INFLUENCE OF ECONOMIC GROWTH ON THE PERFORMANCE OF REAL ESTATE INVESTMENT INDUSTRY IN MACHAKOS KENYA

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D61/79127/2015

RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (MBA), SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

2016

DECLARATION

I declare that this research project is my own original work and has not been submitted previously in its entirety or in part at any other university or college for any academic award.

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This research project has been submitted for examination with our approval as the University supervisors.

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DEDICATION

I greatly dedicate this research project to the Almighty God who has been staunch and my anchor all through since I started my studies, to family whose sacrifices, prayers and patience. Also to my fellow students whom we study together it has been a journey.

ACKNOWLEDGEMENT

I would like to acknowledge the Almighty God for enabling me reach this far. My earnest gratitude goes to my family for their moral support and financial support. I wish to express my earnest appreciation to my supervisor for helping me tirelessly. I am greatly obliged to my colleagues for their support.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

CBK	Central Bank of Kenya
GDP	Gross Domestic Product
KNBS	Kenya National Bureau of Statistics
NHC	National Housing Corporation
SPSS	Statistical Package for Social Sciences

ABSTRACT

The abstract of this research focused on real estate industry which plays a key task in our economy. In this industry has past the years attracted many investors who contribute largely on its growth. This has not been the case and thus this study sought to investigate how economic growth indicators influence the growth of Machakos County real estate results. In addition to that the study used a causal research design seeks to uncover the reason behind the current state of phenomenon. The population of this study consisted of real estate firm, Machakos county government, private developer and Kenya Revenue Authority. The data collection for this study involved secondary data that was in both quantitative and qualitative analysis. Central Bank of Kenya, KNBS and other organization report also helped in collection of secondary data, which was a yearly report on the economic situation of the country. Qualitative data serene was encrypted, entered and summarised with the assistance of SPSS computer programme. Findings show that there are significant relationship between performance of real estate and the independent variables inflation, GDP, employment and foreign direct investment. All the variables have a positive effect which implies that any change in the variables results to a positive change of the real estate. The data sources were scattered and this made data mining to be a tedious process and the researcher could not conclude without modern experimentation. However, the study is in line with that done by Muli (2012) who concluded that GDP, interest and inflation rates were major determinants in real estate and Karoki (2013) whose study established significant relationships between residential real estate prices and interest rates, GDP and level of money supply. The study suggests that further readings should explore on the specific factors that affect each of the study variables. Also, further studies should be conducted to establish economic growth indicators influence the performance of real estate investment in other counties.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

The study real estate regularly includes the land, the construction on the land, the infrastructure, the natural resource like water and minerals, as well as the property related to the land and the housing (Li, 2016). More generally, the real estate is about the business of buying, selling, and renting real property (Oxford English Dictionary 2011). In context with the study the real estate investment is defined as the land that has been acquisition for further development for commercial reason (Meseko, 2014). An existing building is also renovated to increase its demand and market price.

There are several inputs that lead to development of real estate and these are; Infrastructure, labour, land and materials. And as a result this brings about forms of real estate, residential, commercial, institutional or industrial buildings. It also involves purchase of real estate, ownership of real estate, rental or sale of the same for profits.

The operational of real estate is however complex as knowledge of expertise is required and it's everywhere so there is no central market for conducting the transaction; in addition to that there is no transparency like in other sector of investment. To assess real estate order, we use real estate assets and real estate cost. Whilst real estate order rise, prices also rises and more investor pump more cash for demand. To summarise therefore the real estate and price estate investment are all equal to demand (Chui & Chau, 2005).

One of the prevalent parts of an economy is real estate, in majority of countries across the world (Koech, 2013). According to Zoopla (2012), real estate price have been increasing with majority of the population preferring to purchase property than renting. In Kenya, statistics from CBK reflects that there is a significant increase on real estate value over the last ten years (2006-2015). The value of property in the city of Nairobi and its environs (Kiambu, Machakos and Kajiado) has increased by more than four times (from 7 million to 28 million according to statistics from Hass Consult (2015).

Moreover, real estate industry each year contributes to millions job employment and pumps billions in our economy (Chui & Chau, 2005). The rapid development on real estate sector has a distinctive feature on economy in Kenya. (Rajagopal & Hays, 2012). However, it is understood that real estate investment progress of the country is reliant on the country economy. Much positive trend have been experienced in the current years.

1.1.1 Economic Growth Factors

German Deutsche Bank Research (2008) reports, macro pointer for real estate are GDP growth trend, GDP per capita, population growth, financial market development, population, legal practise, median age, and price rises. The bank and financial system plays the fundamental role in the development of the real estate, since this industry needs large capital demand to be credible. Besides, the interest rate has a larger effect on price of the real estate as on housing demand to the citizen (Li, 2016). Collyns and Senhadji (2002) utilized GDP as per capital reflects on real estate and summarized organization relation on GDP per capita and cost of houses at US.

To get real estate high quality finance during equity and debt capital on a larger size. Usually emerging and developing marketplace on which are of real estate capital; which can be represented by equity capital and foreign directs investment (FDI) (Lapoza, 2007).

The inflation is one of the driving forces on real estate investment growth. Barkham, Ward and Henry (1996) studied the connection among commercial real estate (from both public & private markets) and price rises, which targeting at US and UK markets. They found out that prices rise results in the increase of real estate. This research will hinge on economic factors that influence performance of real estate firms. According to Ducoulombier (2007) indicated that sources of risk in real estate performance as work, interest rates and unforeseen prise rise. The former instance, with the account of many swaying factor, illustrate how macro-economic discipline is complex but this research will settle on a few of them.

