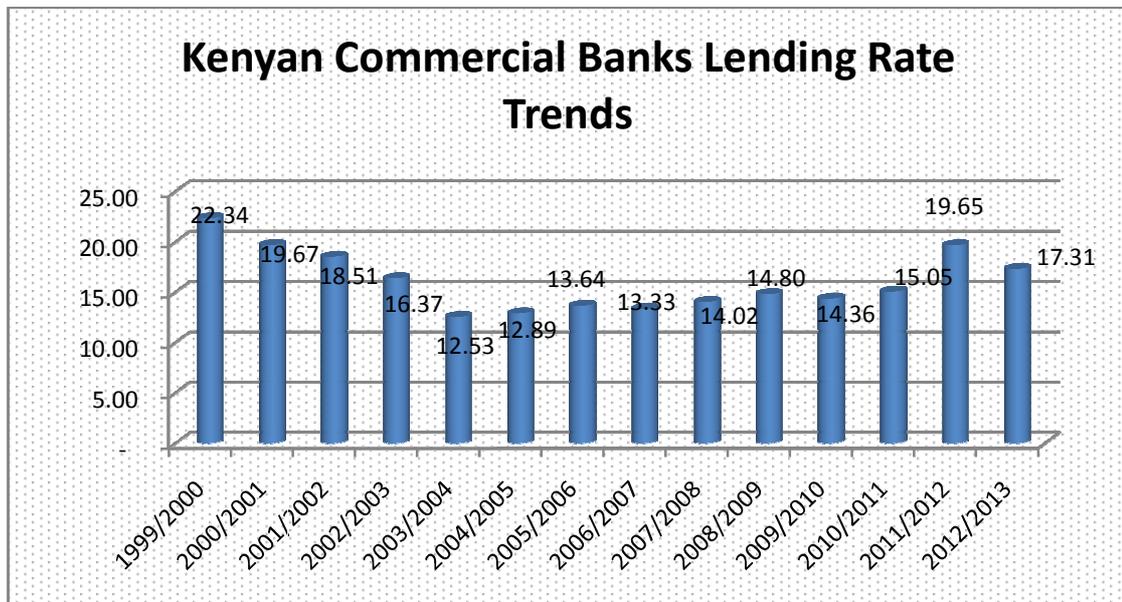
of 20.90%. The rate was lowered to 8.40% in the year 2010/2011, and rose again to 15.75% over the period 2011/2012, and lowered to 8.83% during the period 2012/2013.

The study findings agreed with the conclusions of (Ganoulis & Giuliodori, 2009) who noted that most governments use central bank rate or its equivalents to control commercial bank lending activities as well as to control money supply in the market. To this end, commercial banks do vary the CBR although CBR does not vary greatly as compared to other macro-economic variables like inflation and lending rates (Gabel, 2003).

#### 4.2.3 Commercial Bank Lending Rate

The study sought to establish the trends of the commercial bank lending rates during the study period. The data findings are presented in Figure 4.3 below and appendix I.

