THE EFFECT OF INTEREST RATES AND ECONOMIC GROWTH ON MORTGAGE UPTAKE IN BANKING INSTITUTIONS IN KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for a degree at any other university for examination.

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This research proposal has been submitted for examination with my approval as the University supervisor.

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DEDICATION

This research paper is dedicated to my late father and mother for their love and unwavering support.

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LIST OF ABBREVIATIONS

ARM - Adjustable Rate Mortgages

CBK - Central Bank of Kenya

GDP - Gross Domestic Product

GNP - Gross National Product

KBA - Kenya Bankers Association

M1 - Money Supply

M2 - Savings and Deposits

NI - National income

NPL - Non Performing Loan

NSE - Nairobi Securities Exchange

UK - United Kingdom

ABSTRACT

Mortgage lending is an important mechanism for increasing financial development, financial stability, and financial inclusion in emerging economies at the same time, providing that the development of housing price bubbles can be avoided. Mortgage as a tool reduces level of risk and interest rate in the economy and enhances positive economic growth. The objective of this study is to examine the effect of interest rates and economic growth on mortgage uptake in banking institutions in Kenya. The study adopted a quantitative research design. The population of this study consisted of the 44 banking institutions, which offer mortgage financing in Kenya comprising of 43 commercial banks, and one-mortgage finance institutions. Data for this study was collected from secondary sources. Secondary data on mortgage interest rates and mortgage uptake in banking institutions in Kenya was retrieved from the Central Bank of Kenya banking supervision reports. Secondary data on economic growth was retrieved from the Kenya National Bureau of Statistics for a period of 10 years from 2006 – 2015. The data collected was coded using Microsoft Excel and the computer based Statistical Package for Social Sciences and then analyzed using regression and correlation analysis. The study findings found an insignificant positive relationship between mortgage interest rates, economic performance inflation and mortgage uptake but a negative and insignificant relationship between credit risk and mortgage uptake while money supply had a positive and significant relationship with mortgage uptake in banking institutions in Kenya. The study concludes that there is a direct relationship between mortgage interest rates, economic performance and inflation in banking institutions in Kenya and that credit risk has an inverse effect on mortgage uptake. The study also concluded that money supply has a direct relationship with mortgage uptake.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Mortgage lending is an important mechanism for increasing financial development, financial stability, and financial inclusion in emerging economies at the same time, providing that the development of housing price bubbles can be avoided (Morgan & Zhang, 2015). Mortgage lending is widely used to facilitate business investment and housing finance and it could be very useful measure to solve urgent problem arising in credit markets of transition countries through, security of loans, reliable information about borrowers and enforcement of contracts (Tsvihun, 2000). Mortgages perform a number of valuable functions in emerging economies and its use improve housing affordability, increase the flow of funds to the housing sector and better allocate the risks inherent in housing finance (World Bank, 2011).

Mortgage as a source of housing financing is very important for transition economies from social point, where the part of state investment into the sector dramatically dropped and supply of housing reduced (Tsvihun, 2000). Mortgage finance plays a significant role in the development of the economy and in enabling people to be homeowners through provision of mortgages (Ngugi & Njori, 2013). Mortgage lending may actually contribute to financial stability since mortgage loans have different risk properties from other bank assets, e.g., commercial loans, so having some share of mortgage loans in a bank's portfolio tends to diversify the risk of that portfolio. Increased mortgage lending can be considered a form of financial inclusion, in the sense that a greater number of mortgage loans reflect greater access by households to the formal financial system (Morgan & Zhang, 2015).

The mortgage market in Kenya has many of the attributes necessary for its further development. These include a good number of lenders active in the market, some risk management tools such as good property valuation (World Bank, 2011). There have been various developments in the Kenyan mortgage sector, which are aimed at increasing the uptake of mortgage loans (Kalui & Kenyanya, 2015). Kenya's mortgage market has witnessed an impressive growth in the last decade but the numbers of loans are still very low mainly due to scanty information available to potential buyers. However, high interest rates because of a stringent monetary policy being pursued by the Central Bank of Kenya in an effort to fight high inflation have dampened the market (Kinyanjui, 2013). In addition, despite a high demand for residential and commercial houses in Kenya the growth rate in mortgage loans has grown steadily at 14% annually but the mortgage loan portfolio in the banks remains small (Makori & Memba, 2014). Kenya's mortgage market is the largest in East Africa however outstanding mortgages to GDP only stand at 2.5%, well below top performing South Africa and Namibia where outstanding mortgages to GDP stand at 26.4% and 19.6% respectively (Arvanitis, 2013).

1.1.1 Interest Rates

Interest rate is defined as the price a borrower pays for the use of money they borrow from a lender or a financial institutions or fee paid on borrowed assets (Maigua & Gekara, 2016). An interest rate is described as the cost of borrowing or lending money and is normally expressed as an annual percentage rate. In other words, interest rate is the cost of capital or the price for using money in a certain period (Uddin & Alam, 2009). Interest rates are the signals that affect the channeling of funds to demanders or borrowers from suppliers or savers, directly or through financial intermediaries (Tran, 2013). The effects of rapid

fluctuations in interest rates cause uncertainty in the user cost of capital, which reduces investment leading to reduced employment, inventories and output (Matete, Ndede & Jagongo, 2014).

Interest rate is a proxy for financial prices for credit and affects resource allocation, production levels, prices and profitability (Uddin & Alam, 2009). Interest rate has a more direct effect on financial market, an increase in interest rate leads investing decisions to make a change in the structure of investment, generally from capital market to fixed income securities (Syed & Anwar, 2012). Fluctuations in interest rates affect the value of certain assets, such as houses and share prices. Expected higher interest rates increase the expected return on savings in banks and building societies, which encourage savers to invest less of their money in alternatives, such as property and company shares (Matete, Ndede & Jagongo, 2014). High interest risk will either push the lenders out of business or borrowers will be unable to pay (Ariemba, Kiweu & Riro, 2015).

An increase in interest rates makes the cost of money more expensive and may crowd out private demand, particularly when investments show a significant sensitivity to changes in interest rates. However, higher interest rates could also lead to an increase in savings and could attract foreign inflows that could lead to a currency appreciation (Jordaan, 2013). Any initial interest rate rise increases the demand for credit by those who are most unlikely to repay their loans and hence this demand pushes up interest rates still further. With increase in interest rates, there is a rise in interest cost which pulls down otherwise profitable firms (Gitau & Kosimbei, 2015). Volatile fluctuations in interest rates and unpredictability on the incidence of the next rate of interest, lead to unpredictability in

various macroeconomic variables like investment, savings, output, employment, aggregate demand and consumption in the economy (Matete, Ndede & Jagongo, 2014).

1.1.2 Economic Growth

According to Haller (2012), economic growth refers to the increase of the national income per capita. Economic growth depicts the functional relations between the endogenous variables and involves the increase of the GDP, GNP and NI, therefore of the national wealth, including the production capacity, expressed in both absolute and relative size, per capita, encompassing also the structural modifications of economy. Economic growth is also defined as an increase in the production and consumption of goods and services, and occurs when there is an increase in the multiplied product of population and per capita consumption. Economic growth creates a legitimate expectation among consumers and investors of continued economic development. This encourages consumer spending and business investment, which in turn increases the demand on the money supply moving through the economy (Ariemba, Kiweu & Riro, 2015).

Economic growth is obtained by an efficient use of the available resources and by increasing the capacity of production of a country. It facilitates the redistribution of incomes between population and society (Haller, 2012). According to Ritter (2005) economic growth is good for performance of all economic sectors, and economic growth forecasts are a staple of international asset allocation decisions. Hence, investing in emerging markets with good long-term growth prospects is more attractive than investing in countries with prolonged periods of low growth that are expected to persist. Gross domestic product (GDP) is the market value of all officially recognized final goods and

services produced within a country in a given period. GDP acts as a measure of total economic production for a country and reflects the health of the economy.