Interest rate also affects the growth and investment on real estate, and any change might result to either one to purchase when its interest rates are down and abscond to purchase residential property (Sibanda & Mhlanga, 2013). When the interest rate are higher the demand to purchase falls, but when the interest rate down the demand to purchase rises (Mati & Makori, 2014).

Nevertheless, when appears that effect of rates on an equity investment like a real estate investment trust (REIT), its relationship can be thought of same as interest rate (Lahiri, 2009) also when the interest rate price of bond rise its package purchase turn in to more attractive, usually when interest rate rise, its price on bond fall. Likewise,

meanwhile interest rate fall at market, REITs' lofty yields turn in to striking and price rises up. Interest rates rise, this result on REIT turn in to less striking and makes the price to fall. This research will determine the degree to which interest rates affect growth and performance of real estate industry.

The economic factors uses Interest rate, GDP, real wage, rate of employment and tax rates as significant influences of growth and performance of real estate. Liow*et al.,* (2006) analysed economic factors influencing worldwide property market and established that GDP, inflation, employment (wage), foreign direct investments (FDIs) and interest rates were the most relevant macroeconomic indicators to examine. Based on the reviewed literature, this study choose to use, FDIs, GDP, inflation, employment rate and interest rate as independent variables indicators influencing the performance of real estate firms in Machakos County.

1.1.2 Economic Growth and Performance of Real Estate Investment Industry

Various studies have been carried out to reveal the kind of association that subsist among economic growth pointer and accomplishment of real estate investments. Yoshino and Bianconi (2012) observe form the market progress on an organization at real estate area within Brazil. It was observer within Brazil on real estate market has on a positive side affected development. According to Ross (2011) developed a style that assess the effect of economic on overseas direct investment in real estate at Queensland indicated that direct investment from UK had trivial influence on real estate industry.

Hoxha (2014) found out value of housing in Kosovo were considerably resolve by the essential conventional rudiments relating to economy. In India, Rajagopal and Hays (2012) indicates that economic growth is robust and set the value of residential and commercial real estate. Even in Sub Saharan Africa research, (Sibanda & Mhlanga, 2013; Meseko, 2014; Aondohemba & Lawrence, 2015), shows that various macro-economic factors influence performance and increase of real estate.

1.1.3 Real Estate Growth and performance in Kenya

The real estate investment in Kenya has been on a continuous growth in the last twenty years (Koech, 2013). According to Statistics from KNBS (2016), real estate sector has growth engrossed the attention of investor in the current past. In earlier period researchers has made a lot of stride in explaining the association among economic growth and presentation of real estate. Juma (2014) studied the outcome of micro economic variable of increase in real estate investment in Kenya, Mati & Makori (2014) studied the result on economic indicators for presentation on real estate within Kenya and Muli (2013) assessed feature influencing the increase in real estate investment in Kenya. It has been expected that the industry will significant grow and thus fulfil its role in provision of substantive returns as well as the basic need of housing in Kenya as envisioned in Vision 2030 (Republic of Kenya, 2007). However, demand for housing is rising each day in Kenya leading to increase of property and land investment companies in several major towns.

1.1.4 Real estate investment industry in Kenya.

Juma (2014), established growth in real estate investments in Kenya. Real estate investment comprises of buying, developing or renting building or space with the

view of future returns. Most people have opted to invest in real estates since they feel it is the most secure way of utilizing their funds. With the rising population in Kenya, the demand for houses is on the rise. This forms the basis for real estate investment growth in the country. The government of Kenya is guided by its vision 2030 which will see the world wide investible real estate broaden and guide a rise in opportunity, developing economy like Kenya; which will represent a broader opportunities.

1.2 Statement of the Problem

Growth of real estate is affected by certain economic factors. Its growth can be measured by return on investment or price index. Factors that affect economic growth are likely to affect growth in real estate. Real estate bubble is usually the major cause of economic growth or decline since it is associated with buying a house for speculation rather than shelter, bad lending practices, low interest rates and desire for home ownership. In this respect, the variables likely to affect real estate bubble are interest and lending rates, GDP, inflation rate. The variables mentioned above are likely to influence economic growth and hence performance of real estates in Machakos county.

Kenya has more opportunity in housing sector and challenges (Ministry of lands and physical planning, the urbanization has lead to increase in housing surpass by 250,000 units against normal 50,000 units due to devolution of county (Ministry of lands and physical planning, 2016). This situation is not different in Machakos as this is one of the rapidly growing counties in Kenya. According to KNBS, real estates have contributed positively towards the growth of the economy. KNBS report 2016 show an increase in the GDP from 5.8% in 2015 to 5.9% in first quarter of 2016 (Central

bank of Kenya, 2016). This has caused an increase in the prices of houses in the subsequent years.

The housing industry is very significant for many countries all ensure that the infrastructures are in place to ensure that the countries economy growth is foreseen. (Jones Lang LaSalle, 2006). Real estate investment is sector that is growing at an alarming rate in the world (Mati & Makori, 2014). However it is a great research study to carry out to because of interest on investors. The movement of individuals to urban has led to increase in demand for housing in developing countries. This has attracted research across the globe to determine the growth and performance of real estate investment in developing and developed economies (Golob, Bastic & Psunder, 2012; Rajagopal & Hays, 2012; Sibanda & Mhlanga, 2013; Meseko, 2014; Ding, 2014; Juma, 2014).