**Figure 4.3: Trends of Kenya Commercial Lending Rate**



Source: Central Bank of Kenya

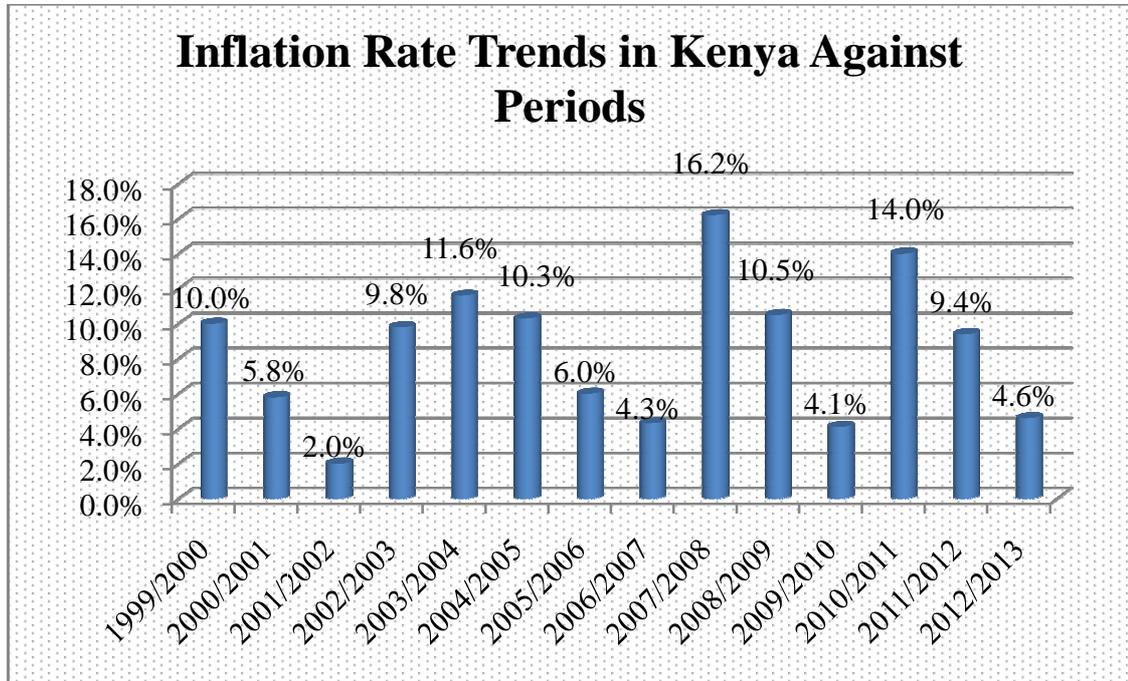
The study established that commercial bank lending rate fluctuated over the period. The average commercial bank lending rate stood at 22.34% during the period 1999/2000. Since then, the rate decreased through to 12.53% during the period 2003/2004 having averaged at 19.67%, 18.51% and 16.37% during the periods 2000/2001, 2001/2002, and 2002/2003 respectively. In the period 2004/2005, the average rate reduced rose slightly to 12.89% and to 13.64% in the period 2005/2006. The rate increased to 13.33%, and reached 14.02% and 14.80 respectively during the periods 2006/2007, 2007/2008, and 2008/2009. The rate dropped slightly to 14.36% during the period 2009/2010 and rapidly rose to 15.05% and to 19.65% through the periods 1010/2011 and 2011/2012 respectively, after which the rate reduced to 17.31% during the period 2012/2013.

These findings agreed with the findings of Moronya (2013) who noted that Kenyan Commercial lending rates had been fluctuating throughout the study period 2003 to 2013. Major factors that cause lending rates to fluctuate includes; shifts in regulator rates, and costs of extending credit including the riskiness of the credit borrowers (Kibe, 2003).

#### **4.2.4 Inflation Rates**

The study sought to establish the trend of inflation rates in Kenya over the study period. The data results are shown in figure 4.4 below and in appendix 1. The study results shows that the average annual inflation has been fluctuating from one period to another as shown by the graph depicted in figure 4.4.

**Figure 4.4: Inflation Rate Fluctuations**



**Source: Central Bank of Kenya**

The inflation rate averaged between 10% during the period 1999/2000. It drop to 5.8% and then to 2% during the periods 2000/2001 and 2001/2002 respectively. Then, the inflation increased to average at 9.8%and to 11.6% during the period 2002/2003 and 2003/2004. The rate dropped again from 10.3% to 4.3% through the period 2004/2005 to 2006/2007 having averaged at 6.0% over the period 2005/2006. Then, the rate shot-up to 16.2% during the period 2007/2008, after which it fell to 4.1% through the period 2009/2010 having averaged at 10.5% during the period 2008/2009. Ones more, the rate shot-up to average at 14.0% during the period 2010/2011but dropped but dropped to 9.4% and yet again to 4.6% during the periods 2011/2012 and 2012/2013 respectively.

