EFFECTS OF MACROECONOMIC VARIABLES ON REAL ESTATE DEVELOPMENT IN KENYA

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DECLARATION

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

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DEDICATION

To my dad Joseph, mum Mary and siblings who encouraged and supported me throughout my entire study. May the Almighty God bless them abundantly.

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ABREVIATIONS AND ACRONYMS

ANOVA Analysis of Variance

CMA Capital Market Authority

CBK Central Bank of Kenya

CPI Consumer Price Index

EMH Efficient Market Hypothesis

FDI Foreign Direct Investment

GDP Gross Domestic Product

ICT Information Communication Technology

KNBS Kenya National Bureau of Statistics

LAPSSET Lamu Port -Southern Sudan-Ethiopia Transport Corridor

MPT Modern Portfolio Theory

NEMA National Environment Management Authority

NHA National Housing Authority

NSE Nairobi Stock Exchange

REITs Real Estate Investment Trusts

RWH Random Walk Hypothesis

SPSS Statistical Package for Social Sciences

ABSTRACT

The development of real estate sector in any context is highly affected by several economic factors. For example, the housing bubble is associable with; excessive desire for home ownership in an economy, buying for speculation, low interest rates, and residential real estate viewed as a safe harbor. To this extent, variables that influence the above variables such as inflation, GDP, Money supply, including international remittances are bound to affect the development of real estate. This study sought to establish the effects of macroeconomic factors on real estate sector development in Kenya. Independent variables were balance of payment, government expenditure, external government debt, foreign direct investments, taxation, interest rate, inflation rates, unemployment, capital market development and exchange rates. Development of the real estate sector was the dependent variable which the study sought to explain and it was measured by quarterly Hass Consult Property index. Secondary data collected on a quarterly basis for a period of 10 years (January 2008 to December 2017) was used. The study used a descriptive cross-sectional research design and a multiple linear regression model to analyze relationship between the variables. Statistical package for social sciences version 21 was used for data analysis purposes. The results of the study produced R-square value of 0.840 which means that about 84 percent of the changes in growth of the real estate sector in Kenya can be explained by the ten selected independent variables while 16 percent in the variation was associated with other factors not covered in this research. The study also found that the independent variables had a strong correlation with growth of the real estate sector (R=0.916). ANOVA results show that the F statistic was significant at 5% level with a p=0.000. Therefore the model was fit to explain growth of the real estate sector in Kenya. The results further revealed that individually only balance of payment and unemployment rate are statistically significant determinants of development of real estate sector in Kenya. This study recommended that measures should be put into place to improve and develop the real estate sector in Kenya by reducing both the prevailing unemployment rate levels and current account deficit. This study relied on secondary data and recommends in depth questionnaires and interviews covering all the 80 registered firms so as to compliment this research. Further studies should be conducted to incorporate other variables like money supply, poverty levels, technology, firm specific characteristics, political stability and other macro-economic variables. Showing the effect of each variable on the real estate sector's development will enable policy makers know what tool to use when controlling development of the sector.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Real estate investment plays a fundamental role by providing shelter to households, employment, and enhancement of income distribution as well as means of alleviating poverty (Masika, 2010). Real estate industry in Kenya has not adequately fulfilled this crucial role due to several factors that affect the sector. Kenya has witnessed an upsurge in real estate investment in the recent past especially in urban towns owing to a rise in residential homes' demand triggered by rural urban migration upsurge and office space demand (Nzalu, 2010).

The study was supported by the Behavioral Theory of Finance founded by Daniel Kahneman and Amos Tversky in the late 1960s. The theory attempts to explain the human perspective of investing and financing dynamics; emotions and psychology have undue influence on decisions made by the investors. Founded by Eugene Fama in 1970, Efficient Market Hypothesis (EMH) argues that supernormal profits are a near impossibility due to the competitive forces that drive investor behavior. According to EMH, prices in the market will reflect on all available information and thus in the long run, an investor will not make supernormal profits. Modern Portfolio Theory (MPT) founded by Harry Markowitz in 1952 also underpins this study. MPT attempts to explain the risk hedging tendencies explored by rational investors to maximize on portfolios expected return. The prediction of these three theories is that behavioral factors have significant effect on the development of an entity, industry and eventually on economic development.

The real estate sector in Kenya has been booming since the 2000s as the property market reacts towards increased demand. This increased demand for housing has been associated with a vast majority of rich investors investing in shopping malls, restaurants, residential apartments and office complexes. The government's expenditure on construction works such as rapid urbanization and airports expansion, expansion of the middle class and population growth have also contributed to the growing demand. According to 2017 Real Estate Report by Cytonn Investment, the greatest growth was reported on Construction industry at 16.2% ahead of Agriculture and Financial services which reported 8.1% and 11.9% respectively. Typically, foreign real estate firms are moving their operations into the country in an attempt to capture the promising market which is generating a return of 25% to 30% (Knight Frank Economic Report, 2016). According to the Kenya Financial sector stability report 2017, banks' credit to the real estate grew by 30.82%. Mortgage finance companies, Saccos, capital markets, Private Equities and insurance companies also contributed significantly to the growth in real estate as financiers of property markets.

1.1.1 Macro Economic Variables

Macro-economic variables refer particularly to factors of overall importance to the position of a country's economy both at the regional and national face. Mishkin (2004) defines macro-economic variables as the factors which are relevant to an economy as a whole and shake a great populace relatively than a select few of them. Macro-economic variables are majorly closely scrutinized by business, governments, and consumers due to their influence on overall performance of the economy. Kwon and Shin (1999) in their study concluded that economic growth, unemployment, interest rates, currency, inflation, exchange rate, money supply and balance of payments are the most impactful macroeconomic variables.

The measurement of macroeconomic variables varies depending on the exact variable in question. Economic growth implies the increase in a nation's capacity in production and its measurement index is the gross domestic product growth rate. Inflation is the persistent increase in overall price levels of goods and services in an economy over a span of time. A Consumer Price Index (CPI) is the parameter commonly used to measure the levels of inflation (Muthama, Mbaluka & Kalunda, 2013). Central bank lending rate is usually used as measure of interest rates. Exchange rate is the rate at which a currency is exchanged for another (Simiyu & Ngile, 2015). The exchange rate of Kenya Shillings for the US dollar is normally used as the dollar is the most traded foreign currency. Money supply can be defined as the total amount of money in circulation within a country for a given period of time. Money currently at public disposure, transaction deposits held by deposit institutions, savings and time deposits are the commonly used measures of money supply (Shrestha & Subedi, 2014).

1.1.2 Real Estate Development

Real estate includes land, surrounding nature and permanently attached and immovable property such as buildings, houses and homes. It can also be defined as property consisting of land and anything permanently fixed to it and its natural resources such as water, minerals or vegetation (Brown & Matysiak 2000). The real estate sector is made up of three major segments namely agency, investment and operations (Kimmono 2010). Real estate market involves construction of permanent fixed assets and involvement of capital and labor with aim of earning favorable returns on the capital (Muli, 2013). Real estate investing entails purchase, ownership, management, renting of land or sale of real estate for profit whereas real estate operations involves developing, renting, leasing, managing

commercial and residential properties, consultation services, real estate appraisal services, brokerage and agency services (New York Times 2016). There are various ways to invest in real estate which ranges from developing multi-family housing, buying rental property as well as REITs (Makena, 2016).

Several benefits accrue from development in the real estate sector; property tax on the new constructions which contribute positively to the economy in terms of funding for infrastructure developments, employment in the real estate sector thereby contributing to a reduction in unemployment and economic growth as income earned is spent locally (Economic Impact of Commercial Real Estate, 2014).

1.1.3 Effect of Macro Economic Variables on Real Estate Development

Both theory and empirical literatures hold that the thriving of a nation is directly associated with certain macroeconomic factors such as economic growth, unemployment, balance of payments, inflation, remittances, exchange rate, money supply and interest rate. The financial performance of any sector is influenced by variations in economic fundamentals which in turn affect future prospects in the industry. According to Gazi, Uddin and Mahmudul (2010), a rising index or consistent growth in financial performance is an indicator of a growing sector whereas fluctuations in financial performance indicate economic instability in a country.

McKinnon (1973) theory argues that macro-economic variables for instance real interest rates, exchange rates and inflation should be monitored as they influence the diverse economic fundamentals and hence economic status. McKinnon posits that holding interest rates below market equilibrium leads to an increase in investment demand but the real investment may remain unaffected. However, according to market efficiency theory the

prices of all variables should not be influenced by other factors apart from demand and supply (Fama, 2000). According to Fama, a market is efficient market if stock prices indicate all the information regarding the market.

Investment is a critical component of GDP because it increases productive capacity as well as create employment. A rise in real estate investment creates a positive wealth effect. People can re-mortgage against their property and this increases the value of real estate hence increasing consumer spending. Real estate contributes to the GDP of an economy through the money that is spent on housing services as well as residential investments (Kipkirui, 2015). According to Nzalu (2012), there is a direct relationship between GDP and real estate investment. The government can employ different policies to influence a section or the whole economy at large in a certain way. Subsidies and tariffs can be employed where the government taxes the general public and the money is directed towards real estate sector with a view of making it more profitable. In addition, creating conducive legal environment e.g. protection of intellectual property rights as well as improvement of general infrastructure will have a positive impact on real estate sector (Wisniewski, 2012).

Zhou (1996) contradicted the perceived notion that there exist an association between interest rate, exchange rate, economic growth, inflation and development. His study tried to demonstrate that there are other fundamental factors affecting development most importantly the efficiency of the market that result in the market self-regulating due to availability of all fundamental market information and hence no one has the upper hand or the ability to beat the market. The hypothesis that development move one-for-one with ex ante economic variables is rejected.