In many studies carried out most came from developed countries their real estate industry is well developed (Golob, Bastic & Psunder, 2012; Rajagopal & Hays, 2012). Locally, Mati and Makori (2014) indicated that property on economic indicators act within real estate at Kenya. Muli (2013) conducted a finding on effect on economic indicators on performance on real estate at Kenya. Juma (2014) researched on the result of macro-economic variables on growth to real estate inside Kenya. All the results of the research conducted in the local context have shown that economic, political and socio-cultural factors influence growth. However, most studies have utilised secondary data rather than primary data from those who are affected by the projects (real estate investors). The researcher also notes that majority of real estate companies have shifted their operations by targeting areas surrounding Nairobi like

Machakos County that has seen massive development of housing market because of its proximity to the city of Nairobi.

To be short of applicable reference recounting to this subject presented the beneficiaries with problems. Though it was practicable to carry out this research, would assist construct a handy reference to some information describing economic factors influencing the growth of real estate industry at Machakos County. The research question; does answer how does economic aspect related t; income supported through employment inflation, GDP, Interest rates, foreign direct investment have significant influence for development on real estate investment at Machakos county?.

1.3 Objectives of the Study

The research study investigated how economic growth indicators influence the performance of real estate investment at Machakos County in Kenya.

1.4 Value of the Study

In as a upshot on these research would provide nifty information that would help investors, financiers, investment analysts and other stakeholders concerned with real estate investment in Machakos and other parts of Kenya. The study findings would also provide useful data for comparative study purposes in future research on this topic.

The investor would gain from the result of this study by understanding how economic progress impact on the performance of real estate and are better placed to formulate and implement policies that improve real estate investment. Other financiers would

gain from the conclusion of this study by understanding the challenges facing real estate investment growth and how they can position themselves to overcome them.

Researchers on the other hand would benefit from the findings of this study because it fills the current research gap where studies reveal that macroeconomic variable has a positive impact on the real estate investment (Juma, 2014) but do not explain the influence of economic growth on real estate investment industry.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This research chapter presented literature review of study and concept relating at economic growth and performance of real estate industry. Section 2.2 discussed theoretical literature by reviewing theories and concepts relating to the study variables, section 2.3 and section 2.4 presented the empirical review of literature based on global, continent, regional and local context. Section 2.5 summarised the literature and section 2.6 presented the conceptual framework.

2.2 Theoretical Literature Review

Theoretical propositions advanced to explain how economic growth influences performance of real estates. This section reviewed theories related to economic factors influencing growth and performance of real estate industry. The theories discussed include; portfolio theory, portfolio management theory, and Keynesian theory.

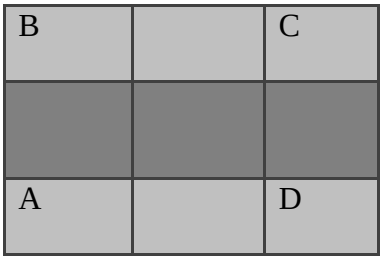
2.2.1 Portfolio Theory

Investors use the portfolio theory to achieve the satisfactory return compared to the risk involved in the investment. Investors have varying investment objectives; some want guaranteed real income while others prefer nominal income or have the aim of long-term growth. However, there is always exchange among risk and return. When risks are taken, a higher investment return is expected. According to Ball et al, (2002) this exchange can be articulated in mean variance condition. Where the average return is the mean and variance been or standard deviation, square roots, which scope returns is a measure of risk. A rational investor should choose for the lowest risk and the

highest returns. Table 2.1 is taken from the publication The Economics of Commercial Property Markets, and shows the risk return in lines.

Table 2.1: Risk return in lines

High



Return

Low Risk High

Source: The Economics of Commercial Property Markets

The horizontal grid line shows the risk and the vertical grid line depicts the returns. Any person who wants to invest should settle for A instead of D because in A it has a lower risk and same return.

If investors have to choose between A and B, then they should choose B because it has a upper expected sum of returns and the risk is the same. But its different for A and C, simply because C has a upper return and the risk is higher too than A. In economics A and C are said to be variance efficient, which means upper return expected and high risk. Here investors make an exchange among risk and return.

2.2.2 Portfolio Management Theory

Brueggman and Fisher (2008) refer to investors in portfolio theory as individuals with low risk aversion. The three performance criteria of a traditional portfolio are mean return, standard deviation and the investor who is responsible for the transaction. The first basic criterion, the mean return, consists of taking into considerations the average of expected return within a portfolio. For the second one, the standard deviation is used to assess the risks when it comes to do a comparison among different investments. The late one, investor plays a key role in investment decision.

The investors that select the assets need to evaluate to what extent the acquisition of an investment affects the risk and return of a portfolio assets. In case that the investors already have a portfolio, his main concern will be to evaluate whether or not the efficiency of his portfolio is going to increase according to the level of risks settled (Brueggman & Fisher, 2008). Investing in real estate assets requires form assets manager to make the best choices and to take final decisions according to the optimum risk-return fixed.

2.2.3 Keynesian Theory

(Peach and McCarthy, 2004), indicates that middling tendency on the consumer for consumption falls with returns. In real estate context more houses will be consumed by people when there income is higher, in which when income increases this will result to rise in demand and the value will rise. He also suggested that the value of housing rises and is related with income results to ultimate factors which control of the housing value (McCarthy & Peach 2004). Demand variable of income is calculated by GDP per capita.

According to neoclassical theory on housing demand, the choice to purchase a house is different from choice to consume other goods (Hoxha, 2014) it also state that consumer utilize opportunity of income and value challenges they face. In housing gradient consumption theory, how the structure of decision of consumer is underlined housing value and buyer income. This theory proposes to consumer for the homes have choice to choose from a variety of goods in order to capitalize on its utility.