The findings concurred with the conclusions of (Wanyama, Yegon & Kemboi, 2014) who observed that inflation rate fluctuates as various associated macro-economic and micro-economic variables fluctuate. Also, different regimes are associated with inflation fluctuations in an economy (Tsatsaronis & Zhu, 2004).

#### 4.2.5 Regression Analysis

In order to establish the relationship between the dependent variable and the independent variables, the dependent variable (Real Estate Prices Index) was regressed against the independent variables CBR, Commercial Bank Lending Rates and Inflation Rates. The analysis was conducted using statistical package for social sciences (SPSS) to determine the coefficients for the multiple regression model and the inferential statistics; the Pearson Product Moment - correlation coefficient R Square and the coefficient of determination R of the data set for the study. The findings were as shown in the table 4.1 below.

**Table 4.1 Model Relationship Statistics Summary**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.798 <sup>a</sup>	.637	.364	53.453	1.302
a. Predictors: (Constant), Inflation Rate, Commercial Banks Lending Rate, CBR b. Dependent Variable: Real Estate Index					

#### Source: Research Findings

In order to explain the percentage of variation in the dependent variable (Real Estate Price) that is explained by the independent variables, the researcher used coefficient of determination obtained via regression analysis and presented in table 4.1. Coefficient of

determination explains the extent to which changes in the dependent variable (Real Estate Prices) can be explained by the change in the independent variables or the percentage of variation in the dependent variable that is explained by all the variations in the three variables (CBR, Commercial Bank Lending Rates, and Inflation Rate). From the analysis, the independent variables (CBR, Commercial Bank Lending Rates, and Inflation Rate) in this study contributed to 63.7% of the variation in Real Estate Prices depicted by the adjusted R Square of 0.637, meaning that 37.3% of the change in real estate prices is caused by other factors in the market. Also, the relationship is strong as coefficient of determination was 0.798.

The study conducted an Analysis of Variance, in order to test the significance of the model. The findings were as shown in table 4.2 below:

**Table 4.2: Analyses of Variance**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20028.525	3	6676.175	12.337	.009 <sup>b</sup>
	Residual	11428.855	4	2857.214		
	Total	31457.380	7			
a. Dependent Variable: Real Estate Index						
b. Predictors: (Constant), Inflation Rate, Commercial Banks Lending Rate, CBR						

**Source: Research Findings**

From the ANOVAs results, the probability value of 0.009 was obtained implying that the regression model was significant in predicting the relationship between Real Estate Prices and the predictor variables as it was less than  $\alpha=0.05$ . By use of the F-table, the F14; 3;

0.05 tabulation was 8.74 which was less than  $F = 12.337$  determined through analysis and shown in table 4.2 above which indicated that the model was significant.

**Table 4.3: Model Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	120.182	149.400		.804	.466
CBR	3.547	8.502	.157	.417	.001
Commercial Banks Lending Rate	27.041	11.195	.868	2.415	.756
Inflation Rate	.048	4.619	.003	.010	.448

a. Dependent Variable: Real Estate Index

**Source: Research Findings**

The researcher conducted a regression analysis so as to determine how CBR, Commercial Bank Lending Rates and Inflation (independent variables) contribute to Real Estate Prices. The following regression equation was obtained:

$$\text{Real Estate Price Index } Y = 120.182 + 3.547X_1 + 2.041X_2 + 0.048X_3 + \mu e$$

From the regression model obtained above, holding all the other factors constant, the Real Estate Price index as measured by would be 120.182. A unit change in CBR holding the other factors constant would cause a rise in Real Estate Prices by 3.547. A unit change in current Commercial Bank Lending rates holding the other factors constant would cause a rise in Real Estate Prices by 2.041, while a unit change Inflation Rates while holding the other factors constant would cause a rise in Real Estate Prices by 0.048.

Notably, a change in CBR caused the highest influence on real estate prices followed by the inflation rates. Also, the obtained regression equation implied that there was a positive relationship between real estate prices and CBR, Lending Rate, and Inflation in Kenya.