1.1.4 Real Estate Development in Kenya

Kenya has in the recent past experienced a big boom in the real estate sector and was ranked as the fourth highest contributor to the economy in response to increase in demand attributed to rural-urban migration. (Kenya National Bureau of Statistics, KNBS, 2013). The middle class with demand for housing in the city is fast rising. Kenyan Government through its policies and infrastructure development has contributed to investment in Kenyan real estate sector. Devolution and increased investment in infrastructure such as telecommunication system, electrification, ICT has contributed to real estate growth in urban Centre such as Mombasa, Kisumu, Eldoret and Nakuru. Road networks especially Northern, Eastern and Southern bypasses have attracted real estate investment in these areas. The LAPPSET and standard railway gauge (SGR) is also expected to have the same effect. The government announced the reduction in corporate tax rate to 20% from 30% for developers who produces more than 1000 houses in a year and a waiver on levies payable to NHA and NEMA. This is expected to attract potential investors and thus cater for the annual deficit of 200,000 (Cytonn Investment Report, 2015).

Despite fluctuation in economic variables overtime, Kenyan real estate sector has experienced tremendous growth. Kenya's strategic position in East Africa and its developing economy has increased the number of overseas investors putting their money in tourism and real estate sector (CIA fact book), the holiday homes, resorts and on the retirement property developments situated in the seashores and in the game reserves. Residential property investment opportunities do exist for small personal investors while for large and corporate investors, there are real estate possibilities developing for them

daily if they are looking for a true emerging market with long term sustainable possibility of yield, profit and growth (Property Kenya, 2015).

According to CFC Stanbic bank survey (CFC, 2014), real estate's market has been vibrant in Kenya for the last ten years owing to an increased rate in rural-urban migration, individual's desire for own home ownership and diaspora remittances which has led to exponential increase in urban property prices. The rental charges have increased greatly and are likely not to decrease in the short run (Mwithiga, 2010). Even though the government pledged to supply 150, 000 new housing units annually, it will not cater for the shortfall because of the persistent rural- urban migration. The real estate market can attest that it is a major player and contributor to the country's economy. Its share in the country's economy consists of Billions of shillings and its investors consists of farmers to multinational companies' executives all wanting to be part of the sector (Makathimo, 2013).The real estate sector GDP has consistently grown on an annual basis by 10% over the last 5 years from Kshs.376 trillion in the year 2012 to Kshs.533 trillion in the year 2016. (Economic survey 2017, Kenya National Bureau of Statistics)

1.2 Research Problem

The development of real estate sector in any context is highly affected by several economic factors. Real estate development could be measured as the collective total investments (costs of investing in real estate) or the price index (the asking prices). In this sense, then different factors can cause development (Athanasoglou et al., 2005). For example, the housing bubble is associable with; excessive desire for home ownership in an economy, buying for speculation, low interest rates, viewing residential real estate as a safe harbor, and bad lending practices. To this extent, variables that influence the above variables such

as inflation, GDP, Money supply, including international remittances are bound to affect the growth of real estate and other sectors in the economy (Bashir, 2003). According to Loyford and Moronge (2014), other intervening factors that largely affect the increase in the real estate markets are the level of an individual's income, demographics and the buyer's age .The current study seeks to determine whether fiscal policy is a significant factor on real estate's growth.

In Kenya, increased levels of middle level income group and increased migrations from the rural to the urban regions has resulted in rapid development of the real estates in Kenya. Cytonn Investment (2018) have attributed the increased purchasing power in the real estate sector to increased income, availability and cost of credit and changing lifestyles. The current government has given a pledge that it will supply 150, 000 new housing units yearly. Even with this new supply the increasing rural to urban migration makes it difficult for this gap to be bridged. The real estate market can attest that it is a major player and contributor to the country's economy. Its share in the country's economy consists of billions of shillings and its investors consists of farmers to multinational companies' executives all wanting to be part of the sector (Makathimo, 2013).

Several studies have documented the effect of various variables on real estate development. Karlson and Nordstrom (2007) associated macroeconomic factors to real estate financial performance; Venkstech (2013) associated macroeconomic factors to performance of the real estate sector in his survey of the real estate bubble in Singapore while Manni and Chane Teng (2008) established a significant relationship between macroeconomic factors and French real estate investment trust performance. Baum and Crosby (2012) did a study and established that interest rates, economic growth and speed of real estate sales as well

as ease of accessing finance were the major factors affecting real estate investment. Rodenholm & Bernardi (2007) studied the macroeconomic effects on securitized real estate markets in Sweden and Switzerland and investigated the extent to which influenced real estate stock prices before and after the financial crisis outbreak. However, all this studies were conducted in different contexts and their findings cannot be generalized in the current context.

Locally, Ouma (2015) in his study on effect of macro-economic variables on real estate prices demonstrated that high interests' rates and inflation contribute to high real estate prices while high GDP leads to low house prices. Kamau, Mboya and Mogaka (2015) showed that a positive relationship exists between GDP per capita, informal employment, inflation and mortgage growth in Kenya. Bioreri (2015) indicated that growth in exchange rate, interest rate, Diaspora remittance, inflation rate and real GDP together as opposed to individually affect the performance of the real estate sector. Muthee (2012) examined the connection between economic growth and the real estate prices in Kenya. According to the study results, it was established that there was a connection between the variables. Irandu (2017) conducted a study on the effect of selected macro-economic variables on real estate sector development in Kenya which is related to the current study. However, the study focused only on selected macro-economic variables while the current study took into account other variables. Therefore, this study attempted to answer the research question; what is the effect of macro-economic variables on real estate development in Kenya?

1.3 Research Objective

This study sought to establish the effects of macro-economic variables on real estate development in Kenya.

1.4 Value of the Study

Findings obtained from this study can be used during formulating policies by the government and any other institution involved in policy formulation for the real estate sector. This study's findings will be important to the government as it regulates the performance of the sector, the study will enlighten on the effect of fiscal policy on the development of real estate sector.

The findings of this research are of much interest to real estate investors as it informs them on the effects of macro-economic variables on development in the real estate industry and as well as point out other significant relationships that need to be researched on a deeper level. This study is also significant to the potential consumers of the real estate sector. Buyers could gain from understanding and acquiring strategic practices which is helpful to the various investors when deciding what particular investment is suitable to undertake.

The study's findings will be used for future reference by researchers, students and scholars who seek to undertake correlated or similar studies. The study will also benefit researchers and scholars in the identification of other fields of research by citing related topics that require further studies and the empirical studies to determine study gaps. The study will greatly contribute to the real estate growth.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The aim of this chapter was to review theories that form the foundation of this study. In addition, previous empirical studies that have been carried before on this research topic and related areas are also discussed. The other sections of this chapter include effect of macro-economic variables on real estate development, conceptual framework showing the relationship between study variables and a literature review summary.

2.2 Theoretical Framework

Theoretical framework provides a foundation for understanding the theoretically expected relationship among the study variables and in this case, effect of macro-economic variables on real estate development. The theories selected for this study are the Efficient Market Hypothesis, Modern Portfolio Theory and Behavioral Finance Theory.

2.2.1 Efficient Market Hypothesis

Fama (1970) who is one of the promoters of EMH advanced the view that the trading value for stocks is usually its fair value and consequently, it is not possible for investors to purchase undervalued stocks or inflate prices of stocks in sale arrangements. Based on the above, expert market timing or stock selection would not result into outperforming the overall market hence the only way an investor would obtain higher returns is by chance or by buying riskier investments. According to EMH, there exist three forms of efficiency: Weak form efficiency results whereby prices of securities (bonds, stocks or property) reflect all historical public information. Second is the semi-strong efficiency that arises

where stock prices reflect historically publicly available information such that prices change instantly to reflect release of new information. The strong form of efficiency asserts that securities' prices reflect historical, public and even private information.

While there exist a huge assortment of validation in support of EMH, numerous disagreements have been raised. Adversaries of the EMH likewise indicate occasions, for instance, the coming down of the 1987 security exchange where Dow Jone Industrial Average (DJIA) dropped by excess of 20% in only a day, which confirms that stock costs are able to truly stray from their normal qualities. Commentators have faulted the faith in reasonable markets for a large number of the late 2000s money related emergencies (Asava, 2013). Thus, in light of these reactions, defenders of the hypothesis have argued that market proficiency does not imply exhibiting no instability about the future yet rather, it is an outline of the world which generally may not be constant, and the market essentially is effective for speculation in most instances (Asava, 2013).

The main point of contention is that the EMH assumes that investors are rational in their dealings, they have access to all available information and that their market expectations are homogenous. These assumptions beat the point of trading after all given that trade signals existence of heterogeneous expectations. While the seller expects a dip, the buyer anticipates a rise in the stock price, and hence bears and bulls. Also, it is not practical for all market participants to have the same information; if it were so, there would be no need for communication. Likewise, behavioural economists do not agree with the notion of rational investors, it purports irrational exuberance (Shostak, 1997). This theory is relevant to the current study as it recognizes the role of external factors in influencing asset prices and in effect the growth of the various sectors that make up an economy.

2.2.2 Modern Portfolio Theory

Harry Markowitz (1952) coined the modern portfolio theory on his paper for portfolio mixture. This theory emphasised on how expected returns can be maximised by establishing portfolios that are weighed through risk levels. Markowitz concluded that institutions can construct a portfolio that would give the highest expected returns at a manageable risk level. This theory tries to maximize profits in a given portfolio risk or equally reduce the risk in a given level of expected returns by carefully selecting proportion of various investments (Fabozzi, Gupta, & Markowitz, 2002).