2.3 Economic Factors and Performance of Real Estate Investment Firms

This section presents the review of conceptual and contextual review of economic factors that are assumed in this study to influence the growth and performance of real estate investment. 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

Rajagopal and Hays (2012) suggested that over the past decade, many indicators has been the driving force behind economic growth been; population pressure, office space demand, and information technology have placed important trend to rise up on real estate value. Rajagopal and Hays suggested that Indian Government the strict rules by the government on foreign investors on real estate in that country has resulted to downward trend in housing sector.

According to Meseko (2014) indicated that the foreign investors should collaborate with local investors who knows the market well and its challenges in Nigeria real estate. The local investor has clients who trust them unlike developed countries where

the real estate properties are searched online. In Nigeria there are less people who assessed it online and they rely a lot on agents of real estate. Moreover, the real estate success stories on foreign investments give the notion that the intrinsic risks cannot curb investment.

2.3.2 Gross Domestic Product

(GDP) is outline to be a monetary price for services and goods created in a nation on a specific time of period, it calculation is done on a yearly basis. It reflects the citizen living quality and economic state of a country. GDP is considered as the common pointer to comparison to the economic state in different country (Li, 2016). The GDP add to the progress of living condition and economic status and it also sway the real estate value in these aspect. In addition o that the higher the purchasing powers the more the rate of consumption will be improved by those who can afford it. Moreover, the urban population and the working class population increase improvement on demand of housing and its economic status. Furthermore, as an economic pointer, an increase trend on GDP will strengthen the real estate value and macroeconomic situation (Jian & Zhang, 2012).

2.3.3 Interest and Lending Rates

Interest rate plays an important function in the progress of the real estate. Regularly, the interest rate has a big influence on the real estate developer of a household in provision for real estate market (Li, 2016). For real estate developers, they obtain less construction costs for the investment of the real estate if the interest rate increases, so that the real estate price usually goes up. For buyers, the increase of the interest rate results in the high cost of buying houses and more pressure of loan repayment. Hence,

the rise of interest rates diminishes the demand of purchasing houses, and then leads to the decreasing trend of housing prices.

Interest rate has a vital function on the growth within real estate. Regularly in real estate the interest rate plays a major role in developer and household in terms of real estate market (Li, 2016) for real estate investors , they incur low cost on building materials. For buyers the rise of the interest rate shows a rise in value of houses and higher loan repayment. Therefore the increase on interest rate weakens demand on purchasing houses and leads to decrease trend pricing on houses. According to Ding (2014), the loan amount from the real estate developers is huge, and usually its proportion accounts for around 40% to 60% of the total investment amount that year. The lending rate has a direct influence on the investment amount for the real restate and the supply of the real estate.

The interest rate has effect on both supply and demand aspects, and the research in this paper will consider the interest rate as the factor of supply aspect in order to access data completely. In fact, even the slight adjustment of the interest rate have a huge significant on real estate market. Therefore the government will tend to use the interest rate to as an effective method to manage real estate market. Commonly, authority decreases interest rate to kindle increase on housing values. Manni and Chane-Teng (2008) investigated indicators influencing the performance of the French REIT between 2003 and 2007. They adopted multifactor models to analyse data. Results extracted and analysed reveal that longer interest rate acts major explanatory indicator.

2.3.4 Unemployment

The income is usually influenced by the macroeconomic development, the income distribution, and the policy about the consumption from the authority (Li, 2016). The disposable income per capita will depend on how the consumers are willing and able to purchase house. People with her disposable income will have a high purchasing power on commodities. The purchasing power of consumer is determined by the income per capital that can be set aside. The higher the disposable income the higher the purchasing power of the houses. The disposable income in China is higher and rise since 1979 and the purchasing power of Chinese citizen has risen (Ding, 2014). In addition, as the income rise people have more needs for house living environment, and surrounding infrastructure. Generally increases the cost of building, which also increases the value of houses to sky rocket.

Engel's coefficient gradually lowered when income increase. Proportion on income used on food falls, proportion on income used on improving the life style rises. According to Li and Li (2002), the United Nations (UN) suggests setting the Engel coefficient between 40% to 50% as a moderately well-off standard of living, and the expenditure on the residence in the circumstance is about 15% of the Engel coefficient. Thanks to the reform of housing system in 1998, the expenditure on the residence of the Engel coefficient jumped from around 2% in 1998 to over 15% in 2001.Miller and Peng (2006) utilized the data from 1990 to 2002 within 277 cities in America to estimate the flux of housing value.

The research indicated that an average income and housing value are the cause for housing price flux. In a study Hwang and Quigley (2006) model economic rudiments

on home markets within US city region found out that housing market were as a result of income and employment changes. The study also looked ate employment, per capita transfer payment for unemployment, real per capita income which determined the variables for home prices. A number of other studies have been researched on through with conflicting upshot and close.

2.3.5 Inflation

The inflation has some result on real estate; and inflation had a connection of each other. The real estate rises as the value of commodity grows up. The increase of value, exact cost price of labour, influences value of real estate which will in turn increase the real estate value. When the goods rise abnormally, then it will result to RMB. Prices on consumer goods may counterbalance the interest from the bank and then majority of consumers would like to choose the estate as an investment instead of currency assets. Hence, the fluctuation of inflation to some extent and possibilities to increase the real estate price (Ding, 2014).

Psunder (2009) ascertain that real estate development had been escorted by positive impact indicator. These are the indicator of real estate development or declines are: demographic and social factors, household income, funding costs and offer, the influence on status. Researcher as well specify that bigger fall of construction part may be inflicted by high price. This leads in lesser order for real estate assets and exert force on value.