1.1.3 Mortgage Uptake

Mortgage uptake is defined as the process in which borrowers (mortgagors) obtain a mortgage facility from a financial institution. As such, a mortgage is a conveyance or transfer of title to land to secure the payment of money or the discharge of some other obligations. It is security taken for credit advanced on the mortgagor's demand (Nwamara & Aronu, 2014). A mortgage is a loan secured by collateral of some specified real estate property that the borrower is obliged to pay back with predetermined set of installments (Akenga, Olang & Galo, 2015). A legal mortgage is created when an agreement under seal is executed or the transfer of the legal title from the borrower/mortgagor to the creditor/mortgagee subject to reconveyance back to the mortgagor on the payment of the mortgage debt (Nwamara & Aronu, 2014).

Mortgaging means that, the borrower knows how much to be paid over what period from the onset and the borrower has access to cash flow, which the mortgagor can now use to fulfill special needs and requirements (Decardi & Oduro, 2014). Mortgage market is a financial system that provides opportunity for originating and trading mortgage loans. A mortgage loan is used for financing real estate investments (Akenga, Olang & Galo, 2015). Mortgage financing requires borrowers to put in some savings as down payment for the property, it lowers the ratio of NPLs. Like any other markets, the mortgage market has two main primary players; the Mortgagor (the borrower on the demand side) in a mortgage

transaction who pledges property as security for a debt and the Mortgagee (the lender on the supply side) who offers the loan (Bank of Ghana, 2007).

Mortgage finance is a loan given by commercial bank or mortgage bank to finance the purchase of real estate with specific payment schedule and interest rate. Mortgage financing is necessary since it enable individuals and cooperation to provide the housing need of the populace (Okidim & Ellah, 2013). Mortgages, like many other types of loans, have a fixed term to maturity i.e. that is, a date at which the loan is to be fully repaid. Loans can be repaid in installments over the term of the mortgage, in a lump sum at the terminal date of the contract, or in some combination of installments and a final lump sum payment (McDonald & Thornton, 2008). In a mortgage, the lender does not receive any share in the ownership of the property, but is only entitled to take back the principal amount and the interest accumulated on the principal amount lent (Decardi & Oduro, 2014).

1.1.4 Relationship between Interest Rates, Economic Growth and Mortgage Uptake

Mortgage is a primary mechanism for extending credit and mortgage financing employed as the principal instrument to finance real estate acquisitions (Ngacha, 2013). The modern real estate sector is critically important to stead economic development and stability (Wang, 2012). The economic growth theory emphasizes that well developed financial intermediation through mortgage financing can promote economic growth through marginal productivity of capital, efficiency of channeling savings to investment, savings rate and technological innovations (Monogbe, 2015). Thus, the level of economic growth influences mortgage uptake in an economy and economic decline influences the mortgage

market because consumers and investors spend less money hence reducing the demand for money (Agao, 2014).

According to Ariemba, Kiweu and Riro (2015) higher demand for money puts upward pressure on interest rates throughout the economy. With less competition for money, interest rates are pushed downward and for prospective homebuyers, lower interest rates during periods of low economic growth can help decrease the long-term cost of home ownership. The loanable fund theory presupposes that the level of mortgage interest rates influence the demand and supply of mortgages hence equilibrium interest rate determines the amount of loanable funds commercial banks will advance towards mortgage financing (Sen, 2015). Thus, the rise or fall of mortgage interest rates also known as mortgage contract rate will affect mortgage uptake by borrowers (Mbogha, 2015).

1.1.5 Banking Institutions in Kenya

Banking institutions refers to firms or organizations, which carry on, or proposes to carry on the functions of financial intermediation (CBK, 2016). The Kenyan-banking sector is composed of the CBK, as the regulatory authority and the regulated; commercial banks, non-bank financial institutions and forex bureaus (Matete, Ndede & Jagongo, 2014). The banking industry in Kenya is also governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act and various prudential guidelines issued by the Central Bank of Kenya (Makori & Memba, 2015). The banking sector dominates the financial sector comprising of 43 Commercial Banks, 1 Mortgage finance company thus there exist 44 banking institutions in Kenya (Inganga et al., 2014). In Kenya, the banking sector plays a

dominant role in the financial sector, particularly with respect to mobilization of savings and provision of credit (Maigua & Gekara, 2016).

The banking industry in Kenya has experienced tremendous changes in the last decade, leading to enhanced financial inclusion and efficiency; and harnessed small and medium-sized enterprises engagement practices and policies, living up to the global trends of convenience and alternative banking models (KBA, 2016). Kigomo (2016) studied the influence of mortgage interest rates on the uptake of mortgages and established that income levels had the greatest effect on uptake of mortgages followed by interest rates and other mortgage costs. Kalui and Kenyanya (2015) carried out an investigation into selected factors hindering access to mortgage finance in Kenya and established that the most important factor affecting access to mortgage finance was credit risk which greatly affects access to mortgage finance and low income levels which increases the chances of defaulting in repayment and affordability to meet the monthly payments.

1.2 Research Problem

Mortgage financing plays a significant role in enabling people to be real estate property owners and or homeowners (McDonald & Thornton, 2008). As such, the reduction of interest rates on mortgage loans increases the amount of investment to real estate sector; however, there is no direct link, which connects the mortgage financing system and economic growth. In addition, mortgage as a tool reduces level of risk and interest rate in the economy and enhances positive economic growth (Tsvihun, 2000). However, interest rate decisions affect market interest rates (such as mortgage rates and bank deposit rates), to varying degrees.

Mortgages present an ideal avenue for home ownership in Kenya. However, obtaining of the mortgage facility in Kenya is bureaucratic in nature compounded with the need to identify a suitable service provider (Njiriri & Wanyoike, 2012). Although there has been a remarkable increase in demand for real estate investments in Kenya the amount of mortgage uptake is still low (Akenga, Olang & Galo, 2015). The Kenyan mortgage market has been experiencing slow growth despite the upsurge of housing prices over the last few years. Statistics indicate that all commercial banks offer mortgage finance but still only a small percentage of Kenyans have used mortgages (Kalui & Kenyanya, 2015). Part of the reason for this low market penetration is nested in the lack of affordability due to a combination of low incomes, high interest rates, high inflation and the inability of the financial markets to cater for long-term funding (Arvanitis, 2013).

Vast studies have also been carried out locally and internationally on mortgage and mortgage financing. Okidim and Ellah (2013) studied the effect of changes in mortgage financing on economic growth and the relationship between mortgage finance and economic growth and established that that there was no significant relationship between mortgage finance and economic growth in Nigeria. Tameme (2009) evaluated the perceptions of UK Muslims towards various aspects of Islamic mortgages and the structure of of Islamic mortgages in UK and concluded that the prospects of Islamic mortgages in UK were promising unlike those of conventional banks since they are not financed by borrowing from wholesale markets but rather from Islamic deposits.

In Kenya, Bett (2013) studied the effect of inflation and interest rates on mortgage financing established that there was a strong positive relationship between inflation, interest rate and mortgage financing by Kenyan commercial banks. Nyakundi (2015)

studied the effect of interest rates on mortgage uptake concluded that interest rate negatively affects mortgage uptake and an increase in interest rate will lead to a decrease in mortgage uptake in financial institutions in Kenya. The numerous studies available on mortgage financing have not analyzed the combined effects of between interest rates, economic growth and mortgage uptake since most of them are on the effects of interest rates on mortgage financing. Therefore, this study seeks to provide an answer to the question, what is the effect of interest rates and economic growth on mortgage uptake in banking institutions in Kenya?

1.3 Research Objective

To examine the effect of interest rates and economic growth on mortgage uptake in banking institutions in Kenya.

1.4 Value of the Study

This study will present the findings, conclusions and recommendations on the relationship between interest rates, economic growth on mortgage uptake. Thus, the findings will be of value to the management of banking institutions in Kenya who may use the findings to establish whether mortgage uptake is influenced by interest rates and economic growth. In addition, the study will be of significance to the management of non-banking institutions like credit only microfinance's and cooperative societies who also advance loans to their clients.