The findings concurred with the conclusions Kirungu (2013) who established that the Kenyan real estate price is influenced by interest rates. Also, the study agreed with the findings of Ndahiriwe (2008) who posits that irrespective of house sizes, during the period of financial liberalisation, interest rate and inflation shocks had relatively stronger effects on house price. However, the study negated the conclusions of Onwumere, Okore & Ibe (2012) who noted that interest rate liberalization had negative non-significant effect on real estate investment pricing in Nigeria.

The analysis was undertaken at 5% confident level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the corresponding probability value obtained and  $\alpha=0.05$ . If the probability value was less than  $\alpha$  then the predictor variable was significant; otherwise it was not. Central bank rate (CBR) was significant, while Commercial Bank Lending Rate and Inflation Rate were insignificant as depicted by P-Values equal to 0.001, 0.756 and 0.448 respectively.

#### **4.3 Summary and Interpretation of the Findings**

The Kenyan real estate investments in has experienced growth for over the last decade. The study established that real estate prices have been rising throughout the study period. Notably the real estate prices experienced a growth spurt during the periods 2000-

2001 and 2008-2009 as shown in Appendices 2. During the two periods, the prices witnessed 19.91% rise and 20.90% rise, after which they dropped immediately in the ensuing period. Also, though not steadily, real estate prices have grown at least each year.

Central Bank Rates (CBR) has been altered throughout the study period. The annual average rate as of the period 2005/2006 was 9.93%. It slightly dropped to 9.23% during the period 2006/2007, and further dropped during the period 2007/2008 and 2008/2009 to 8.84% and 7.88% respectively. The rate was raised and it averaged at 14.42% during the period 2009/2010; a period which saw a great rise in real estate prices of 20.90%. The rate was lowered to 8.40% in the year 2010/2011, and rose again to 15.75% over the period 2011/2012, and lowered to 8.83% during the period 2012/2013.

Similarly, the study findings established that commercial bank lending rate has varied across the study period. Notably, the rate went down through the periods between 1999/2000 to 2003/2004 from 22.34% to 12.53%, having averaged at 19.67%, 18.51% and 16.37% during the periods 2000/2001, 2001/2002, and 2002/2003 respectively. Also, the rate rose to hit 19.65% in the year 2011/2012, but dropped slightly to average at 17.31% through the period 2002/2013.

Likewise, the study results established that inflation rates have fluctuated throughout the study period. Notably, the inflation rose quickly and declined slowly over the period. For instance, the rate averaged at 10.0% as of 1999/2000 and declined slowly to 2.0% by the period 2001/2002. It almost immediately rose to average at 9.8% in the next period then to 11.6% during the 2004/2005 period. During the ensuing period, it declined to average

at 10.3%, then to 6.05% and then to 4.3% during the 20006/2007 period. It then shot-up to 16.2% during the 2007/2008 period, but declined to 4.1% during the period 2009/2010 period. It rose again to reach 14.0% during the period 2010/2011 but went down through the period to average at 4.6% by 2012/2013.

Regression analysis results revealed that the independent variables (CBR, Commercial Bank Lending Rates, and Inflation Rate) in this study contributed to 63.7% of the variation in Real Estate Prices depicted by the adjusted R Square of 0.637, meaning that the whole 37.3% of the change in real estate prices is caused by other factors in the market. Therefore, although Coefficient of determination was equal to 0.798 depicts a strong positive relationship, Pearson Product Moment of correlation reveals that the independent variables have causation 63.7%; there are other factors that cause changes to the real estate price.

Through analysis of variance, the ANOVA results established a probability value of 0.009 implying that the regression model was statistically significant in predicting the relationship between Real Estate Prices and the predictor variables as it was less than  $\alpha=0.05$ . Also, by use of the F-table, at F14; 3; 0.05 tabulation was 8.74 which was less than  $F= 12.337$  determined through the analysis which indicated that the model was statistically significant.