Frappa and Mesonnier (2010) indicated that robust proof of an optimistic result of rise goals on real estate value rise and home value to rent ratio. The rise has some positive

impact for profits returns on many companies. Thus inflation lowers rate and inflation momentum meaning on the nominal interest rate (Golob, Bastic & Psunder, 2012). The inflation rate will achieve interest rate level (Mati & Makori, 2014). When inflation rate is higher the interest rate also increases; this is witnessed because the lenders will increase the interest rate as return on falling for bargain authority of money they will pay in full in yet to coming days.

2.3 Empirical Review on Studies Conducted Outside Kenya

This section reviews empirical literature on similar studies conducted in other parts of the world in relation to economic growth and performance of real estate industry. Identification of research gaps is also seen. There are lack of connection between investment in real estate and economic growth but it does not change demand for real estate and it doesn't have impact on economic occurrence. Hong Kong's, real estate souk is much proficient and alter in demand situation return more precisely and hastily. The study examines real estate value, in offices, residential and impact on economic growth in Machakos County.

Golob, Bastic and Psunder (2012) study sought to determine factors which affected the rise and fall of real estate value on the industry. Researcher used questionnaires to collect data and found out that building quality, sales and access of funds source. The research findings however may not be applicable to Machakos County bearing in mind GDP between the two nations are different. Sibanda and Mhlanga (2013) employed a vector autoregressive models to come institute the relation between macroeconomic and financial variables on the economy. In South Africa economy was controlled by inflation in short run on a short term rate interest. The research

concluded house that disposable income affects positively to property value return, in a short-term and long run. Research was conducted in South Africa that has a developed property industry compared to Kenya that is now developing.

Aondohemba and Lawrence (2015) study sought to identify drivers of investment performance of commercial property in Lagos city with a view to preventing a rule of thumb approach to investments' decisions. The research questions underpinned on factors influencing commercial property investment performance were designed and administered to 125 real estate practitioners in Lagos in order to weigh the factors influencing commercial property investment performance in five selected locations in Lagos. Individual sub-markets reveal top factors common to each location as cost of building materials, location, and quality of road infrastructure, rental growth and security. Findings across submarkets revealed three critical set of factors. Condition of the premises; the second theme is a mixture of socio-cultural and legal framework; the third is also a mixture of socio-cultural, political and economic factors. This research will only focus on four economic variables influencing investments in real estate.

2.4 Review of Local Research

Murage (2013) investigated on effect of interest rates unpredictability on the growth of real estate market in Kenya. Most of the sectors of the economy were affected by sporadic interest rate. The data was analyzed by use of regression model. The populace of the study was on real estate in the country ranges from bigger real estate investors to a smaller scale developer. Data were collected from KNBS and Hass Consulting organization from 2008-2012. The feedback illustrated that the interest

rate on the souk has knowledge of down volatility. The researcher used secondary data and primary data to ascertain how interest rate fluctuation affects growth of real estate ventures from investor perspective.

Muli (2013) researched the indicator that affects the growth in real estate investment in Kenya. He examined on factors such as GDP growth, interest rate, populace growth, inflation rates affected results of real estate investment. Data was analyzed using the Pearson correlation and a regression model. Result showed GDP had a higher value of 83 percent, inflation growth 78 percent, interest rate value 75 percent. 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. He investigated factors such as GDP growth, interest rate, inflation rates and population growth affected the growth of real estate investment. Data was analyzed using the Pearson correlation and a regression model. Result showed that GDP took the highest share with a value of 83 percent followed by inflation growth at 78 percent while interest rate came third with value of 75 percent. Population growth contributed the least with a value of 29 percent. The research was conducted based on secondary sources of data which might be conflicting sometimes.

Koech (2013) investigated on impact of real Real Estate Development on growth for Real Estate Agents in Nakuru Municipality. The sample was selected using random technique. The study used primary data collection method via a questionnaire to collect data on impact of property development in estate agent growth. Results

showed that there had been a considerable growth of real estate agents in Nakuru town.

Mati and Makori (2014) studied on effect on economic indicator on presentation of real estate within Kenya with reconsidering these area; inflation, interest rate, transaction cost and need for housing. Stratified sampling technique used in selecting a test from each level; simple random sample was used on a variety populace on 44 feed backer. The study concluded on interest rate, dealing cost, inflation and demand on real estate extremely control the representation on real estate. Researcher used employees of real-estate agents while this research will target the top management of real-estate in developing Machakos County industry.

Juma (2014) research investigate on effect on macroeconomic variables growth in real estate venture in Kenya given they are key in the growth of the industry. The study followed a descriptive research design. The study used secondary data on annual real estate investments growth as computed from the Hass Consult. The researcher established that at least one or more of the selected macro-economic variables and the real estate growth declined over the periods; 2002-2005, 2007-2010, and 2011-2013. the study also established a strong positive relationship between the selected macro-economic variables; Exchange Rate fluctuations, Growth in Diaspora Remittances, Growth in Money Supply, Inflations, and GDP Growth. The revise completed that there was optimistic connection among macroeconomic variable and real estate investment growth. This research will use both secondary and primary sources to establish the rate at which the above mentioned factors influence performance of real estate.

2.5 Chapter Summary and Knowledge Gap

The previous literature real estate in Kenya is control by many indicators most based on economic performance of the country. The following table (2.1) show the knowledge gap for the study.