The study will also be of value to various policy making organizations to come up with specific policies regarding mortgage financing, interest rates and economic growth. Research organization in the banking industry may also use the study recommendations to

introduce new regulatory measures and policies in the banking sector. The study will also add value to the existing and available studies on mortgage financing, economic growth and interest rates hence an additional benefit to academic researchers and other non-academic researchers will have interest on the research topic.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Chapter two describes the theoretical literature review, the determinants of mortgage uptake in banking institutions in Kenya, the empirical literature review and the summary of the literature

2.2 Theoretical Literature Review

2.2.1 Lien Theory of Mortgages

The lien theory was developed by Hester (1975). In the lien theory, 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 (Makori & Memba, 2015). The theory allows title to remain with the mortgagor and the mortgage that is placed on the property is a charge on the title. The mortgage instrument says nothing about title but under the lien theory of mortgages the debt is the principal obligation and the mortgage collateral agreement to secure the debt (Nwankwo, 2014).

The lien theory states that the mortgagee has only a lien on the property and is entitled to possession and rents only upon foreclosure (Jennings, 2013). The lien theory of mortgages presupposes that foreclosures generally require a civil action against the borrower-owner who is in default (Brueggeman & Fisher, 2011). Lien theory provides that a mortgagee of property holds only a lien, not title, to the property until such time as the mortgage is fully

paid, at which time the lien is removed. Under this system, when a loan is made, title is invested in an independent third party (trustee). The trustee receives a deed of trust containing instructions to be followed if the lender provides notice to the trustee that a mortgagor is in default. In this event, the trustee usually notifies the borrower that the deficiency must be cured by a certain date or the trustee will proceed to auction the property (Brueggeman & Fisher, 2011).

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 (Akenga, Olang & Galo, 2015). The lien theory requires the mortgagee to wait for the foreclosure of the mortgaged property and allows the mortgagee to obtain satisfaction for the mortgagor's debt from the proceeds of the foreclosure (Morgan, 2015).

2.2.2 Title Theory of Mortgages

The Title theory was introduced by Gilbert (1968) and states that after making the mortgage, the mortgagor passes title of the property, the subject of the mortgage, to the mortgagee, subject to a condition subsequent (Nwankwo, 2014). 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 (Makori & Memba, 2015). Title theory gives the mortgage

some type of legal title to the property. Under the theory, the mortgagee has the right upon foreclosure, to possession and rents on the property (Jennings, 2013).

In the title theory of mortgages, title is usually vested in the lender when the mortgage loan is made and reconveyed to the borrower when the loan is repaid. In addition to having title, the lender is empowered to take certain steps in the event that the borrower defaults (Brueggeman & Fisher, 2011). In title theory, the property-law doctrine states that a mortgage transfers title to a property to the mortgagee, who holds it until the mortgage has been paid off, at which time title passes to the mortgagor (Akenga, Olang & Galo, 2015). The rationale behind the title theory is that up until default and subsequent foreclosure, the mortgagor maintains full control and possession of the property. The practical application is that a mortgagor can otherwise deal with the property as his own estate, conditioned on the mortgage (Morgan, 2015).

2.2.3 Loanable Funds Theory

The Loanable funds theory was developed by Wicksell Robertson in 1934 and the theory states that the quantity of a financial security supplied changes at every given interest rate in response to a change in another factor besides the interest rate (Akenga, Olang & Galo, 2015). According to the loanable funds theory, the rate of interest is determined at that level which equates the supply of securities with the demand for them, or, stated differently, the factors determining the interest rate are real investment demand and real saving (Oster, 2014). The theory also states the rate of interest is determined by the demand for and the supply of funds in the economy at that level at which the two (demand and supply) are equated. Thus, it is a standard demand-supply theory as applied to the market for loanable

funds (credit), treating the rate of interest as the price (per unit time) of such funds (Sen, 2015).

The loanable funds model determines interest rates based on the supply and demand in the bonds market. In the loanable funds approach, the equilibrium interest rate equates the quantity supplied of loanable funds, which consists of saving with the quantity demanded for loanable funds, which consists of investment and bond financed government deficit (Khandker & Khandker, 2008). The loanable fund model explores the causes of rising and falling interest rates and to evaluate the wisdom of policy measures designed to influence credit and monetary growth rates and interest rates. This theory attempts to identify the approximate causes of interest rate variations by analyzing the supply of and demand for credit. The theory derives from the notion that savers make a decision between consumption now and consumption in the future (Oster, 2014).

2.2.4 The Economic Growth Theory

The economic growth theory was developed by Solow (1956). The theory is also referred to as the Solow's Economic growth theory or the neo classical theory of economic growth. According to the theory, growth comes from adding more capital and labour inputs. Thus, the marginal product of additional units of capital and labour may decline hence an economy moves back to a long –term growth path with real GDP. The theory also posits that economic growth is a primary, perennial goal of many societies and most governments and economic growth produces many benefits including raising standards of living and improving quality of life across the world (Haller, 2012).

The Solow-Swan growth model predicts that in steady-state equilibrium the level of GDP per capita is also determined by the prevailing technology and the exogenous rates of saving, population growth and technical progress (Dewan & Shajehan, 2001). The economic growth theory further states that economic growth paths usually consist of short periods of collapse and longer periods of relatively stable growth although patterns and paces vary significantly from country to country (Ritter, 2005). Economic growth affects performance of all economic sectors and economic growth forms the basis of asset allocation decisions. Thus, mortgage products are also affected by economic performance of a country since economic growth affects the disposable income of the population, which influences mortgage affordability.

2.3 Determinants of Mortgage Uptake

2.3.1 Inflation

Inflation is a persistent increase in the general price level of goods and services in an economy over a period of time (Mugambi & Okech, 2016). Inflation can also be defined as a permanent increase in the aggregate price level which implies a diminishing of the purchasing power and increase the cost of living. Anticipated inflation affects the nominal interest rate charged, leading to high quoted repayments and thus the front-loading of payments to compensate for loss in purchasing power over time (Bank of Ghana, 2007).

The uncertainty created by the persistent instability of a currency due to unstable inflation hinders access to external long-term finance for mortgage lending (Bank of Ghana, 2007). Low inflation is an essential ingredient of a successful mortgage market as it will lead to low and stable interest rates. High inflation leads to high interest rates as lenders seek to

compensate loss of purchasing power of their money (Ariemba, Kiweu & Riro, 2015). Further, high inflation has the tendency of distorting economic activity; thus, an increase in the rate of inflation will reduce the level of economic growth (Mugambi & Okech, 2016).

2.3.2 Credit Risk

Credit risk denotes to the risk that a borrower will default on any type of debt by failing to make the mortgage payments as required. The risk is primarily that of the lender and includes lost principal and interest, disruption to cash flows, and increased collection costs (Alshatti, 2015). Credit risk also refers to the potential that a mortgage borrower or counterparty will fail to meet its obligations in accordance with agreed mortgage terms. Credit risk in the banking industry is mostly caused by adverse selection and moral hazards due to information asymmetry. Credit risk dominates the risk profile regardless the careful credit process of banks (Syed & Anwar, 2012).

The credit risk originating from the loan portfolio of banks remains the main risk with a direct effect on the financial stability of the banking sector. The increase of nonperforming loans in the banking system has been an important factor in the restriction of loan procedures for individuals and even for businesses (Shahini, 2014). Inadequate institutional capacity, inefficient credit guidelines, inefficient board of directors, low capital adequacy ratios and liquidity, compulsory quota lending because of government interference and lack of proper supervision exacerbate the credit risk situation in a financial institution (Jordaan, 2013)

2.3.3 Money Supply

Money supply refers to the total amount of money in circulation or in existence in a country. There are several standard measures of the money supply, including the monetary base, M1, and M2 (Shrestha & Subedi, 2014). An increase in money supply leads to inflation (or expected inflation) in the economy, which in turn increases the discount rate and lowers the market returns of an investment. In addition, an increase in money in circulation increases both interest rates, the value of currency and economic growth with affects mortgage uptake (Ariemba, Kiweu & Riro, 2015).