This theory identified two types of risks which investors need to be conscious of, that is, a systematic risk and unsystematic risks. Systematic risk is inherent in the volatility of the entire market or some part of it, while unsystematic risk is associated with the extent to which an individual investment is volatile. Investors are therefore instructed to combine portfolios by guaranteeing that, specific risk carried by that specific investment in the portfolio is offset by a lower specific risk in another investment.

Macroeconomic variables generally affect the business environment in an economy (Brueggeman & Fisher, 2011). A volatile environment with economic volatile exchange rates or inflationary pressures, infer that business returns to firms and real estate firms shall fluctuate or are uncertain. Financial performance by firms in such environments fluctuates thus affecting their growth and development. Real estate developers should thus be keen on economic changes and adopt accordingly as quickly as possible (Pandey, 2009).

2.2.3 Behavioral Finance Theory

Psychologists have alleged that human beings usually exhibit emotional and cognitive biases that lead them to act in a rather irrational behavior. Behavioural finance was popularized in the 20th century, with Kahnemann and Tversky (1974) outlining behaviors and biases that hinder human beings from acting rationally. They labeled these as representative heuristic, anchoring, and the availability bias. These cause people to hold stereotypes, make decisions founded on a whimsical starting point, and evaluate the probability of an occurrence based on similar past events. Behavioral finance holds that stock prices are affected by heuristic errors and biases, emotions, frame dependence, and social influence hence may not be the true fundamental value (Chandra, 2008).

Critics of behavioral finance are mostly supporters of EMH. Fama (1998) insisted that despite there being market anomalies that cannot be elucidated using modern financial theories, EMH cannot be dismissed totally for behavioral finance. He further found out that behavioral finance resembles a compilation of market anomalies that are explicable using market efficiency. Behavioral economics' critics contend that the observed heuristics are short-term manifestations that are corrected in the long run. They have often stated that behavioral economics limits itself to digging for failures of computation and cognition. Often people react to new information without looking at the broad picture of other underlying factors. This would cause non-proportional variations in stock prices. Alternatively, people who have developed a negative stereotype against a certain security would not dare invest in it even if positive information was put forth in regards to it. Behavioral finance recognizes that people's decisions are not solely driven by logic and rationale, but often influence by personal experiences and preferences. This theory is

related to this study as it recognizes that human beings exhibit behaviors that can affect development of firms and sectors other than economic variables.

2.3 Macro Economic Variables and Real Estate Development

This section presents the review of conceptual economic factors that are assumed in this study to influence the development of real estate sector. The sub-section looks at foreign direct investment, gross domestic product, employment and income, inflation and interest and lending rates. They are the key independent variables for the study.

2.3.1 Foreign Direct Investment

According to Bloomstrom and Kokko (2003) in their article on the economics of FDI incentives, FDI creates new employment in the host nation. New employment opportunities in the host country result to an increase in per capita income of the country and a reduction in unemployment rate. Further, increased income is likely to lead to an increase in the demand for housing a factor that will make the real estate sector of a country very attractive due to the growing market attributable to the increased demand (Kamau, Mogaka & Mboya 2015). Increased demand which is an indicator of large revenue from the sector is bound to push housing prices up and increase the number of developments coming up.

2.3.2 Interest Rates

The real interest rate signifies the cost of the financing of investments. Research has established that it has a profound effect on the prices of residential property both in the local scenario as well as the international scenario. In this regard, money supply is considered a great determinant of the level of interest rates because by increasing the supply of money interest rates will be pushed down and financial performance in the real estate

market will be boosted since it will be more attractive for investors who will choose to invest. The vice versa will occur if money supply is reduced (Barksenius & Rundell, 2012).

Interest rate plays an important function in the progress of the real estate. Interest rate influences a real estate developer who provides housing for the real estate market in a huge way (Li, 2016). When interest rate goes up, the construction costs for the developers decreases such that prices in the real estate market increases. High interest rates leads to increased cost of buying houses by buyers and this discourages buyers from taking loans to purchase houses. Therefore, the demand for housing decreases when interest rate increases and there's a general fall in the trend of prices in the real estate sector.

2.3.3 Inflation

Inflation can have both positive and negative effects. Thereby in periods of continuous upward price movements, the costs of building and maintaining property will rise as well. Hence too much inflation is expected to cause a decrease of the financial performance of firms in the real estate business. Investors who engage in real estate property sale will be forced to include a premium for inflation (Biller, 2007).

The real estate market exhibits a long-term relationship with inflation. Blanchard (2010) posits that there is a positive effect of increased demand on prices of products. This theory further suggests that increase in output and the level of income create demand since higher levels of investment and consumption will be experienced. The general level of prices was greatly lower than that of the stock prices before the crisis period.

2.3.4 Unemployment

During the pre-crisis era, the real estate market and unemployment are seen to correlate in a highly negative manner. Real estate securities are developed more when unemployment levels reduce and news about unemployment affect the market. (Lind, 2011).The real estate market has sentiments that are strongly negative but the labor market is not very easily affected by this. The labor market will still be skeptic and experience the high rates of unemployment despite prices of the real estate market recuperating during a crisis. During the pre-crisis era, there is the existence of a negative relationship that becomes barely significant during the crisis period (Birz & Lott 2010). How the labor market in Kenya responds to the stock market of real estate however remains to be more correct. The government can use monetary and fiscal policies in the short run to enhance demand.

2.3.5 Economic Growth

Although economic growth is expected to have a desirable effect with stock market development, there is not necessarily a strong relationship with real estate markets (Bouchouicha & Ftiti, 2012). Unanticipated changes affect securitized real estate market. An increase in real output should result in higher innovation pace and industrial production (Ewing & Payne 2003). Companies can take advantage of a growing economy and increase revenues without significantly affecting internal competition balance within the sector (Koller et al., 2010). When the income levels increase, it stimulates domestic demand for residential properties and office space. Sweden and Switzerland continue to attract foreign investments because they have managed to confront the financial crisis with good economic conditions and therefore had a solid economic foundation.

2.3.6 Exchange Rates

Exchange rates often fluctuate and many times in a single day. Frequent travelers are well aware of this, as how much they can afford to spend on a vacation depends on the how strong the local currency is and what it is at the point of transaction. The watching and trading of currencies have even spurned an entire business; Forex trading where people buy and sell currencies to make money. Currencies fluctuate because of supply and demand. Every seasoned investor knows that when the demand for the currency goes up and the supply - in this case, property - either decreases due to overwhelming interest or remains the same, then the value of the currency increases. However, when there are people trying to sell but not many are interested in buying, the value drops (Chitty, 2015).

Exchange rate has significant impact on the real estate industry owing to its information content to the investors. It has an impact on how individuals who live outside the country arrive at a decision to purchase products or not. Exchange rates affect the purchasing power of property abroad. The price of real estate is not affected by a depreciation in currency of a nation's as long as the depreciation does not sustain as the prices will become too dear for the consumers. A nation spends more on imports due to depreciation of currency thus reducing disposable income and making house purchase more expensive (Gunjan, 2013).

2.3.7 Taxation

The effect of taxes on growth of an economy can only remain positive if taxes levied create the right incentives for the efficient allocation of resources in a given country. In order to improve the welfare of its citizens, a given government should adopt fiscal policies with a tax structure that maximizes positive externalities while minimizing negative externalities, such as pollution and corrupt practices. Musgrave and Musgrave (1980) postulated a law

of public expenditure growth in the United States of America, where, as national income per capita grew, so did government tax revenue when compared on percentage basis to the GNP. The implication of this is that as the U.S.A registered economic growth, so did the country's tax effort. The authors' findings are in conformity with Ariyo (1997) and Hebel (1995) empirical findings which indicates that as a country's economy grows, its tax base also grows. However, growth rates of both the economy and tax capacity tend to differ among the countries for different periods of time, due to both short and long term causative factors, including internal and external economic shocks.

2.3.8 Government External Debt

According to economic theory, government external debt is good for a country's economic growth which in effect affects the various sectors that make up the economy. However, this is only possible up to a certain level beyond which its effects are adverse to an economy. The theory of debt overhang as explained by Krugman (1988) clearly demonstrates how accumulation of high public debt leads to low FDI inflows translating into low economic growth of a country.

According to Krugman (1988), debt overhang refers to a situation where the existing external debt is very large. The theory suggests that foreign investors will be discouraged from investing in a country that has a large external debt since part of their proceeds would be used to service the debt through high taxation. On the other hand, the theory postulates that reducing debt obligation results to a rise in both domestic and foreign direct investment thus minimizing the chances of debt default.

2.3.9 Balance of Payments

The BOP can be defined as trade balance between two nations. It is a reflection of all the payments and receipts for dividends, products and interests between the two nations. A country has a negative balance of payment in the current account when its imports are greater than what it is exporting. This is also referred to as a deficit and it shows that a nation needs more foreign currency than it acquires from the products that it's exporting. The balance of trade and earnings on foreign investment of a country are reflected by its current account which involves transactions such as its imports, exports and debt, among others (Higgins & Klitgaard, 1998).

More expenditure of its currency by a country on imports than on exports causes a deficit in the current account. Soaring current account deficits are often an antecedent to difficulties in balance of payments (Higgins & Klitgaard, 1998). Theoretically, economies consuming more than they are generating through running large deficits, are unable to have enough funds for investing in the economy and thus growth of the various sectors. However, an increase in exports relative to imports may imply increase in income for the locals which can end up developing the various sectors that make up an economy.

2.3.10 Capital Market Development

According to Market (2008), Kenya’s capital markets play an important role in real estate development, through introduction of REITs owing to the need for additional financial instruments (Chan, 2002).Capital markets play a role in resource mobilization and allocation by providing alternative markets where investment is packaged into securities that enable those who are unable to invest in such asset classes, an opportunity to invest (Cytonn, 2016).