Authors	Study	Finding	Research Gap
Chui and Chau (2005)	Lead lag relationship between real estate prices, real estate investment, and economic growth	There was no relationship between GDP and real estate investment	The country's (Hong Kong) property market is efficient and it is not affected by GDP
Murage (2013)	Effects of interest rate unpredictability on the growth of real estate market	Study results indicated that the interest market has experienced low volatility	Conducted research in the banking industry
Koech (2013)	Impact of real estate development in growth of real estate agents	There has been significant growth of real estate agents	The study did not have independent variable
Juma (2014)	Effect of macro-economic variables on growth in real estate investment	There were strong positive association between macroeconomic and real estate investment growth.	The study utilised secondary data while this will utilise a combination of primary and secondary data
Aondohemba and Lawrence (2015)	Drivers of investment performance of commercial property in Lagos	socio-cultural, political and economic factors influenced investment performance of commercial property	The study was wide as it involved, social, economic and political factors

However, there seems to be inadequate studies that have been conducted to check how economic factors influence the growth of real estate investment in Machakos County, a focus of this study.

2.6 Conceptual Framework

The reviewed empirical studies have shown that various economic factors influence the performance of real estate investments. The conceptual framework model for this study is anchored in the relationship between independent and dependent variables.

Figure 2.2 Conceptual framework

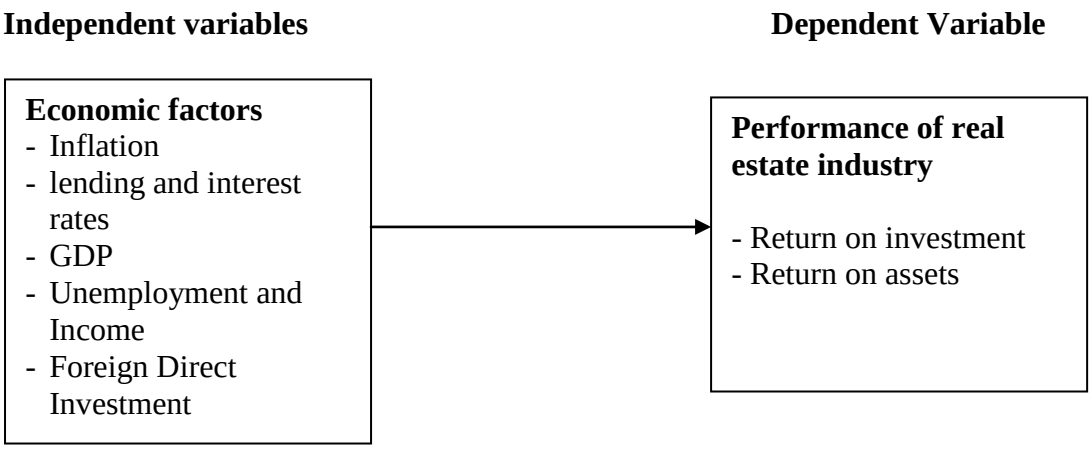


Figure 2.1 Shows association between economic factors and performance on real estate investment firms. The independent variables for the research consist of five economic factors that had been reviewed previously through theoretical and empirical literature. They include; gross domestic product, employment rate, foreign direct investment, interest rates and inflation. The dependent variable involves performance of real estate investment and is identified through the following indicators; return on investment and return on assets.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This research methodology chapter discussed research design employed to conduct the study. The chapter explained the methods that were used to collect primary and secondary data for the study. Section 3.2 discussed the research design to be used, section 3.3 the target population while section 3.4 discussed data collection instruments. Section 3.5 discussed in detail Data analysis by explaining the models and statistical tools that was used to analyse the data.

3.2 Research Design

The research design underlined the process that followed in our data collection. This research used causal comparative research design. Mugenda and Mugenda (2003) informed that this design is used to explore relationships between variables. Causal research design seeks to uncover the reason behind the current state of phenomenon. It explored the relationship between variables. It is used in cases where experimental research design cannot be used usually because the researcher has no chance to manipulate one variable to study its effects on another variable. The main purpose of causal relative research design was to institute motive present status of the phenomena in study. The study was chosen because it will institute how economic indicators sway growth and performance of real estate investment in Machakos County, Kenya.

3.3 Population and Sample

Target populace is the total number of subjects of interest to the researcher. This study populace consisted of real estate firms, Machakos county government, private

developers and Kenya Revenue Authority. Machakos County was best because of its convenience to the researcher, it allows effective data collection, against the set of time and financial restrictions, and to which the study will be implemented (Onen and Oso, 2008).

3.4 Data and Data Collection Instruments

Data collected for this research involved secondary facts that were in quantitative and qualitative kind. Data was gathered from Central Bank of Kenya, KNBS and other organization yearly reports on the economic situation of the country. The main research instrument sought to answer the study objectives on how real estate investment firms perceive economic factors affecting their financial performance.

3.5 Data Analysis

This section presented the procedures of analysing data. The section discussed the; conceptual model, analytical model and diagnostic tests. All data gathered were analysed using quantitative method and qualitative method. The qualitative data examine thematically and presented after quantitative data. Quantitative data gathered were also analysed by (SPSS) computer programme. Qualitative facts collected were examined using content study as this aided in analysis of the study. The analysed data was later compared with the theoretical literature documented above.

3.5.1 Conceptual Model

Analysis in the first stage it were analyzed by descriptive statistics. Such as standard deviation, mean, least and most values. This was used to show the distribution in the data so collected. The second stage involved the conceptual model for the research

linking the independent variables and dependent variables. Multiple linear regression models were used in measuring each variable and this model helped in bringing out the influence of economic growth on the performance of real estate investments in Machakos County, Kenya. This takes the form of a mathematical function:

$$Y= f(X_1, X_2, X_3, X_4 \text{ and } X_5) \quad (1)$$

Y represents the dependent variable (Presentation of real estate investments). Presentation of real estate investment firms was decided by GDP, employment and

X_1, represents the GDP. Gross domestic products assess the size of give economy accustomed for prices alter and inflation. It channels the volume of a given economy by modified for value the output of final services and goods for income of an economy base on yearly basis.