Increase in the money supply may also lead to an increase in the discount rate which may have a negative effect may be countered by the economic stimulus provided by money growth, which would likely increase cash flows in the economy (De-Fusco & Paciorek (2014). A measure of money supply that includes cash and checking deposits (M1) as well as near money (M2) which includes savings deposits, money market mutual funds and other time deposits, which are less liquid and not as suitable as exchange mediums but can be quickly converted into cash or checking deposits (Shrestha & Subedi, 2014).

2.4 Empirical Literature Review

Makori and Memba (2015) assessed the factors influencing mortgage financing by commercial banks in Kenya using a descriptive research design. Data was obtained through self-administered questionnaires and regression and correlations analysis was used to analyze data. The study established that commercial banks were able to identify various risks they face in lending to the borrower; this would help them to determine their interest rates through mortgage lending, the study further establishes that employment status of

clients affects mortgage financing among banks. The study recommended that banks should identify various risks they face in lending to the borrower; this would help them to determine their interest rates.

Akenga, Olang and Galo (2015) evaluated the effect of mortgage market risk on mortgage uptake with focus on credit risk, interest rate risk, price risk and liquidity risk on mortgage uptake in mortgage lending institutions in Kenya. A causal research design was used and a sample size of 27 out of 37 mortgage lenders since 2008 to 2013 was used. The study used the regression model which revealed that risks faced by lenders affect mortgage uptake such that if the risk involved in lending is high lenders limit the amount of mortgage lending. The study recommended that lenders should ensure risks are well managed so as to increase mortgage uptake.

Kariuki (2015) examines the determinants of mortgage uptake in Kenya using a cross sectional design of the various mortgage lending institutions in Kenya. Data was drawn from the registered the 43 commercial banks by the Central Bank of Kenya as at 30 December 2014. The study used secondary data which was collected from financial statements and government policy papers and analyzed using regression analysis. The results of the study revealed that the various determinants of mortgage uptake include property prices, interest rates, level of income, costs of operations, the mortgage process as well as the size of the bank. The study concluded that these factors have had a significant influence on the uptake of mortgage products in Kenya.

De-Fusco and Paciorek (2014) investigated the relationship between the mortgage interest rate and a household's demand for mortgage debt. The study used detailed data of over 2.7

million mortgages to provide novel estimates of the interest rate elasticity of mortgage demand. The study also exploited a discrete jump in interest rates generated by the conforming loan limit - the maximum loan size eligible for securitization. The study found that a reduction in total mortgage debt of between 1.5 and 2 percent per percentage point increase in the interest rate. The study also found that the changes in mortgage demand implied by past and proposed future increases to the guarantee fees charged.

Nwankwo (2014) examined the effect of mortgage financing on housing for all in Nigeria by the year 2020 using quantitative data and regression analysis. The study revealed that mortgage credit, commercial bank credit and private sector investment had significant and positive effect on housing for all in Nigeria by the year 2020. The study recommended that the existing procedure for mortgage lending by commercial banks, mortgage banks and private investor should be reviewed with the aim of making funds for property development accessible to prospective borrowers at cheaper rates; there should be new regime of mortgage finance policy aimed at bolstering public confidence in saving and investing in mortgage related instruments especially in the capital market.

Decardi and Oduro (2014) investigated the pull and push factors influencing the mortgage financing market in housing delivery in Ghana using a case study approach. The study revealed that poor performance of the local economy, in proper address systems, lack of information about potential clients were identified as the push factors. The study also established that stable economic indicators like the prime and lending rates, efficient banking systems and proper identification system were also considered as the pull factors. The study concluded that successful mortgage market depends highly on efficiency of land

title system and mortgages must be an attractive investment that will provide investors with positive and risk adjusted rate of return.

Njiriri and Wanyoike (2014) investigated the effect of personal finance commitments on mortgage facility uptake by bank staff within Nakuru Town using descriptive research design. The findings indicated that, while a high percentage of staff were eligible for mortgage several factors hindered their mortgage uptake. Such factors included serving probation period, contract employees, salary over commitments and little time towards retirement. The study found that personal financial commitments such as short-term financial commitments, salary over commitments, taking care of siblings, young family commitments, and reservations towards long-term financial commitment influenced the ability to take up mortgage facilities by bank staff.

Mang'era (2014) examined the relationship between mortgage interest rates and financial performance of mortgage firms in Kenya with focus on interest rate, credit risk, assets size, liquidity and expenses management. The study used secondary data from CBK, NSE and the 44 commercial banks in Kenya for the period between 2009 and 2012. Regression analysis and correlation analysis were used to establish the relationship between mortgage interest rate and financial performance. The study established that there was a strong positive relationship between bank size and profitability of commercial banks offering mortgage in Kenya. The study also established that liquidity, interest rates, expenses management and credit risk had no significant effect on return on assets.

Nkyi and Dinye (2013) examined accessibility to real estate finance in Ghana using a questionnaire survey and informant interviews to ascertain from corporate real estate

developers and financial institutions (commercial banks, development and merchant banks) the underlying role and determinants of real estate finance. The study found that there was a difficulty in the financial lending system with majority of real estate firms deriving most of their funding from commercial banks and through advance deposit from prospective homeowners. The study also found that the inability of corporate real estate developers to provide acceptable collateral and lack of personnel are contributory to the demand factors limiting access to funding.

Njiru and Moronge (2013) investigated the factors affecting the growth of mortgage industry in Kenya using a descriptive research design and adopted stratified random sampling technique. The study established that the factor that affect growth of mortgage industry in Kenya were; interest rate volatility and mortgage loans accessibility to low income earners which affected to great extent compared to credit risk which was found to have lesser effect. The study also established that the Kenya government had not put up sufficient incentives and regulations that could encourage greater uptake of the mortgage.

Hullgren and Soderberg (2013) investigated consumer characteristics that influence Swedish consumers' mortgage rate decisions, such as the choice between an adjustable rate mortgage and a fixed rate mortgage. Data for the study was collected in a randomized survey of the Swedish population in 2010 and binary logistic regression used to analyze data. The results established that a lower level of education, lower income, lower financial literacy, and trouble handling interest rate increases influence Swedish consumers to choose ARMs while gender does not significantly affect the overall results. The results also revealed that a gender-divided regression shows that age, a low level of education and risk averseness significantly affect men's mortgage choices, whereas income, trouble

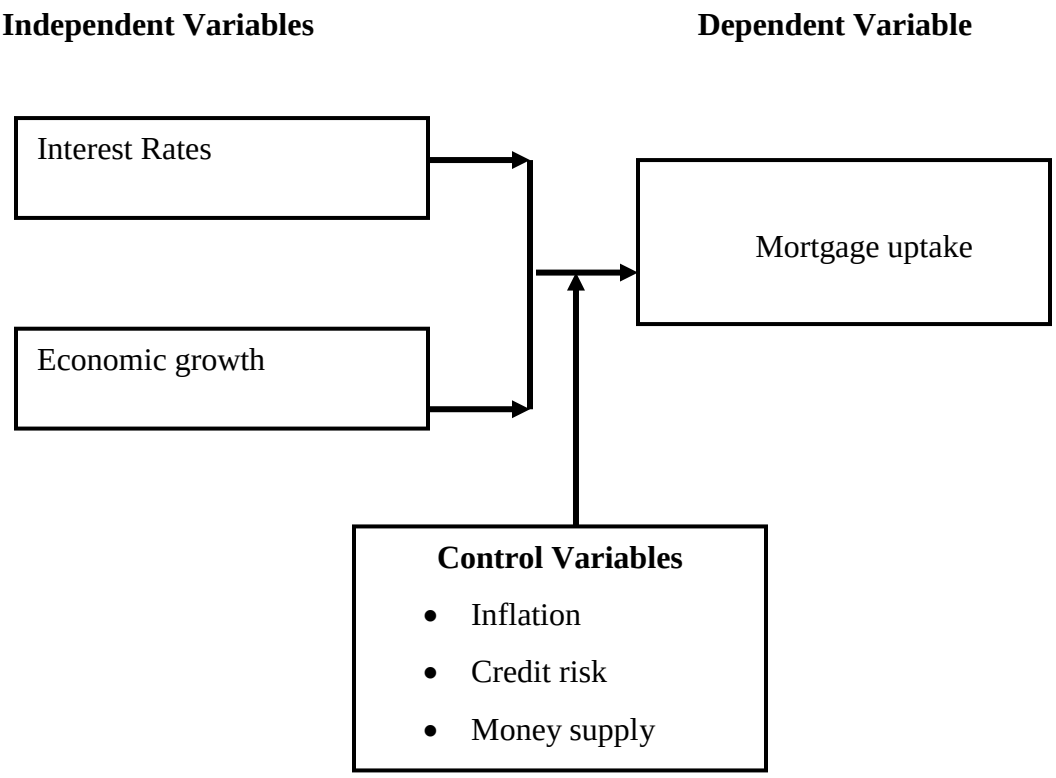
handling interest rate increases and low financial literacy significantly affect women's mortgage choices.