REITS in the capital markets, as a way to raise funding for real estate developments, is likely to attract more institutional investors owing to several benefits: Access to investment in large scale real estate projects for small individual investors, diversification for investors, liquidity advantage over direct investment in privately traded underlying real estate assets, professionally managed portfolio, reduced development costs, tax advantages and limited legal liability for the shareholders of a tax qualified REIT, and a regular income stream for the investor via the dividends distributed by the REIT (Kahindi,2016). CMA put up the regulatory framework in 2011 to facilitate capital raising and financing real estate projects through REITs. Stanlib Fahari i-REIT, which is the only listed REIT started trading in 2015.

2.4 Empirical Review

Many empirical studies have been done locally and internationally on effect of macro-economic on development in the real estate sector. However, these studies findings are conflicting and carried in differing contexts. The findings of the studies are discussed in this section.

2.4.1 Global Studies

Baum and Crosby (2012) did a study on the impact of macroeconomic variables in real estate returns to examine whether asset returns are persistently affected by the factors. Their selection of macro-economic variables included government policies, GDP, interest rates and levels of inflation. The study concluded that unexpected inflation, term structure of interest rates, real Treasury bill rate and growth rate in real per capita consumption have a systematic influences on commercial real estate returns hence affecting the level of investment in the sector.

Renigier-Bilozor and Wisniewski (2012) used Italy and Polland to determine Europe's influence of macroeconomic conditions on real estate residential property and prices indices. Quarterly time series data constituted the material for testing empirical results. The models created indicate that housing property markets in Europe is affected by the financial and economic condition. In spite residential property markets being located in different areas of Europe, they are related in a number of ways. The economic and financial crisis of nations has an impact that varies in the prices of real estate

Mabutho (2013) undertook a study in South Africa to ascertain the association between financial and macro-economic variables on South Africa's real estate sector. Findings of the study showed that, growth in the market of real estate is affected mainly through interest rates that are short-term and inflation levels in the short run. However, in the long-run, it was found that growth is majorly affected by household disposable income followed by inflation. He concluded that an increase in household disposable income affects property returns in a positive way leading to more investment in real estate at least in the short-run. However, in the long-run, the effect is a decrease in property returns leading to a decline in investment in the real estate sector.

Rodenholm and Dominique (2013) undertook a comparative study of Sweden and Switzerland which aimed at establishing the macroeconomic effects on securitized real estate markets. The study investigated to what point these macroeconomic factors before and after the occurrence of financial crisis in 2007, affected the real estate stock prices. The results indicate that during the pre-crisis and crisis period, macroeconomic impacts on real estate stock prices exhibited differences among small economies and inconsistencies. The conditions of the financial markets that keep changing cannot be fully described by

theoretical views, they have to be analyzed in a broader economic perspective. The real GDP per capita, term structure and share indices are factors that show some consistency with regard to the real estate market.

Aondohemba and Lawrence (2015) study sought to determine the objects responsible for the thriving of commercial property investments in Lagos city in order to avoid the use of the rule of thumb in guiding decisions to invest. The factors revealed from each location's market included nature of the location, infrastructure, and growth of rents, security features and the cost of construction materials. The crucial factors noted in all the sub-markets were housing structures conditions, and a mixture of legal, economic and socio-cultural factors.

2.4.2 Local Studies

Muli (2013) researched on what indicator affects Kenya's real estate investment expansion. His study examined the growth of gross domestic product, interest rates, populace growth, and rates of inflation that affected results of real estate investment. Result showed Gross Domestic Product had a higher figure of 83 %, growth of inflation 78 % and 75 % for interest rates. Populace growth put in least value 29 percent. The research was conducted based on secondary source of data which might be conflicting sometimes indicators touching the progress in real estate investment in Kenya.

Juma (2014) established the impact of macro-economic variables on growth of real estate investment in Kenya. The study used secondary data on annual real estate investments growth as computed from the Hass Consult. The study established a strong positive association between growth in real estate and exchange rate fluctuations, growth in

diaspora remittances, growth in money supply, inflation. The study concludes that macro-economic variables and real estate investment growth have a strong positive relationship.

Gwadiva (2017) explored the impact of FDI inflows on Kenya's financial performance of the real estate sector using a population of 80 real estate firms that form the real estate composite index. During January 2007 to December 2016, secondary data collection was undertaken in quarterly periods. A descriptive cross-sectional research design and a multiple linear regression model was used to analyze the association between the variables. Results revealed that individually, FDI inflows, interest rates, exchange rates and inflation were statistically insignificant determinants of Kenya's real estate financial performance.

Irandu (2017) undertook a research study to find out the impact of macro-economic factors to real estate development in Kenya during the period January 2007 to December 2016. The independent variables were interest rates, inflation rates, economic growth, money supply, capital, credit growth and exchange rates. Economic growth was found to have a significant positive impact on Kenya's real estate development while money supply, interest rates, exchange rates, capital, credit growth and inflation were individually and statistically insignificant determinants.

2.5 Conceptual Framework

Both theory and empirical literatures hold that the thriving of a nation is directly associated with certain variables in the economy such as economic growth, unemployment, balance of payments, inflation, remittances, exchange rate, money supply and interest rate. Securities exchange stock price indices can be used as a measure of real estate development. These indices are used as benchmark when measuring shares and fixed

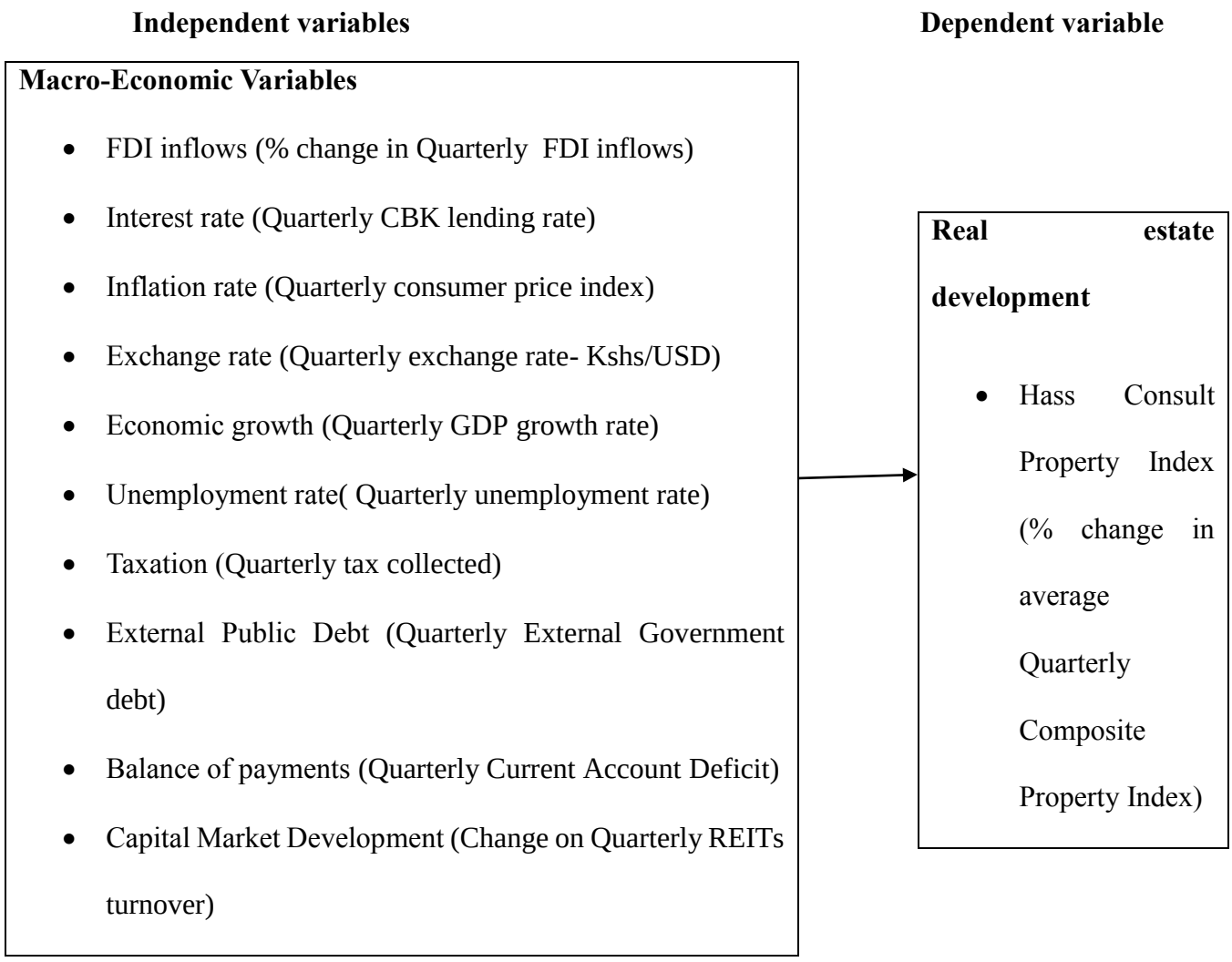
interest stock performance (Barkham, 2012). Property index should be derived from large sample free from influence of one dominant investor where performance is segmented and considered separately for each property category (Kingori, 2017). The financial performance of any sector' is influenced by variations in economic fundamentals and these fundamentals' affect future prospects. Housing prices and real estate investment are common parameters employed in measuring real estate sector development.