X_2, represents the inflation rate - Inflation refers to rise in prices of commodities. It is usually measured by consumer price index which is in form of goods and services.

X_3, represents indicators of income and employment. Income and employment categorises the salary and wage bracket that particular group of people receive from employment. The income might be broken down to; low class, middle class and high class depending on the salaries or income they get from their jobs and businesses.

X_4, represents the foreign direct investment. This will be determined by the number of investors who have injected capital in the real estate industry from outside directly or through partnerships with the local firms.

X_5, represents the interest rate, which is interest that is fully paid by the person who borrowed from the lender. These comprise general loans and mortgages.

3.5.2 Analytical Model

The analytical model was the algebraic expression of the conceptual model. It has the constant term, the coefficients, and the error term. It is illustrated below:

$$Y = \alpha + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + \beta_5 X5 + \varepsilon_t \quad (2)$$

Thus;

y= Dependent variable, the financial performance on real estate investment organization is as a measure by return on assets

α= regression constant,

$\beta_1 - \beta_4$ = Regression coefficients (alteration of y for every gotten unit alteration in X)

Regression coefficients (change in y for every unit change in X)

X_1 = Gross Domestic Product is the price of final goods and services produced in economy

Gross Domestic Product, comprising the monetary value of all final goods and services produced in an economy

X_2 = Inflation, measured using changes in the consumer price index (CPI)

X_3 = Employment, as indicated by the proportion of the population in the workforce

X_4 = Foreign direct investment, measured using the capital inflow from foreign investors

X_5 = Interest rate is the money paid by those who borrowed from the lender, margin difference.

ε= Error term

3.5.3 Diagnostic Tests

The probability level was set up at 95% confidence level, a 5% level of significance. The researcher used inferential statistics such as The Pearson creation Moment - correlation coefficient (R^2) and the coefficient of determination R of the data set.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section gives the presentation on finding and in-depth insight into these findings as per the study objectives stipulated in chapter one and research methodology. Section 4.2 presents a summary statistics regarding on all the aspect of study as GDP growth rate, inflation rate, unemployment rates, foreign direct investment, interest rates, and the rate of real estate performance. Section 4.3 presents inferential statistics of the economic growth and performance of real estate, section 4.4 discusses the study findings while section 4.5 provides discussion of the summary of data analysis and results. The obtained data spanned the period between years 2005 to 2015. The secondary data was organized in excel spread sheets and analyzed using SPSS version 20.

4.2 Summary Statistics

In this section gives the graphical representation of the research findings.

4.2.1 GDP growth rate

The study sought to establish the Annual real GDP growth rate. The findings are shown in figure 4.1.

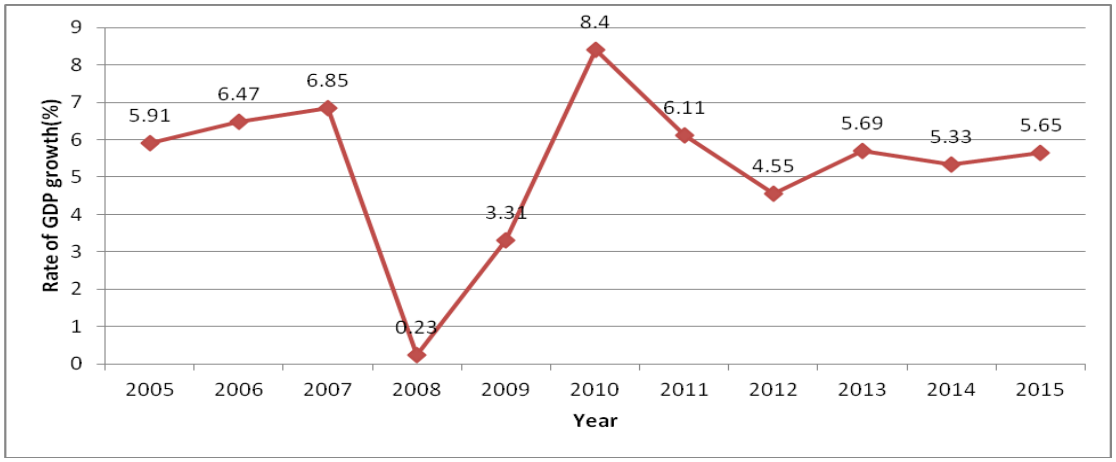


Figure 4.1: GDP rates between 2005 and 2015. Source : The Global Economy

Figure 4.1 above shows that the GDP growth rate has been fluctuating throughout the years. The years 2006 and 2007 shows small increase in the rate of GDP. However year 2008 shows a very sharp decline that resulted to an almost zero rating of 0.23. This could have been attributed political instability occasion by post-election violence that resulted after the disputed 2007 elections. There was a sharp increase in year 2009 to 3.31 percent and a further very sharp increase in year 2010 to 8.40.This again went down in year 2011 to 6.11 and a further decline in year the 2012 to 4.55. Year 2013 there was slight increase in the GDP ratings to 5.69, later in 2014 we witnessed a slight drop to 5.33 and 2015 too had a slight increase to 5.65.

4.2.2 Inflation rates

The study sought to establish the inflation rates. The findings are shown in figure 4.2.