Guiso, Sapienza and Zingales (2013) used survey data to measure households' propensity to default on mortgages even if they can afford to pay them (strategic default) when the value of the mortgage exceeds the value of the house. The study findings established that the willingness to default is affected by both pecuniary and non-pecuniary factors, such as views about fairness and morality. The study also found that exposure to other people who strategically defaulted increases the propensity to default strategically because it conveys information about the probability of being sued.

2.5 Conceptual Framework

A conceptual framework diagrammatically presents the link and the relationship between the research variables. The conceptual framework shows the relationship between the independent and dependent variables and other variables that may influence the outcome of the relationship. Figure 2.1 shows the conceptual framework for the study.

Figure 2.1 Conceptual Framework



Source: Researcher

2.6 Summary of the Literature Review

The reviewed theories on mortgage financing indicate that the most important advantage associated with mortgage is the fact that, it allows one to retain the ownership of a property and at the same time, helps one in getting financial aid. From the study reviewed studies it is also evident that mortgage financing plays a significant role in enabling people to be real estate property owners and or homeowners and also it's a source of profitability for banking institutions. Despite the acknowledgement of importance of by various authors including Makori and Memba (2015), Kariuki (2015), DeFusco and Paciorek (2014) Nwankwo

(2014) and also Nkyi and Dinye (2013) no single study has investigated the influence of interest rates and economic growth on mortgage uptake.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, the target population, data collection and the data analysis method that will be used to carry out the study

3.2 Research Design

This study adopted a quantitative research design. A quantitative research design is a research technique that is used to gather quantitative data, data that can be sorted, classified, measured (MacDonald & Headlam, 2008). Quantitative research is also based on the measurement of quantity or amount and it is applicable to phenomena that can be expressed in terms of quantity (Kothari, 2004). Therefore, a quantitative research design helped in determining the effect of interest rates and economic growth on mortgage uptake in banking institutions in Kenya using secondary data.

3.3 Population of the Study

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 (Ngechu, 2004). A population is also defined as the full group of potential participants to whom the researcher wants to conduct the research for the study. The population of this study consisted of the 44 banking institutions, which offer mortgage financing in Kenya comprising of 43 commercial banks, and one-mortgage finance institutions. The study carried out a census of the 44 banking institutions since the population is small and finite.

3.4 Data Collection

Data for this study was collected from secondary sources. Secondary data on mortgage interest rates and mortgage uptake in banking institutions in Kenya was retrieved from the Central Bank of Kenya banking supervision reports. On the other hand, secondary data on economic growth was retrieved from the Kenya National Bureau of Statistics for a period of 10 years from 2006 – 2015.

3.5 Data Analysis

The data collected was coded using Microsoft Excel and the computer based Statistical Package for Social Sciences and then analyzed using regression and correlation analysis. The classical regression model and correlation analysis has been applied in previous studies including Nyakundi (2015), Akenga, Olang and Galo (2015), Kariuki (2015), Mang'era (2014) & Hullgren and Soderberg (2013) to establish the relationship between mortgage financing and various variables.

3.5.1 Analytical Model

The study adopted the following multiple linear regression equation

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where: Y = Mortgage uptake, which will be determine using the Natural log quarterly mortgage financing from banking institutions in Kenya

X_1 = Interest rates which will be determined using the quarterly mortgage interest rate from the banking institution in Kenya

X_2 = Economic growth, which will be determined using the Natural log of quarterly real Gross domestic product (GDP)

X_3 = Inflation, which will be measured by the quarterly consumer price index

X_4 = Credit risk, which will measured quarterly ratio of NPLs and total loans

X_5 = Money supply, which will be measured using natural log of quarterly broad money supply

$\beta_1 - \beta_5$ = Coefficients of the regression equation

a = Constant (Y- intercept)

ε = Error term

3.5.2 Test of Significance

The statistical significance of the regression model was established using the F test whereas the significance of the coefficients of the regression equation was determined using the Student's (t) test.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

Chapter four presents an analysis and presentation of the study findings. The chapter outlines the descriptive statistics, correlation analysis, regression analysis and the discussion of the study findings.

4.2 Analysis of Data and Presentation of Findings

This section presents the descriptive statistics, the correlation analysis and the regression results.

4.2.1 Descriptive Statistics

Table 4.1 Descriptive Statistics

	N=10*4 2006-2015	Minimum	Maximum	Mean	Std. Deviation
Ln Mortgage Uptake (Ln)	40	10.043	12.198	11.18447	.817094
Mortgage Interest Rate (%)	40	5.880	18.000	9.25525	2.809488
Ln GDP (Ln)	40	13.289	13.845	13.55361	.151294
CPI (%)	40	76.345	163.274	116.10505	28.009029
Credit Risk (%)	40	4.346	23.061	8.80559	5.557346
Ln M3 (Ln)	40	13.494	14.981	14.28553	.447398

Source: Research Findings

Table 4.1 illustrates the summary descriptive statistics of the findings of the study. The table indicates than average mortgagee uptake was 11.18 with minimum and maximum values of 10.04 and 11.18 respectively. The results also show that the average mortgage interest rate interest rate was 9.26 with minimum and maximum values of 5.88 and 18.00. The results indicate that average GDP rate was 13.55 with minimum and maximum values of 13.29 and 13.85 while the average consumer price index was 116.11 with minimum and maximum values of 76.35 and 163.27 respectively. The table further shows that the average credit risk was 8.81 with maximum and minimum values of 23.06 and 4.35 while the average money supply over the period was 14.29 with minimum and maximum values of 13.49 and 14.98 respectively.

4.2.2 Correlation Analysis

Table 4.2 Correlations

	Ln Mortgage Uptake	Mortgage Interest Rate	Ln GDP	CPI	Credit Risk	Ln M3
Ln Mortgage Uptake	1					
Mortgage Interest Rate	.276	1				
Ln GDP	.924**	.232	1			
CPI	.940**	.253	.940**	1		

Credit Risk	-.755**	-.149	-.720**	-.767**	1	
Ln M3	.953**	.192	.964**	.979**	-.792**	1

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

Source: Research Findings

Table 4.2 shows the correlation analysis results. The table illustrates that mortgage uptake has a positive correlation with mortgage interest rate, gross domestic product, inflation (CPI) and money supply (M3). The results on the table also indicate that mortgage uptake has a negative correlation with credit risk. This results indicates that there is a positive correlation between mortgage interest rate, economic performance, inflation and money supply but a negative correlation between mortgage uptake and credit risk.

4.2.3 Regression Analysis

4.2.3.1 Model Summary

The model summary results are shown by table 4.3

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957[a]	.917	.905	.252444

a. Predictors: (Constant), Ln M3, Mortgage Interest Rate, Credit Risk, Ln GDP, CPI

Source: Research Findings

The results on table 4.3 show that the coefficient of determination (R^2) is 0.917, which indicates that 91.7% of the variation in the dependent variable (mortgage uptake) is explained by the independent variables (interest rates and economic growth) and the control variables (inflation, credit risk and money supply). The other 8.3% of the variation is explained by other variables and the error term. The correlation coefficient (R) indicates that there is a strong relationship between the independent and the dependent variables.