According to Gazi, Uddin and Mahmudul (2010), a rising index or consistent growth in a sector is an indicator of a growing economy whereas fluctuations in growth indicate economic instability in a country. As demand for housing increases, there is an increase in housing prices as well as increased investment in real estate as firms attempt to capture the increased demand (Knight Frank Economic Report, 2011). It can therefore be said that due to the positive relationship between housing demand, real estate prices and investment, the parameters present a suitable measure of the development of the real estate sector. The indices are commonly produced by real estate investment firms such as Hass Consult and Real Estate Ltd. Hass Consult Property index was used to measure the real estate development. The current study attempted to establish the effect of macroeconomic variables on real estate development in Kenya.

The conceptual model developed below portrays this expected relationship between the study variables. The independent variables are foreign direct investments, interest rates, inflation, exchange rates, economic growth, unemployment, taxation, external public debt, balance of payment and capital market development. Real estate development in Kenya was the explained variable and it was measured by quarterly percent growth in Hass

Consult Property index. The indices are calculated from 163,000 verified Kenyan property observations in the public domain, along with Hass's internal records.

Figure 2.1: The Conceptual Model



Source: Researcher (2018)

2.6 Summary of the Literature Review

Various theoretical frameworks seek to explain the concept of economic variables and the development of different sectors. Three theories have been discussed in this chapter: modern portfolio theory, efficient market hypothesis and behavioral finance theory. Some

of the key macroeconomic variables of real estate development have also been discussed in this section. Several empirical studies done internationally and locally on development of the real estate sector have been discussed in this chapter. From the foregoing, it is notable that there is lack of consensus on the main macro-economic variables that determine development of the real estate sector. Thus the study sought to respond to the research question: What is the effect of foreign direct investment inflows, unemployment, interest rates, inflation rates, economic growth, capital market development, taxation, Government external debt, balance of payments and exchange rates on development of the real estate sector in Kenya?

Table 3:1 Summary of Empirical Review

Author(s)	Focus of Study	Model/Variables	Findings	Limitations of the study	Address in the current Study
Baum and Crosby (2012)	Impact of macroeconomic variables in real estate returns	Dependent Variable; Real Estate returns Independent variables; Government policies, Gross Domestic Product, Interest rates Inflation.	Unexpected inflation, interest rates, real Treasury bill rate and real per capita growth rate consumption influences commercial real estate returns	The study used few macroeconomic variables in a foreign country which may not be applicable in Kenyan context	The study was carried out locally and has incorporated 10 macroeconomic variables.
Renigier-Bilozor and Wisniewski (2012)	Europe's influence of macroeconomic conditions on real estate residential property and prices indices;	Dependent Variable; Housing property markets Independent variables; Financial conditions Economic Conditions,	Housing property markets in Europe is affected by the financial and economic condition. The economic and financial crisis of nations has an impact that varies in the prices of real estate	The study used few macroeconomic variables in a foreign country which may not be applicable in Kenyan context	The study was carried out locally and has incorporated 10 macroeconomic variables.
Mabutho (2013)	The association between financial and macro-economic variables on South Africa's real estate sector.	Dependent Variable; Real Estate Growth Independent variables; Interest Rates Inflation Household Disposable Income	Real estate Growth is affected mainly through interest rates that are short-term and inflation levels in the short run. In the long-run, it was found that growth is majorly affected positively by household disposable income	The study used few macroeconomic variables in a foreign country which may not be applicable in Kenyan context	The study was carried out locally and has incorporated 10 macroeconomic variables.

Rodenholm and Dominique (2013)	Comparative study on macroeconomic effects on securitized real estate markets in Sweden and Switzerland.	Dependent Variable; Real Estate Investment Independent variables; real GDP per capita, term structure share indices	The results indicate that during the pre-crisis and crisis period, macroeconomic impacts on real estate stock prices exhibited differences among small economies and inconsistencies. The real GDP per capita, term structure and share indices are factors that show some consistency with regard to the real estate market.	The study used few macroeconomic variables in a foreign country which may not be applicable in Kenyan context	The study was carried out locally and has incorporated 10 macroeconomic variables.
Aondohemba and Lawrence (2015)	Investment performance indicators of selected Lagos commercial properties	Dependent Variable; Investment of commercial properties Independent Variables; building materials costs, location, road infrastructure quality, rental growth, security Condition of the premises; mixture of socio-cultural, political and economic factors	The factors revealed from each location's market included nature of the location, infrastructure, and growth of rents, security features and the cost of construction materials. Crucial factors noted in all the sub-markets were housing structures conditions, and a mixture of legal, economic and socio-cultural factors.	The study was carried out in Nigeria; the findings may not be applicable in a Kenyan context	The study was carried out locally and has incorporated 10 macroeconomic variables.
Muli (2013)	Macro-economic indicator affecting Kenya's real estate investment expansion.	Dependent Variable; Real Estate Investment Independent Variables; gross domestic product, interest rates, populace growth, and rates of inflation. exchange rate fluctuations,	Result showed that Gross Domestic Product, inflation and interest rates significantly affected real estate investment in Kenya. Populace growth put in least value 29 percent.	The research was conducted based on secondary source of data which might be conflicting sometimes. Parametric tests were	The study was carried out locally and has incorporated 10 macroeconomic variables.. Parametric test were carried out to

		growth in diaspora remittances, growth in money supply, inflation		not done. Fewer independent Variables	test the suitability of the data
Juma (2014)	Impact of macro-economic variables on growth of real estate investment in Kenya.	Dependent Variable; growth in real estate Independent Variables; Exchange rate, Diaspora remittances, Money supply, Inflation	The study established a strong positive association between growth in real estate and exchange rate fluctuations, growth in diaspora remittances, growth in money supply, inflation.	The study used secondary data with a few independent variables	The study carried out has used 10 macroeconomic variables. Parametric test were carried out to test the suitability of the data
Gwadiva (2017)	Effect of FDI inflows on Kenya's financial performance of the real estate sector	Dependent Variable; Real Estate financial performance Independent Variables; FDI inflows, interest rates, exchange rates and inflation	Results revealed that individually, FDI inflows, interest rates, exchange rates and inflation were statistically insignificant determinants of Kenya's real estate financial performance.	Secondary data was used in the research with a few independent variables	The study carried out has used 10 macroeconomic variables. Parametric test were carried out to test the suitability of the data
Irandu (2017)	undertook a research study to find out the impact of macro-economic factors to real estate development in Kenya	Dependent Variable; Real Estate Development Independent variables; interest rates, inflation rates, economic growth, money supply, capital, credit growth and exchange rates.	Economic growth was found to have a significant positive impact on Kenya's real estate development while money supply, interest rates, exchange rates, capital, credit growth and inflation were individually and statistically insignificant determinants	Few independent variables	The study carried out has used 10 macroeconomic variables. Parametric test were carried out to test the suitability of the data

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In order to determine the effects of macro-economic variables on real estate development in Kenya, a research methodology is necessary to outline how the research was carried out. This chapter has four sections namely; research design, data collection, and diagnostic tests and data analysis.

3.2 Research Design

A descriptive research design was employed in this study. Descriptive design was utilized as the researcher is interested in finding out the state of affairs as they exist (Khan, 2008). This research design was appropriate for the study as the researcher is familiar with the phenomenon under investigation but want to know more in terms of the nature of relationships between the study variables. In addition, a descriptive research aims at providing a valid and accurate representation of the study variables and this helps in responding to the research question (Cooper & Schindler, 2008).

3.3 Population of the Study

This refers to items with characteristics that a researcher intends to study. The study population was all residential real estate developments in Kenya as per Hass Consult Property index used to measure the asking price changes of residential housing nationwide. The index covers over 320 suburbs and towns across Kenya.

3.4 Data Collection

The study used secondary data to be obtained from different sources such as Central Bank

of Kenya (CBK), NSE, Hass Consult and the Kenya National Bureau of Statistics (KNBS) covering a period of 10 years from 2008 to 2017 on a quarterly basis. Data on the dependent variable, development of the real estate sector in Kenya was obtained from Hass Consult on a quarterly basis. The country's inflation rate, foreign direct inflows, unemployment rate and GDP was collected from the KNBS, capital market development (REITs) on Nairobi Stock Exchange while data on interest rates and exchange rates was collected from CBK.

3.5 Diagnostic Tests

Linearity show that two variables X and Y are related by a mathematical equation $Y = bX$ where b is a constant number. The linearity test was obtained through the scatterplot testing or F-statistic in ANOVA. Stationarity test is a process where the statistical properties such as mean, variance and autocorrelation structure do not change with time. Stationarity was obtained from the run sequence plot. Normality is a test for the assumption that the residual of the response variable are normally distributed around the mean. This was determined by Shapiro-walk test or Kolmogorov-Smirnov test. Autocorrelation is the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals. It was tested using Durbin-Watson statistic (Khan, 2008).

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This was tested by the determinant of the correlation matrices, which varies from zero to one. Orthogonal independent variable is an indication that the determinant is one while it is zero if there is a complete linear dependence between them and as it approaches to zero then the multicollinearity becomes more intense. Variance Inflation Factors (VIF) and tolerance levels were also carried out to show the degree of multicollinearity (Burns & Burns, 2008).

3.6 Data Analysis

The data collected from the different sources was organized in a manner that can help address the research objective. Statistical Package for Social Sciences (SPSS) version 22 was utilized for data analysis purposes. Both descriptive and regression analyses was carried out. In descriptive statistics, the minimum, maximum, mean, standard deviation, skewness and kurtosis were computed for each variable. In inferential statistics, both regression and correlation analysis were carried out. Correlation analysis involved determining the extent of relationship between the study variables while regression analysis involved establishing the cause and effect between the independent and dependent variables. A multivariate regression analysis to determine the relationship between the dependent variable (development of the real estate sector in Kenya) and independent variables: Foreign Direct investment, Gross Domestic Product, unemployment rate, inflation rate, interest rates, exchange rates, external government debt, taxation, Balance of Payments and Capital Market Development.