The study further established that the relation between the dependent variable (Real Estate Prices) and the independent variables (CBR, Commercial Bank Lending Rates,

and Inflation Rates) can be expressed by the model below, which depicts that the four variables have a positive causation;

$$\text{Real Estate Price Index } Y = 120.182 + 3.547X_1 + 2.041X_2 + 0.048X_3 + \mu e$$

Also, the study noted that a change in CBR caused the highest influence on real estate prices followed by the inflation rates. The analysis was undertaken at 5% confident level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the corresponding probability value obtained and  $\alpha=0.05$ . If the probability value was less than  $\alpha$  then the predictor variable was significant; otherwise it was not. Central bank rate (CBR) was significant, while Commercial Bank Lending Rate and Inflation Rate were insignificant as depicted by P-Values equal to 0.001, 0.756 and 0.448 respectively.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary of all Chapters**

This chapter summarizes the methods and findings of the study. It also provides the conclusions and recommendations in relation to the study findings. This study sought to establish the effect of financial liberalization on real estate prices. Specifically, the study sought to establish the influence of Central Bank Rate (CBR), Commercial Bank Lending Rates and Inflation Rates on the Real Estate Prices in Kenya.

The study followed a descriptive research design and used primary data obtained from Central Bank of Kenya (CBR, Lending Rates, and Inflation rates) and Hass Consult (Real Estate Prices). The data was for since the year 2000-2013. The study used excelspread sheets to organize the data and SPSS to analyze the secondary data in order to establish the trends of each of the variables over the study period. The regression results established that CBR, lending rates, and inflation have a strong, positive relationship with real estate prices. Also, the study noted that a change in CBR caused the highest influence on real estate prices followed by the inflation rates. The influence by Central bank rate (CBR) was significant, while Commercial Bank Lending Rate and Inflation Rate were insignificant as depicted by P-Values equal to 0.001, 0.756 and 0.448 respectively.

#### **5.2 Conclusions**

This study concludes that changes in CBR, commercial bank lending rates and inflation positively influence the real estate prices. Therefore, financial liberalizations that

influence these variables would affect real estate prices in the direction of their change. If the regulator undertakes financial liberalization measures that cause a rise of CBR, Commercial bank lending rates, and inflation rates; the act would cause a rise in real estate prices.

However, although there is a strong and positive relationship between the Real Estate Prices and financial liberalization, the study established that changes in CBR, Commercial Bank Lending Rates and Inflation Rates only explains 63.76% of the change that occurs on real estate prices, meaning that there are couple of other variables that explains real estate price change equivalent to 27.3%. The study therefore concludes that factors, other than financial liberalization do influence real estate prices.

This study obtained P-Values equal to 0.001, 0.756 and 0.448 corresponding to CBR, Commercial bank lending rates, and Inflation respectively. Therefore, the study concludes that Central bank rate (CBR) is a significant predictor variable in the model, while Commercial Bank Lending Rate and Inflation Rate are insignificant as depicted predictor variables in the model. Further, the study concludes that the change in CBR would cause more change on real estate prices followed by inflation rate, and then Lending Rate. Actions that cause a rise or a fall on CBR would cause more impact on the real estate prices, than a rise or a fall in the other two variables.

### **5.3 Policy Recommendations**

The study has confirmed that the Central Bank of Kenya is very significant in enhancing the Financial Liberalization phenomena. In addition, the study has established that there

is a strong positive relationship between financial liberalization and real estate prices. Also, change in CBR (which has been established to be a significant predictor variable in the model) causes a greater change in real estate prices greatly followed by inflation and lending rates (which were found to be insignificant predictor variables in the model).

Consequently, this study calls upon for regulatory measures on the CBR, Lending Rates and Inflation Rates. Policy makers should come up with regulatory policies that can regulate the CBR, Lending Rates and Inflation Rates in an appropriate manner. The institutions charged with financial sector regulation should be capacitated with all the necessary support they need in order to execute the mandate of regulating CBR, Lending Rates and Inflation Rates.