4.2.3.2 Analysis of Variance

Table 4.4 below shows the ANOVA results for the study

Table 4.4 Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.871	5	4.774	74.916	.000[b]
	Residual	2.167	34	.064		
	Total	26.038	39			

a. Dependent Variable: Ln Mortgage Uptake

b. Predictors: (Constant), Ln M3, Mortgage Interest Rate, Credit Risk, Ln GDP, CPI

Source: Research Findings

Table 4.4 indicates that at 95% confidence level the regression model is significant as the F – value is significant since the P-value (0.000<0.05). This indicates a significant relationship between the independent and dependent variables.

4.2.3.3 Regression Coefficients

Table 4.5 Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13.849	10.210		-1.356	.184
	Mortgage Interest Rate	.027	.016	.092	1.685	.101
	Ln GDP	.182	1.064	.034	.171	.866
	CPI	.001	.008	.047	.181	.858
	Credit Risk	-.001	.012	-.009	-.102	.920
	Ln M3	1.552	.656	.850	2.367	.024

a. Dependent Variable: Ln Mortgage Uptake

Source: Research Findings

The regression coefficient results on table 4.5 indicates that an insignificant positive relationship between mortgage interest rates, economic performance (GDP), inflation (CPI) and mortgage uptake in banking institutions in Kenya. Additionally, the results indicate a negative and insignificant relationship between credit risk and mortgage uptake. Further, the results indicate a positive and significant relationship between money supply and mortgage uptake in banking institutions in Kenya.

4.3 Discussion of the Findings

The findings of the study found that mortgage interest rates, economic performance (GDP), inflation (CPI) positively influences mortgage uptake in banking institutions in Kenya but

the relationship is insignificant. This finding indicates that there is a direct relationship between mortgage interest rates, economic performance and inflation in banking institutions in Kenya. The findings have revealed that mortgage uptake in banking institutions in Kenya is negatively influenced by credit risk though the relationship is insignificant. This indicates that credit risk levels inversely affects mortgage uptake in banking institutions in Kenya. The study has established that money supply positively and significantly influences mortgage uptake in banking institutions in Kenya. This indicates that money supply has a direct relationship with mortgage uptake.

Several scholars have also obtained similar findings: For instance, Syed & Anwar (2012) found that interest rate has a more direct effect on financial market, an increase in interest rate leads investing decisions to make a change in the structure of investment, generally from capital market to fixed income securities. According to Ritter (2005), economic growth is good for performance of all economic sectors, and economic growth forecasts are a staple of international asset allocation decisions. Akenga, Olang and Galo (2015) revealed that risks faced by lenders affect mortgage uptake such that if the risk involved in lending is high lenders limit the amount of mortgage lending. Ariemba, Kiweu and Riro (2015) found that an increase in money in circulation increases both interest rates, the value of currency and economic growth with affects mortgage uptake. Njiru and Moronge (2013) found that the factors that affect growth of mortgage industry in were interest rate volatility and mortgage loans accessibility and credit risk. Kariuki (2015) established that the determinants of mortgage uptake include property prices, interest rates, level of income, costs of operations, the mortgage process as well as the size of the bank.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five summarizes the study findings, provides the conclusions and presents the recommendation for the study. The chapter also describes the limitations of the study and suggestions for further research.

5.2 Summary

The objective of this study was to examine the effect of interest rates and economic growth on mortgage uptake in banking institutions in Kenya. The study focused on interest rates and economic growth as the independent variables whereas inflation, credit risk and money supply were used as the control variables while mortgage uptake was the dependent variable. The study carried out a census of the 44 banking institutions, which offer mortgage financing in Kenya comprising of 43 commercial banks, and one-mortgage finance institutions.

The findings of the study found that the average mortgagee uptake was 11.18 and the average mortgage interest rate interest rate was 9.26 while the average GDP rate was 13.55. In addition, the study found that the average consumer price index was 116.11 whereas the average credit risk was 8.81 while the average money supply was 14.29 respectively. Further, the study found that there was a positive correlation between mortgage uptake and mortgage interest rate, gross domestic product, inflation and money supply but mortgage uptake had a positive correlation with credit risk.

The study further found that the independent variables (interest rates and economic growth) and the control variables (inflation, credit risk and money supply) explained 91.7% of the variation in mortgage uptake. Additionally, the study found that the regression model was significant at 95% confidence level. The findings of the regression coefficients found an insignificant positive relationship between mortgage interest rates, economic performance inflation and mortgage uptake but a negative and insignificant relationship between credit risk and mortgage uptake while money supply had a positive and significant relationship with mortgage uptake in banking institutions in Kenya.

5.3 Conclusion

The findings of the study found that mortgage interest rates, economic performance and inflation positively influences mortgage uptake in banking institutions in Kenya. In line with this finding, the study concludes that there is a direct relationship between mortgage interest rates, economic performance and inflation in banking institutions in Kenya.

In addition, the study revealed that mortgage uptake is negatively influenced by credit risk in banking institutions in Kenya. This leads to the conclusion that credit risk has an inverse effect on mortgage uptake and high level of credit risk reduces mortgage uptake.

Further, the study found that that money supply positively and significantly influences mortgage uptake in banking institutions in Kenya. This leads to the conclusion that money supply has a direct relationship with mortgage uptake such that the increase in money supply increases cash flows in the economy.

5.4 Recommendations

The study concluded that that there is a direct relationship between mortgage interest rates, money supply and inflation, which are part of the monetary policy instruments used by the Central Bank of Kenya. The study recommends that the central banks of Kenya should instate measures to ensure that mortgage interest rates, money supply and inflation do not affect mortgage uptake from banking institutions.

In addition, the study concluded that economic growth directly affects mortgage uptake in banking institutions in Kenya. As such, policies on economic growth are developed and instituted by the government, therefore; this study recommends that the Government of Kenya should institute effective policies, which will ensure there is economic growth to boost mortgage uptake in banking institutions.

Finally, the study concluded that credit risk negatively affects mortgage uptake in banking institution in Kenya. The study recommends that managers of banking institutions should come up with effective credit risk management and control practices to ensure that credit risks do not affect the uptake of mortgage in banking institutions.

5.5 Limitations of the study

This study was limited to the 44 banking institutions in Kenya and did not focus on other lending institution like saving and credit cooperative societies, deposit taking microfinance institutions and credit only microfinance. Such institutions are also involved in lending but lend under different terms and mechanisms.

The study was also limited to mortgage uptake and not the uptake of other loans like personal unsecured and secured loans, assets financing and uptake of micro credit. The study also did not investigate uptake of loans in other economic sectors like agriculture, manufacturing and transportation hence the findings are limited to the mortgage sector.

5.6 Suggestions for Further Research

The scope of this study was mortgage uptake in banking institution in Kenya with special focus on interest rates and economic growth. However, from the reviewed empirical studies very few studies have explored the internal determinants (bank specific determinants) that influence mortgage uptake from the different financial institutions in Kenya. This has created an empirical research gap which research has not all addressed, hence this study recommends for additional research on the bank specific factors that influence mortgage uptake.

The study also established that credit risk negatively affect mortgage uptake however most studies on credit risk do not investigate the credit risk management and control strategies used to mitigate credit risk associated with mortgage financing. This study therefore suggests an examination of the effectiveness of credit risk management and control strategies used in mortgage financing. Finally, the study suggests an additional research on the effect of interest rates and economic growth on the uptake of other forms of loans in different economic sectors.