3.6.1 Analytical Model

The study estimated the following multiple linear regression model to examine the relationship between macroeconomic variables and real estate development in Kenya.

$$Y= \alpha+ \beta_1X_1+\beta_2X_2+\beta_3X_3+ \beta_4X_4 + \beta_5X_5+ \beta_6X_6 +\beta_7X_7+ \beta_8X_8 + \beta_9X_9 + \beta_{10}X_{10} + \varepsilon$$

Where:

Y = Real Estate Development sector measured by percentage change on quarterly Hass Consult Property index

α = y intercept of the regression equation.

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}$ =are the slope of the regression

X_1 = Economic growth as measured by percentage change on quarterly GDP growth rate

X_2 = Interest rates as measured by percentage change on quarterly CBK lending rate

X_3=Exchange rate as measured by percentage change on quarterly natural logarithm of KSH/USD rate

X_4 = Inflation rate as measured by percentage change on quarterly Consumer Price Index

X_5 = Foreign direct investment measured by percentage change in quarterly FDI inflows

X_6 = Unemployment measured by percentage change on quarterly unemployment rate

X_7 = External government debt measured by percentage change on quarterly natural logarithm of external debt

X_8 = Taxation as measured by percentage change on quarterly natural logarithm of tax collected

X_9 = Balance of payments measured by percentage change on quarterly natural logarithm of current account deficit

X_{10} = REITs measured as a percentage change on quarterly turnover

ε = error term

3.6.2 Tests of Significance

Parametric tests i.e. F-test in Analysis of Variance (ANOVA) and t-test were used to measure statistical significance in the difference of mean ratios. The F-test was used to determine the significance of the overall model and it was obtained from Analysis of Variance (ANOVA) while a t-test was used to establish statistical significance of individual variables.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

Data collected data from CBK, KRA, KNBS and Hass consultants to establish the determinants of real estate development in Kenya. Using descriptive statistics, correlation statistics and regression analysis, the results of the study were presented in table forms as shown in the following sections.

4.2 Diagnostic Tests

The researcher carried out diagnostic tests on the collected data. The research assumed a 95 percent confidence interval or 5 percent significance level (both leading to identical conclusions) for the data used. These values helped to verify the truth or the falsity of the data. Thus, the closer to 100 percent the confidence interval (and thus, the closer to 0 percent the significance level), the higher the accuracy of the data used and analyzed is assumed to be. To test for normality, the null hypothesis for the test was that the secondary data was not normal. If the p-value recorded was more than 0.05, the researcher would reject it. The results of the test are as shown in table 4.1

Both Kolmogorov-Smirnova and Shapiro-Wilk tests recorded o-values greater than 0.05 which implies that the research data was normally distributed. The data was therefore appropriate for use to conduct parametric tests such as Pearson's correlation, regression analysis and analysis of variance.

Table 4.1: Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Real estate development	**Statistic**	**Df**	**Sig.**	**Statistic**	**Df**	**Sig.**
Balance of payments	.161	40	.300	.869	40	.853
Government expenditure	.173	40	.300	.918	40	.822
Taxation	.178	40	.300	.881	40	.723
Foreign direct investment	.175	40	.300	.874	40	.812
External debt	.176	40	.300	.892	40	.784
Interest rates	.163	40	.300	.872	40	.853
Inflation rate	.168	40	.300	.898	40	.822
Unemployment rate	.174	40	.300	.871	40	.723
Capital market development	.176	40	.300	.892	40	.784
Exchange rate	.172	40	.300	.883	40	.784

a. Lilliefors Significance Correction

Source: Research Findings (2018)

A test of Multicollinearity was undertaken. Tolerance of the variable and the VIF value were used where values more than 0.2 for Tolerance and values less than 10 for VIF meaning that Multicollinearity doesn't exist. Multiple regressions is applicable if strong relationship among variables doesn't exist. From the findings, all the variables had tolerance values >0.2 and VIF values <10 as shown in table 4.2 showing that Multicollinearity among the independent variables doesn't exist.

Table 4.2: Multicollinearity Test for Tolerance and VIF

	Collinearity Statistics	
Variable	**Tolerance**	**VIF**
Balance of payments	0.392	1.463
Government expenditure	0.398	1.982
Taxation	0.388	1.422
Foreign direct investment	0.376	1.398
External debt	0.398	1.982
Interest rates	0.360	1.382
Inflation rate	0.392	1.463
Unemployment rate	0.646	1.434
Capital market development	0.388	1.422
Exchange rate	0.376	1.398

Source: Research Findings (2018)

The assumption of the regression model adopted was that the error term was independent and normally distributed, with a mean zero and a constant variance. To test for the independence of the variables, Durbin-Watson statistical analysis was undertaken. This analysis was used to test for the presence of auto correlation among the residuals. Residual was the difference between the observed value and the predicted value of the variables. Table 4.3 below shows the results of Durbin-Watson analysis.

Table 4.3: Durbin-Watson Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.916[a]	.840	.784	1.2574630	2.447

a. Predictors: (Constant), Exchange rate, Unemployment rate, Interest rates, Balance of payments, Taxation, Foreign direct investment, Capital market development, External debt, Inflation rate, Government expenditure

b. Dependent Variable: Real estate development

Source: Research Findings (2018)

From table 4.3 above, the Durbin-Watson value was 2.447 meaning the residuals' values were uncorrelated since it falls within the acceptable range of 1.50 and 2.50. This means the size of the residual for one variable has no impact on the size of the residual for the next variable.

4.4 Descriptive Analysis

Descriptive statistics gives a presentation of the mean, maximum and minimum values of variables applied together with their standard deviations in this study. The table below shows the descriptive statistics for the variables applied in the study. Analysis of the variables under study was obtained using SPSS software for the period of ten years (2008 to 2017) on a quarterly basis.

Table 4.4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Real estate development	40	-3.8000	9.4000	1.997500	2.7072067	.361	.374	.865	.733
Balance of payments	40	-1.0000	.5578	.014487	.2371878	-1.688	.374	8.027	.733
Government expenditure	40	11.3	12.8	12.097	.3648	-.269	.374	-.554	.733
External debt	40	12.1	12.8	12.423	.2247	.318	.374	-1.127	.733
Taxation	40	11.3	12.6	12.005	.3320	-.427	.374	-.507	.733
Foreign direct investment	40	17.5	210.9	49.698	36.2454	2.847	.374	10.477	.733
Interest rates	40	13.6533	20.2133	15.809915	1.9545367	.715	.374	-.446	.733
Inflation rate	40	1.9404	2.2705	2.122240	.0963415	-.207	.374	-1.168	.733
Unemployment rate	40	10.9300	12.1700	11.708000	.3486178	-.792	.374	.360	.733
REITs	40	5.8339	6.0588	5.940255	.0735071	.255	.374	-1.392	.733
Exchange rate	40	1.7969	2.0150	1.939390	.0553332	-.392	.374	-.117	.733
Valid N (listwise)	40								

Source: Research Findings (2018)

4.5 Correlation Analysis

Pearson correlation was employed to analyze the level of association between development of real estate sector and the independent variables for this study (balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation).

From the study findings, there was a weak positive and statistically significant correlation ($r = .403$, $p = .010$) between balance of payments and real estate development. The study also found out that external debt, taxation, foreign direct investments, exchange rates,

capital market development and inflation have a positive and significant correlation with development of real estate sector as evidenced by (r = .748, p = .000), (r = .322, p = .042), (r = .687, p = .000), (r = .635, p = .000), (r = .766, p = .000) and (r = .699, p = . 000) respectively. The prevailing level of unemployment rate was found to have a negative and significant correlation with real estate development in Kenya as evidenced by (r = -.574, p = .000). Although government expenditure was found to have a positive correlation with real estate development, the relationship was not significant as shown by a p value of 0.062 which is higher than significance level of 0.05. Interest rate was also found to have a weak negative and insignificant correlation with real estate development.

Table 4.5: Correlation Analysis

		Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	Capital market development	Exchange rate
Real estate development	Pearson Correlation	1	-.403**	.297	.748**	.322*	.687**	-.082	.699**	-.574**	.766**	.635**
	Sig. (2-tailed)		.010	.062	.000	.042	.000	.614	.000	.000	.000	.000
Balance of payments	Pearson Correlation	-.403**	1	.108	-.248	.110	-.049	.059	-.237	.085	-.252	-.290
	Sig. (2-tailed)	.010		.507	.123	.498	.766	.716	.141	.600	.116	.069
Government expenditure	Pearson Correlation	.297	.108	1	.420**	.689**	.405**	.133	.445**	-.051	.439**	.370*

	Sig. (2-tailed)	.062	.507		.007	.000	.010	.414	.004	.755	.005	.019
External debt	Pearson Correlation	.748**	-.248	.420**	1	.421**	.743**	.078	.662**	-.183	.680**	.633**
	Sig. (2-tailed)	.000	.123	.007		.007	.000	.632	.000	.259	.000	.000
Taxation	Pearson Correlation	.322*	.110	.689**	.421**	1	.413**	.117	.451**	-.079	.450**	.360*
	Sig. (2-tailed)	.042	.498	.000	.007		.008	.473	.003	.629	.004	.023
Foreign direct investment	Pearson Correlation	.687**	-.049	.405**	.643**	.413**	1	-.090	.714**	-.269	.633**	.638**
	Sig. (2-tailed)	.000	.766	.010	.000	.008		.579	.000	.093	.000	.000