The study findings also established that real estate prices increased rapidly during the periods 2007/2008 and 2008/2009 20.90%, whilst the two previous period growths was 15.67% and 11.29%, a factor that may be attributable to a post-election violence phenomena that rocked the country following the disputed presidential results. This study therefore recommends that there is need for policy makers to come up with policies that ensure that the election code of conduct and ethics are upheld during elections.

#### **5.4 Limitations of the Study**

The study utilized secondary data, which had already been obtained and in the public domain, unlike the primary data which is first-hand information. Secondary data is criticized of likelihood of being obsolete. Nonetheless, the secondary data was tested for

precision and remained relevant since it reflected current macroeconomic conditions and financial soundness in the republic of Kenya.

Also, possible errors in the measurement of the data by CBK officials would possibly be impounded in the study results. However, CBK was deemed to be a credible institution and such errors may not cause a fundamental effect on the study results.

Further, the study was done within a short period of time of four months. The fact that study was hurried would not have allowed the researcher to consider more variables and to measure more phenomenon related to the study variables. However, the researcher gave the study maximum attention by minimizing possible interruptions during the study period.

In addition, the fact that the researcher had to conduct the study in conjunction with official duty at place of work, the researcher was overwhelmed and may have failed to note some intricate details concerning the study. However, the researcher ensured to get a third party to proof-read the document on his behalf. Furthermore, the researcher was guided by the University's resourceful team of academic professionals throughout the study process.

### **5.5 Suggestions for Further Studies**

The researcher recommends that a comparative study can be carried out to establish whether financial liberalization in other countries (economies) do impact real estate prices. The results of such results are essential for comparison purposes as they can

provide experience from elsewhere and provide concrete facts upon which reliable conclusions can be made.

Since economic real estate prices are not affected by CBR, Inflation and Interest rates only as evidenced by the study findings (they influence 63.7% of the change in real estate prices) the study recommends that further studies should be done to incorporate other factors that influence the real estate prices.

Also, the study recommends that future studies can be conducted to find out the relevant regulatory and policy issues that should be developed by regulatory policy makers in order to appropriately regulate the financial liberalization in the country.

Moreover, the study recommends that further studies should be conducted seeking to establish the impact of financial liberalization on future real estate prices.

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## APPENDICES

### Appendix II: Real Estate Prices, X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>

Year	Real Estate Prices (For Sale Asking Prices)	INDEX 2000 = 100	CBR	Commercial Banks Lending Rate	Inflation Rate
2000	8,677,056.78	100.00	-	22.34	10.00
2001	7,300,852.00	101.90	-	19.67	5.80
2002	869,788.75	122.10	-	18.51	2.00
2003	889,435.73	133.70	-	16.37	9.80
2004	932,523.06	142.20	-	12.53	11.60
2005	1,053,898.55	142.20	-	12.89	10.30
2006	1,187,809.42	161.40	9.93	13.64	6.00
2007	1,464,563.21	179.60	9.23	13.33	4.30
2008	1,606,010.07	207.80	8.84	14.02	16.20
2009	1,846,725.61	251.20	7.88	14.80	10.50
2010	1,871,996.78	274.50	14.42	14.36	4.10
2011	2,052,906.01	307.10	8.40	15.05	14.00
2012	2,065,595.81	321.20	15.75	19.65	9.40
2013	24,401,312.29	340.40	8.83	17.31	4.60

Source: Hass Consult and Central Bank of Kenya

## Appendix II: Real Estate Growth

<b>Year</b>	<b>Graph of Real Estate Prices (For Sale Asking Prices in Kshs.)</b>	<b>Change (%)</b>
2000	7,168,007.05	
2001	7,300,852.00	1.85%
2002	8,754,747.85	19.91%
2003	9,582,503.69	9.45%
2004	10,194,404.50	6.39%
2005	10,664,861.99	4.61%
2006	11,569,152.65	8.48%
2007	12,875,039.22	11.29%
2008	14,892,006.66	15.67%
2009	18,003,710.00	20.90%
2010	19,672,606.09	9.27%
2011	22,014,617.08	11.90%
2012	23,022,291.57	4.58%
2013	24,401,312.29	5.99%

**Source: Hass Consult**