REFERENCES

Agao, E, A. (2014). The Effect of Macroeconomic Variables on the Mortgage Uptake for Mortgage Industry in Kenya. *Unpublished MBA Project.* University of Nairobi

AlShatti, A. A. (2015). Performance of the Commercial Banks: The Case of Jordan. *Journal of Accounting, Finance and Economics, 4*(2), 45 – 57

Akenga, G. M., Olang, M.A. & Galo, N. M. (2015). Effect of Mortgage Market Risk on Mortgage Uptake: A Case Study of Mortgage Lenders in Kenya. *Journal of Investment and Management,* 4(6), 334-347

Anwar, U. & Syed, T. J. (2012). Effects of Interest Rate, Exchange Rate and Their Volatilities on Stock Prices: Evidence from Banking Industry of Pakistan. *Theoretical and Applied Economics,* 8(573), 153-166

Ariemba J. M., Kiweu J. M. & Riro, G. K. (2015). The Influence of Macro Economic Factors on Mortgage Market Growth in Kenya. *Journal of Finance and Accounting,* 3(4), 77-85.

Arvanitis, Y. (2013). African Housing Dynamics: Lessons from the Kenyan Market. *Africa Economic Brief,* 4(3), 1-12

Bank of Ghana. (2007). The Housing Market In Ghana. Bank of Ghana

Bett, M. (2013). Effects of Inflation and Interest Rates on Mortgage Finance offered by Commercial Banks in Kenya. *Unpublished MBA Project.* University of Nairobi

Brueggeman, W. B. & Fisher, J. D. (2011). Real Estate Finance and Investments. (14th Ed.). The McGraw-Hill/Irwin

Central Bank of Kenya (2010). Mortgage Finance in Kenya: Survey Analysis. Central Bank of Kenya

Central Bank of Kenya (2016). Bank Supervision. Accessed online on 31/7/2013 from https://www.centralbank.go.ke/index.php/banksupervision#commercial-banks

Decardi, I. N. & Oduro A. R. (2014). Participation of Real Estate Developers in Mortgage Financing: Push and Pull Factors in Ghana. *International Journal of Management Sciences*, 3(3), 126-139

DeFusco, A. A. & Paciorek, A. (2014). The Interest Rate Elasticity of Mortgage Demand: Evidence from Bunching at the Conforming Loan Limit. Finance and Economics Discussion Series, Federal Reserve Board, Washington, D.C.

Dewan, E. & Shajehan, H. (2001). Determinants of Economic Growth. (Panel Data Approach). Reserve Bank of Fiji

Gitau, G. K. & Kosimbei, G. (2015). The Effects of Financial Repression on Economic Growth in Kenya. *International Journal of Business and Commerce*, 5(2), 15-37

Guiso, L., Sapienza, P. & Zingales, L. (2011). The Determinants of Attitudes toward Strategic Default on Mortgages. *The Journal of Finance*, 4, 1473 – 1515

Haller, A. (2012). Concepts of Economic Growth and Development. Challenges of Crisis and of Knowledge. *Economy Transdisciplinarity Cognition*, 15, 66-71

Hullgren, M. & Soderberg, I. (2013). The Relationship between Consumer Characteristics and Mortgage Preferences: A Case Study from Sweden. *International Journal of Housing Markets and Analysis*, 6(2), 209-230

Ijaiya, M.A., Lawal, W.A. & Osemene, O. F. (2012). Microfinance and Mortgage Financing In Nigeria: A Rural Experience. *International Journal of Economics and Management Sciences*, 1(10), 39-44

Inganga, B. W., Njeru, A., Ombui, K. & Ondabu, I. T. (2014). Factors Affecting Customer Demand of Financial Services Offered By Commercial Banks in Nairobi County. *International Journal of Scientific and Research Publications*, 4(11), 1-25

Jordaan, J. C. (2013). Impact of Interest Rate Changes on South African GDP and Households: A Combined Macroeconomic and Social Accounting Matrix Modelling Approach. *Southern African Business Review*, 17(3), 156 – 186

Kalui, F. M. & Kenyanya, H.O. (2014). An Investigation into Selected Factors Hindering Access to Mortgage Finance in Kenya. *IOSR Journal of Business and Management*, 17(4), 71-78

Kariuki, L. W. (2015). Determinants of Mortgage Uptake. *Unpublished MBA Project.* University of Nairobi

Kenya Bankers Association. (2016). Redefining Banking and Finance. Accessed online on 31/7/2013 from http://www.kba.co.ke/media/latest-news/338-redefining-banking-and-finance

Khandker, A. W. & Khandker, A. (2008). The Supply of Loanable Funds: A Comment on the Misconception and its Implications. *Journal of Economics and Finance Education*, 7(2), 39-46

Kigomo, J. (2016). Mortgage rates in Kenya: Implications for Homeownership. *International Academic Journal of Economics and Finance,* 2 (1), 31-40

Kinyanjui, B. (2013). Kenya's Mortgage Market Still Underdeveloped despite High Demand for Houses. Accessed online on 31/7/2013 from http://todayfinancialnews.com/housing/1489-kenyas-mortgage-market-still-underdeveloped-despite-high-demand-for-houses

Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Age International (P) Limited, Publishers New Delhi

MacDonald, S. & Headlam, N. (2008). Research Methods Handbook: Introductory Guide to Research Methods for Social Research. Express Networks, Manchester.

Maigua, C. & Gekara M. (2016). Influence of Interest Rates Determinants on the Performance of Commercial Banks in Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 121–133

Makori, J. O. & Memba, F. (2015). Factors Influencing Performance of Mortgage Financing Among Commercial Banks in Kisii Town, Kenya. *International Journal of Economics, Commerce and Management,* 3(3), 1 - 15

Mang'era, A. (2014). Relationship between Mortgage Interest Rate and Financial Performance of the Mortgage Firms in Kenya. *Unpublished MBA Project.* University of Nairobi

Matete, J. K., Ndede, F. S. & Jagongo, A. (2014). Factors Affecting Pricing of Loanable Funds by Commercial Banks in Kenya. *International Journal of Business and Social Science,* 5(7), 242 – 257

Mbogha, I. A. (2015). Variability of Mortgage Interest Rates and Real Estate Growth in Kisumu Town Kenya. *Unpublished MBA Project.* University of Nairobi

McDonald, D. J. & Thornton, D. L. (2008). A Primer on the Mortgage Market and Mortgage Finance. *Federal Reserve Bank of St. Louis Review*, 90(1), 31-45

Monogbe, T. G. (2015). Intergenerational Effect of External Debt on Performance of the Nigeria Economy. *NG-Journal of Social Development,* 5(2), 51 – 65

Morgan, B. (2015). Property—Foreclosure; Is It by Entry or for Ease of Entry? Issues of Fairness Regarding the Massachusetts Foreclosure by Entry Provision. Western New England Law Review. http://digitalcommons.law.wne.edu/lawreview

Morgan, P. J. & Zhang, Y. (2015). Mortgage Lending and Financial Stability in Asia. *ADBI Working Paper Series No. 543*. Asian Development Bank Institute

Mugambi, M. & Okech, T. C. (2016). Effect of Macroeconomic Variables on Stock Returns of Listed Commercial Banks in Kenya. *International Journal of Economics, Commerce and Management,* 4 (6), 390-418

Ngacha, S. W. (2013). The Effect of Interest Rate Volatility on Mortgage Default Rate in Kenya. *Unpublished MSc Project.* University of Nairobi

Ngechu, M. (2004). Understanding the Research Process and Methods: An Introduction to Research Methods. Nairobi: Acts Press

Ngugi, P. K. & Njori, S. K. (2013). Factors affecting access to mortgage finance in Nairobi, Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1 (5), 608-630.

Njiriri, M. W. & Wanyoike D. (2014). An Assessment of Mortgage Loan Uptake among Bank Staff: A Survey of Commercial Banks in Nakuru Town. *International Journal of Science and Research*, 3(10), 2191-2195

Njiru, M. M. & Moronge, M. (2013). Factors Affecting Growth of Mortgage Industries in Kenya: A Case Study of National Housing Corporation. *International Journal of Social Sciences and Entrepreneurship,* 1 (7), 26-35.