Interest rates	Pearson Correlation	-.082	.059	.133	.078	.117	-.090	1	.251	.183	.112	.166
	Sig. (2-tailed)	.614	.716	.414	.632	.473	.579		.118	.259	.493	.307
Inflation rate	Pearson Correlation	.699**	-.237	.445**	.662**	.451**	.714**	.251	1	-.127	.671**	.927**
	Sig. (2-tailed)	.000	.141	.004	.000	.003	.000	.118		.435	.000	.000
Unemployment rate	Pearson Correlation	-.574**	.085	-.051	-.183	-.079	-.269	.183	-.127	1	-.262	.014
	Sig. (2-tailed)	.000	.600	.755	.259	.629	.093	.259	.435		.103	.930
	Pearson Correlation	.766**	-.252	.439**	.680**	.450**	.733**	.112	.671**	-.262	1	.608**

Capital market development	Sig. (2-tailed)	.000	.116	.005	.000	.004	.000	.493	.000	.103	.000
Exchange rate	Pearson Correlation	.635**	-.290	.370*	.633**	.360*	.638**	.166	.627**	.014	.608**	1
	Sig. (2-tailed)	.000	.069	.019	.000	.023	.000	.307	.000	.930	.000

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

*. Correlation is significant at the 0.05 level (2-tailed).

c. List wise N=40

Source: Research Findings (2018)

4.6 Regression Analysis

Development of real estate sector was regressed against ten predictor variables; balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation. The regression analysis was conducted at 5% level of significance. The study obtained the model summary statistics as shown in table 4.6 below.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.916[a]	.840	.784	1.2574630	2.447

a. Predictors: (Constant), Exchange rate, Unemployment rate, Interest rates, Balance of payments, Taxation, Foreign direct investment, Capital market development, External debt, Inflation rate, Government expenditure

b. Dependent Variable: Real estate development

Source: Research Findings (2018)

R squared shows the deviations in the response variable as a result of changes in the predictor variables. From the outcome in table 4.6 above, R square value was 0.840, a discovery that 84 percent of the deviations in development of the real estate sector is caused by changes in balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation. Other variables not included in the model justify for 16 percent of the variations in real estate development in Kenya. The findings also revealed existence

of a strong relationship among the selected independent variables and the development of real estate firms as shown by the correlation coefficient (R) equal to 0.902. A Durbin-Watson statistic of 2.447 indicated that the variable residuals were not serially correlated since the value was more than 1.5.

Table 4.7: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	239.975	10	23.997	15.177	.000[b]
	Residual	45.855	29	1.581		
	Total	285.830	39			

a. Dependent Variable: Real estate development

b. Predictors: (Constant), Exchange rate, Unemployment rate, Interest rates, Balance of payments, Taxation, Foreign direct investment, Capital market development, External debt, Inflation rate, Government expenditure

Source: Research Findings (2018)

The significance value is 0.000 which is less than p=0.05. This implies that the model was statistically significant in predicting how balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation affects development of the real estate sector in Kenya.

Coefficients of determination were used as indicators of the direction of the relationship between the balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market

development and inflation and development of the real estate sector in Kenya. The p-value under sig. column was used as an indicator of the significance of the relationship. At 95% confidence level, a p-value of less than 0.05 was interpreted as a measure of statistical significance. The results are as indicated in table 4.8

Table 4.8: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.604	84.650		.173	.864
	Balance of payments	-2.907	.952	-.255	-3.055	.005
	Government expenditure	5.316	4.030	.716	1.319	.197
	External debt	7.180	5.851	.596	1.227	.230
	Taxation	6.352	4.490	.779	1.415	.168
	Foreign direct investment	.018	.009	.241	1.909	.066
	Interest rates	.009	.153	.006	.057	.955
	Inflation rate	.360	14.384	.013	.025	.980
	Unemployment rate	-3.635	.867	-.468	-4.193	.000
	Capital market development	15.768	22.084	.428	.714	.481

Exchange rate	-10.688	12.900	-.218	-.829	.414

a. Dependent Variable: Real estate development

Source: Research Findings (2018)

From the above results, it is evident that only balance of payments and unemployment rate were found to be significant determinants of real estate sector development in Kenya as evidenced by high t values and p values that are less than 0.05. All the other independent variables (public expenditure, external public debt, taxation, interest rates, exchange rates and inflation) were found to be not statistically significant determinants of development in the real estate sector in Kenya as evidenced by low t values and p > than 0.05.

The following regression equation was estimated:

$Y = 14.604 - 2.907X_1 – 3.635X_2$

Where,

Y = Development of the real estate sector

X_1= Balance of payments

X_2 = Unemployment rate

On the estimated regression model above, the constant = 14.604 shows that if selected dependent variables (balance of payments, public expenditure, external public debt, taxation, interest rates, exchange rates, unemployment rate and inflation) were rated zero, the development would be 14.604. A unit increase in balance of payment deficit would result in a reduction in development of real estate sector by 2.907. A unit increase in unemployment rate, would lead to a decrease in development of the real estate sector by 3.635.

4.7 Interpretation of Research Findings

The purpose of the current study was to establish the determinants of development in the real estate sector in Kenya. The independent variable were balance of payments, government expenditure, taxation, external government debt, foreign direct investments, .interest rates, inflation rates, unemployment rates, capital market development and exchange rates. Development of the real estate sector was the dependent variable which the study sought to explain and it was measured by quarterly Hass Consult Property index. The effect of each of the independent variables on the dependent variable was analyzed in terms of strength and direction.

The Pearson correlation coefficients between the variables revealed that there was a weak negative and statistically significant correlation between balance of payments and real estate development. The study also found out that external debt, foreign direct investments, taxation, exchange rates, capital market development and inflation have a positive and significant correlation with development of real estate sector. The prevailing level of unemployment rate was found to have a negative and significant correlation with real estate development in Kenya. Although government expenditure was found to have a positive correlation with real estate development, the relationship was not significant as shown by a p value of 0.062 which is higher than the significance level of 0.05. Interest rate was also found to have a weak negative and non-statistically significant correlation with real estate development.

The model summary revealed that the independent variables: balance of payments, public expenditure, external public debt, foreign direct investment, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation explains

84% of change in the dependent variable as depicted by the R^2 value showing that other factors not included in this model account for 16% of changes in development of the real estate sector in Kenya. The model was found to be fit at 95% confidence level since the F-value is 15.177. This implies that the overall model applied for this study was significant, in that it is a suitable prediction model for explaining real estate development in Kenya.

The findings of this study concurs with Gwadiva (2017) who explored the impact of FDI inflows on Kenya's financial performance of the real estate sector using a population of 80 real estate firms that form the real estate composite index. During January 2007 to December 2016, secondary data collection was undertaken in quarterly periods. A descriptive cross-sectional research design and a multiple linear regression model was used to analyze the association between the variables. Results revealed that individually, FDI inflows, interest rates, exchange rates and inflation were statistically insignificant determinants of Kenya's real estate financial performance.

This study is also partly in agreement with Irandu (2017) who undertook a research study to find out the impact of macro-economic factors on real estate development in Kenya. The independent variables were interest rates, inflation rates, economic growth, money supply, capital, credit growth and exchange rates. During January 2007 to December 2016, collection of secondary data was undertaken in quarterly periods. Economic growth was found to have a significant positive impact on Kenya's real estate development. The results further revealed that individually, money supply, interest rates, exchange rates, capital, credit growth and inflation were found to be non-statistically significant determinants of development in Kenya's real estate.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section looks at the summary of findings, conclusions, recommendations, limitations, suggestions for further research.

5.2 Summary of Findings

The study sought to investigate the determinants of development of the real estate sector in Kenya. The independent variables for the study were balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation. The study applied a descriptive cross-section design in data collection and analysis. Secondary data was obtained from the CBK, KNBS, KRA and Hass Consultants and was analyzed using SPSS software version 21. The study used quarterly data covering a period of ten years from 2008 to 2017.

From the results of correlation analysis, a weak negative and statistically significant correlation between balance of payments and real estate development was found to exist. The study also found out that external debt, taxation, foreign direct investments, exchange rates, capital market development and inflation have a positive and significant correlation with development of real estate sector. The prevailing level of unemployment rate was found to have a negative and significant correlation with real estate development in Kenya.

The co-efficient of determination R-square value was 0.840 which means that about 84 percent of changes in development of the Kenyan real estate sector can be explained by the ten selected independent variables while 16 percent in the variation of development is

associated with other factors not covered in this research. The study also found that the independent variables had a strong correlation with development of the real estate sector (R=916). ANOVA results show that the F statistic was significant at 5% level with a p=0.000. Therefore the model was fit to explain the relationship between the selected variables.

The regression results show that when all the selected dependent variables (balance of payments, public expenditure, external public debt, foreign direct investment, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation) are rated zero, the development would be 14.604. A unit increase in balance of payment deficit would result in a reduction in development of real estate sector by 2.907. A unit increase in unemployment rate, would lead to a decrease in development of the real estate sector by 3.635.

5.3 Conclusions

This study concludes that development of real estate sector in Kenya has a negative association with balance of payment deficit. The study therefore concludes that higher balance of payment deficit lead to a decline in development in the real estate sector to a significant extent. The study found that unemployment rate had a significant negative effect on development of the real estate sector in Kenya. This implies that an increase in unemployment rate leads to a decline on the prevailing development rate of the real estate sector. The study further concluded that although government external borrowing, foreign direct investments, economic growth, capital market development, interest rates and taxation have a positive effect on real estate sector development, the effect was not significant.