Njongoro, J. N. (2013). The Effect of Mortgage Interest Rate on the Growth of Mortgage Financing in Kenya. *Unpublished MBA Project.* University of Nairobi

Nkyi, B. A. & Dinye, R. D. (2013). Accessibility to Real Estate Finance in Ghana: Policy Directions for Stakeholder Engagement in the Construction Industry. *International Journal of Economics, Business and Finance,* 1(3), 35 - 52

Nwamara, C. C. & Aronu, C. O. (2014). The impact of Economic Development on Land Mortgage Financing in Nigeria. *Open Science Journal of Mathematics and Application,* 2(3), 26-32.

Nwankwo, O. (2014). Implications of Mortgage Financing on Housing for All in Nigeria by the Year 2020. *International Journal of Managerial Studies and Research,* 2(11), 70-79

Nyakundi, D. N. (2015). The Effect of Interest Rates on Mortgage Uptake in Financial Institutions in Kenya. *Unpublished MSc Project*. University of Nairobi

Okang'a, A. (2015). The Effect of Mortgage Interest Rates on the Growth of Mortgage Financing Amongst Financial Institutions in Kenya. *Unpublished MBA Project.* University of Nairobi

Okidim, I. A. & Ellah, G. O. (2013). Enhancement of Economic Growth through Mortgage Financing and Capitalization. *G.J.C.M.P.,* 2(5), 8-11

Oster, G. L. (2003). The Determinants of Short-Term Interest Rates. *Unpublished Thesis.* University Of South Africa

Ritter, J. (2005). Economic Growth and Equity Returns. Pacific-*Basin Finance Journal* 13, 489–503

Sen, G. C. (2015). The Loanable Funds Theory of Interest Rates. Accessed online on 1/8/2016 from http://www.yourarticlelibrary.com/macro-economics/theories-macro-economics

Shahini, I. (2014). How is Mortgage Lending Influencing the Economic Growth in Albania. *International Journal of Science and Engineering Applications,* 3(4), 83-86

Shrestha, P. K. & Subedi, B. R. (2014). Determinants of Stock Market Performance in Nepal. *NRB Working Paper series,* NRB-WP-24, 2014.

Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics,* 70(1), 65-94

Syed, J. L. & Anwar, J. (2013). How Does Competition Affect Bank Risk-Taking? Journal of Financial Stability, 9,185–195

Tameme, M. E. (2009). Demand and Supply Conditions of Islamic Housing Finance in the United Kingdom Perceptions of Muslim Clients. *Unpublished Thesis.* University of Durham

Tran, T. (2013). Economic Growth and Balance of Payments Constraint in Vietnam. Paris-Dauphine University

Tsvihun, O. (2000). Economic Growth and Institutions: Mortgage Lending in Ukraine. Unpublished Thesis. National University-Kiev-Mohyla Academy

Uddin, G. S. & Alam, M. (2009). Relationship between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries. *International Journal of Business and Management*, 4(3), 43-51

Wang, L. (2012). Mortgage Securitization and Its Credit Risk Control. AlmaMater Studiorum– Università di Bologna

World Bank. (2011). Developing Kenya's Mortgage Market. The International Bank for Reconstruction and Development/The World Bank

APPENDICES

Appendix I: List of Commercial Banking Institutions in Kenya

1. African Banking Corporation Ltd.
2. Bank of Africa Kenya Ltd.
3. Bank of Baroda (K) Ltd.
4. Bank of India.
5. Barclays Bank of Kenya Ltd.
6. CFC Stanbic Bank Ltd.
7. Charterhouse Bank Ltd
8. Chase Bank (K) Ltd.
9. Citibank N.A Kenya.
10. Commercial Bank of Africa Ltd.
11. Consolidated Bank of Kenya Ltd.
12. Co-operative Bank of Kenya Ltd.
13. Credit Bank Ltd.
14. Development Bank of Kenya Ltd.
15. Diamond Trust Bank Kenya Ltd.
16. Dubai Bank Kenya Ltd.
17. Ecobank Kenya Ltd.
18. Equatorial Commercial Bank Ltd.
19. Equity Bank Ltd.
20. Family Bank Limited.

21. Fidelity Commercial Bank Ltd.

22. Fina Bank Ltd.

23. First community Bank Limited.

24. Giro Commercial Bank Ltd.

25. Guardian Bank Ltd.

26. Gulf African Bank Limited.

27. Habib Bank A.G Zurich.

28. Habib Bank Ltd.

29. I & M Bank Ltd.

30. Imperial Bank Ltd.

31. Jamii Bora Bank Limited.

32. Kenya Commercial Bank Ltd.

33. K-Rep Bank Ltd.

34. Middle East Bank (K) Ltd.

35. National Bank of Kenya Ltd.

36. NIC Bank Ltd.

37. Oriental Commercial Bank Ltd.

38. Paramount Universal Bank Ltd.

39. Prime Bank Ltd.

40. Standard Chartered Bank Kenya Ltd.

41. Trans-National Bank Ltd.

42. UBA Kenya Bank Limited.

43. Victoria Commercial Bank Ltd.

44. Housing Finance Corporation (HFC)

Appendix II: Research Data

Year	Quarter	Ln_Mortgage_Uptake	Mortgage_Interest_Rate	Ln_GDP	CPI	Credit_Risk	Ln_M3
2015	Q1	12.20	11.00	13.84	154.48	5.75	14.96
	Q2	11.95	11.50	13.79	159.71	5.72	14.98
	Q3	12.04	8.50	13.76	160.93	5.38	14.91
	Q4	12.09	10.00	13.75	163.27	6.01	14.95
2014	Q1	12.18	8.50	13.80	145.99	5.64	14.84
	Q2	11.86	8.50	13.73	149.27	5.79	14.87
	Q3	12.03	8.50	13.70	151.62	5.43	14.77
	Q4	12.05	8.50	13.70	152.09	5.43	14.81
2013	Q1	12.18	9.50	13.75	136.72	5.01	14.67
	Q2	11.84	8.50	13.66	139.46	5.31	14.72
	Q3	12.01	8.50	13.64	140.99	5.24	14.60
	Q4	12.05	8.50	13.67	143.25	5.02	14.65
2012	Q1	11.96	18.00	13.69	131.36	4.35	14.53
	Q2	11.99	18.00	13.62	133.63	4.46	14.58
	Q3	11.79	14.75	13.60	131.78	4.48	14.44
	Q4	11.75	11.00	13.62	133.35	4.52	14.48
2011	Q1	11.73	5.88	13.65	112.41	5.97	14.42
	Q2	11.55	6.25	13.55	119.56	5.38	14.45
	Q3	11.53	6.63	13.54	123.88	4.89	14.36
	Q4	11.65	15.17	13.58	128.81	4.37	14.39
2010	Q1	11.38	7.00	13.58	105.01	7.95	14.27
	Q2	11.49	6.75	13.48	105.65	7.42	14.32
	Q3	10.75	6.38	13.47	106.32	6.96	14.15
	Q4	10.88	6.00	13.47	108.07	6.25	14.22
2009	Q1	10.70	8.38	13.51	99.50	9.35	14.05
	Q2	10.75	8.00	13.44	101.91	9.01	14.10
	Q3	10.54	7.75	13.43	102.90	8.23	13.97
	Q4	10.62	7.00	13.45	104.07	7.94	13.99
2008	Q1	10.27	8.75	13.47	87.18	10.52	13.92
	Q2	10.31	9.00	13.44	92.14	9.43	13.96
	Q3	10.04	9.00	13.43	93.75	8.66	13.88
	Q4	10.15	8.75	13.45	96.38	8.96	13.94
2007	Q1	10.19	8.00	13.47	78.90	19.90	13.79
	Q2	10.11	8.50	13.37	78.46	14.98	13.83
	Q3	10.12	8.75	13.36	80.90	12.01	13.66
	Q4	10.14	8.75	13.38	82.68	10.60	13.72
2006	Q1	10.09	8.02	13.41	76.35	23.06	13.59
	Q2	10.10	9.75	13.31	76.39	22.29	13.64
	Q3	10.18	10.00	13.29	76.80	22.71	13.49
	Q4	10.15	10.00	13.31	78.27	21.82	13.56