This study concludes that independent variables selected for this study; balance of payments, public expenditure, external public debt, foreign direct investments, taxation, interest rates, exchange rates, unemployment rate, capital market development and inflation influence development of real estate sector to a large extent as they account for 84 percent of the changes in development. The fact that the ten independent variables explain 84% of changes in development of the real estate sector imply that the variables not included in the model explain only 16% of changes in development of the real estate sector. It is therefore sufficient to conclude the variables discussed significantly affect the development as shown by the p value in Anova summary.

This finding concurs with Gwadiva (2017) who explored the impact of FDI inflows on Kenya's financial performance of the real estate sector. Population for the study was 80 real estate firms that form the real estate real estate development. During January 2007 to December 2016, secondary data collection was undertaken in quarterly periods. A descriptive cross-sectional research design and a multiple linear regression model were utilized in analyzing the association between the variables. Results revealed that individually, FDI inflows, interest rates, exchange rates and inflation were statistically insignificant determinants of Kenya's real estate financial performance.

This study is also in agreement with Irandu (2017) who undertook a research study to find out the impact of macro-economic factors on real estate development in Kenya. The independent variables were interest rates, inflation rates, economic growth, money supply, capital, credit growth and exchange rates. Economic growth was found to have a significant positive impact on Kenya's real estate development. The results further revealed that

individually, money supply, interest rates, exchange rates, capital, credit growth and inflation were statistically insignificant determinants of development in Kenya's real estate.

5.4 Recommendations

The study found that there exists a negative and significant influence of balance of payment deficit on development of real estate sector in Kenya. This study recommends adequate measures to be put into place to ensure that the factors that influence balance of payment deficit are well addressed to bridge the gap and boost our exports. If the country can be able to bridge the balance of payment deficit, this would lead to a rise in the development of the real estate sector and thus translate to the development of the entire economy.

The study found that unemployment rate has a negative and significant effect on Kenya's real estate sector development. This study recommends that policy makers should pay attention to the prevailing rates of unemployment as it can negatively affect development of the real estate sector. If measures are taken to reduce the prevailing levels of unemployment rate, this would translate to development in the real estate sector.

5.5 Limitations of the Study

The scope of this research was for ten years 2008-2017. It has not been determined if the results would hold for a longer study period. Furthermore it is uncertain whether similar findings would result beyond 2017. A longer study period is more reliable as it will take into account major economic conditions such as booms and recessions.

Due to the quality of data used, conclusion on whether the findings present the true facts about the situation is difficult. The data that has been used is only assumed to be accurate. The study also considered selected determinants and not all the factors affecting development of the real estate sector mainly due to limitation of data availability.

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more data is added to the functional regression model, the hypothesized relationship between two or more variables may not hold.

5.6 Suggestions for Further Research

This study focused on determinants of development of real estate sector in Kenya and relied on secondary data. A research study where data collection relies on primary data i.e. in depth questionnaires and interviews covering all the 80 registered real estate firms is recommended so as to compliment this research.

The study was not exhaustive of the independent variables affecting development of real estate sector in Kenya and this study recommends that further studies be conducted to incorporate other variables like money supply, poverty levels, technology, firm specific characteristics, political stability and other macro-economic variables. Showing the effect of each variable on the real estate sector's development will enable policy makers know what tool to use when controlling development of the sector.

The study concentrated on the last ten years since it was the most recent data available. Future studies may use a range of many years e.g. from 1970 to date and this can be helpful to confirm or disapprove the findings of this study. The study limited itself by focusing on real estate sector. The recommendations of this study are that further studies be conducted on other sectors in Kenya. Finally, due to the shortcomings of regression models, other models such as the Vector Error Correction Model (VECM) can to demonstrate the different associations between the variables.

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APPENDICES

Appendix I: Research Data

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
2008	1	3.8000	-0.1010	11.9805	12.1056	11.9133	24.3700	13.8933	1.9404	10.9300	5.8339	1.8319
	2	0.4000	0.5578	12.1391	12.1125	12.0645	31.2200	13.9933	1.9644	10.9300	5.8403	1.7969
	3	2.0000	-0.0666	11.3309	12.1138	11.3195	19.7800	13.7400	1.9720	10.9300	5.8433	1.8358
	4	2.5000	-0.1678	11.8125	12.1466	11.7468	23.2200	14.4400	1.9840	10.9300	5.8719	1.8900

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
2009	1	3.8000	0.0655	12.0216	12.1877	11.9660	33.6600	14.7733	1.9978	12.1700	5.8507	1.9010
	2	-3.8000	-0.0271	12.1977	12.1945	12.1182	49.2200	14.8833	2.0082	12.1700	5.8549	1.8945
	3	-3.0000	0.2598	11.4821	12.2006	11.3747	17.4800	14.7633	2.0124	12.1700	5.8567	1.8841
	4	-2.2000	-0.1792	11.8777	12.2133	11.7987	17.8900	14.7967	2.0173	12.1700	5.8596	1.8765
2010	1	-1.5000	0.2442	12.1197	12.2011	12.0141	18.2300	14.9200	2.0212	12.0900	5.8671	1.8838

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
	2	-1.4000	0.0491	12.3013	12.2161	12.1795	18.3600	14.4767	2.0239	12.0900	5.8773	1.8978
	3	-0.5000	0.1024	11.4930	12.2364	11.4040	18.4700	14.1500	2.0266	12.0900	5.8757	1.9081
	4	-0.4000	0.0813	11.9561	12.2546	11.8568	22.5600	13.8900	2.0337	12.0900	5.8845	1.9067
2011	1	-0.4000	0.0980	12.1713	12.2762	12.0762	24.3600	13.9567	2.0508	11.9900	5.8829	1.9154
	2	0.1000	0.2249	12.3294	12.3121	12.2400	25.4400	13.9033	2.0776	11.9900	5.8855	1.9355

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
	3	0.4000	0.0077	11.5041	12.3641	11.4327	25.9900	14.4167	2.0930	11.9900	5.8924	1.9688
	4	0.4000	-0.1307	11.9997	12.3472	11.8761	27.0700	17.9200	2.1099	11.9900	5.8994	1.9706
2012	1	0.8000	0.1131	12.2470	12.3067	12.0923	39.4700	20.0533	2.1185	11.8800	5.9007	1.9249
	2	1.2000	-0.0074	12.3963	12.3417	12.2607	42.1900	20.2133	2.1259	11.8800	5.9096	1.9252
	3	1.3000	0.0208	11.6320	12.3695	11.4808	42.2700	20.0033	2.1198	11.8800	5.9183	1.9257

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
	4	1.4000	0.0055	12.0856	12.3907	11.9326	42.2900	18.3233	2.1250	11.8800	5.9207	1.9322
2013	1	1.7000	-0.0867	12.3062	12.3931	12.1536	42.3900	17.9000	2.1358	11.7700	5.9290	1.9382
	2	1.8000	0.1366	12.4951	12.3967	12.3378	47.2400	17.4300	2.1445	11.7700	5.9403	1.9273
	3	1.9000	0.0466	11.6129	12.4236	11.6023	48.7900	16.9467	2.1492	11.7700	5.9443	1.9407
	4	2.0000	-0.2484	12.0849	12.4350	12.0466	49.2000	16.9600	2.1561	11.7700	5.9533	1.9339

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
2014	1	2.1000	0.2606	12.2907	12.4469	12.2571	52.1800	17.0000	2.1643	11.6700	5.9623	1.9361
	2	2.1000	0.2504	12.4795	12.4764	12.4164	52.6800	16.6767	2.1740	11.6700	5.9723	1.9408
	3	2.2000	-0.0976	11.6549	12.5143	11.6589	52.7000	16.4033	2.1808	11.6700	5.9818	1.9457
	4	2.3000	-0.2217	12.1695	12.5248	12.0970	53.4300	15.9767	2.1821	11.6700	5.9860	1.9535
2015	1	3.0000	0.2166	12.4412	12.5727	12.3094	54.8500	15.6200	2.1889	11.5900	5.9996	1.9616

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
	2	3.3000	-0.1346	12.6232	12.6145	12.4632	59.4500	15.5733	2.2033	11.5900	6.0144	1.9879
	3	3.6000	-0.2291	11.6726	12.6584	11.7163	62.2900	16.0833	2.2066	11.5900	6.0187	2.0073
	4	3.7000	-0.0560	12.2494	12.6692	12.1436	62.4200	17.3467	2.2129	11.5900	6.0188	2.0133
2016	1	3.7000	0.3530	12.4751	12.6961	12.3433	65.1100	17.9267	2.2187	11.5200	6.0327	2.0082
	2	3.9000	0.0419	12.6624	12.7134	12.5159	66.0200	18.1467	2.2245	11.5200	6.0360	2.0045

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
	3	4.1000	-0.0075	11.7972	12.7364	11.7793	66.6700	16.5400	2.2333	11.5200	6.0369	2.0059
	4	4.6000	0.1688	12.3343	12.7463	12.2007	79.8300	13.6867	2.2403	11.5200	6.0411	2.0070
2017	1	4.8000	0.0098	12.5738	12.7885	12.4178	89.9300	13.6533	2.2552	11.4700	6.0468	2.0145
	2	7.4000	0.1101	12.7504	12.8228	12.5750	210.9200	13.6600	2.2705	11.4700	6.0531	2.0144
	3	7.4000	-0.0836	11.7765	12.8405	11.8091	150.6700	13.6800	2.2648	11.4700	6.0588	2.0150

Year	Quarter	Real estate development	Balance of payments	Government expenditure	External debt	Taxation	Foreign direct investment	Interest rates	Inflation rate	Unemployment rate	REITs	Exchange rate
	4	9.4000	-1.0000	12.3283	12.8488	12.2327	57.4900	13.6767	2.2614	11.4700	6.0586	2.0144