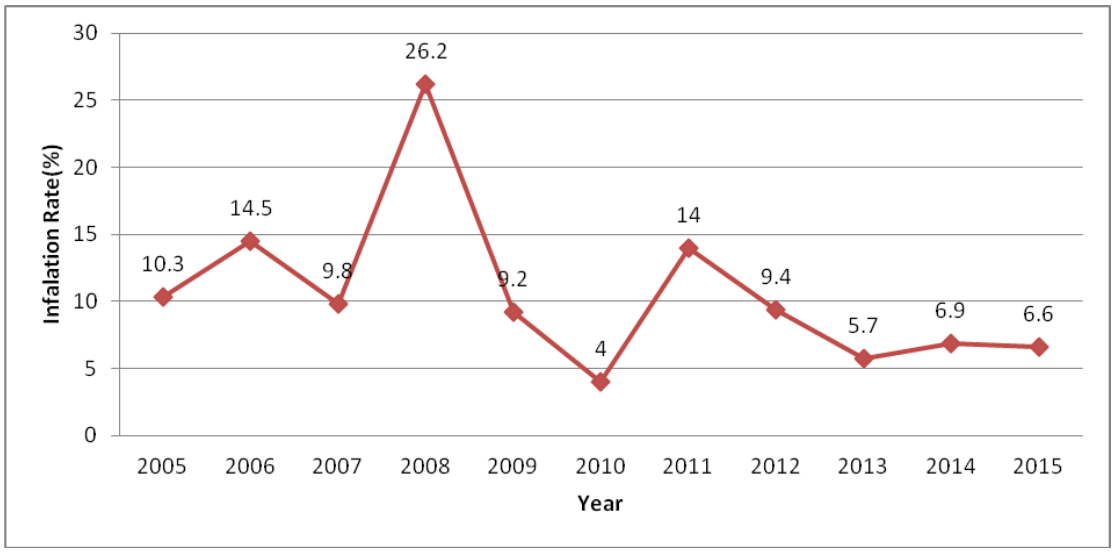


Figure 4.1: Inflation rates between 2005 and 2015. Source : The Global Economy

Figure 4.2 shows that the inflation rates were on the slight rise and small decline between the years 2005, 2006 and 2007. However, the year 2008 witnessed a very high increase in inflation ration to a value of 26.2%. This too could be attributed to the aftermath of unstable economy that resulted from the post-election violence of the disputed 2007 elections. This rating steadily decline to 9.2% in 2009 and to a further 4% in 2010. The 2010 was the lowest rating so far with this decade duration of this study. The rating rose steadily to 14% in 2011, this been on the decline and as at 2015, the inflation rate was at a value of 6.6%.

4.2.3 Unemployment rates

The study sought to establish the employment rates which is better reflected by the data on the unemployment with the period under this study. The results are as indicated in the figure 4.3 below.

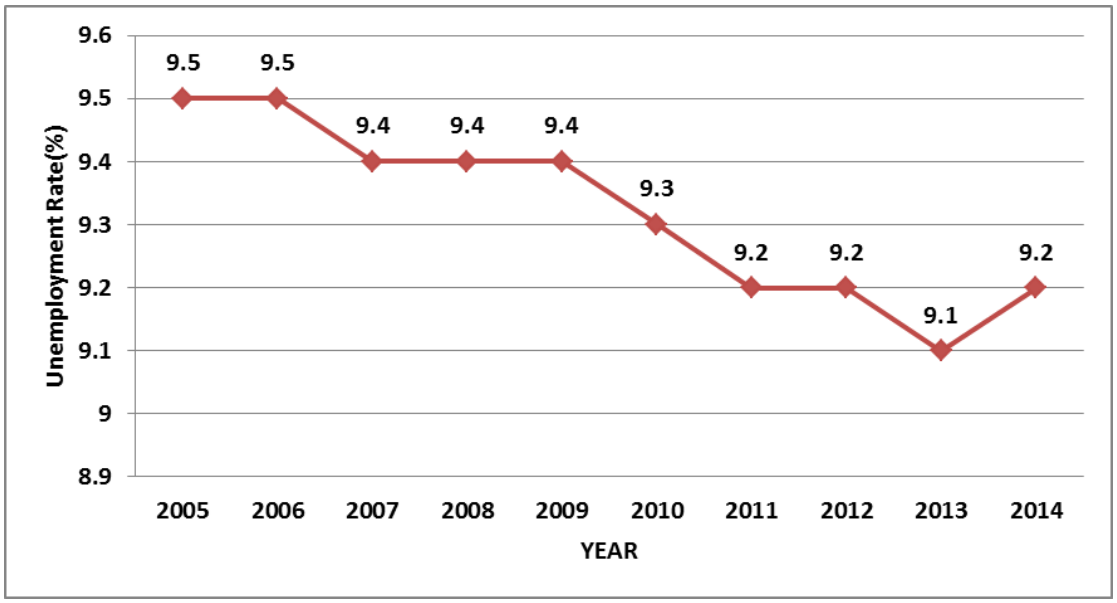


Figure 4.2: Unemployment rates: Source : The Global Economy

The unemployment rating has remained flat between the year 2005 and 2006 at 9.5% . However, to 9.4% in the year 2007 and again remain constant between the year 2007 and 2009. The consecutive years saw a slight decline to 9.3% and 9.2% respectively. The 9.2% again remain constant between the years 2011 to 2012. The year 2013, we had a slight decline to 9.1% in 2013. This value again rose slightly to 9.2% in 2014. The year 2015, had a slight rise in unemployment rating to 9.2%. The finding generally indicate that the unemployment rate has been on the downwards trend with in this selected duration in this study, hence we can allude that the employment rate has been on the rise, because change in unemployment rating inversely affects the change in employment rates.

4.2.4 Foreign direct investment

The study sought to establish the foreign direct investment. The findings are shown in figure 4.4.

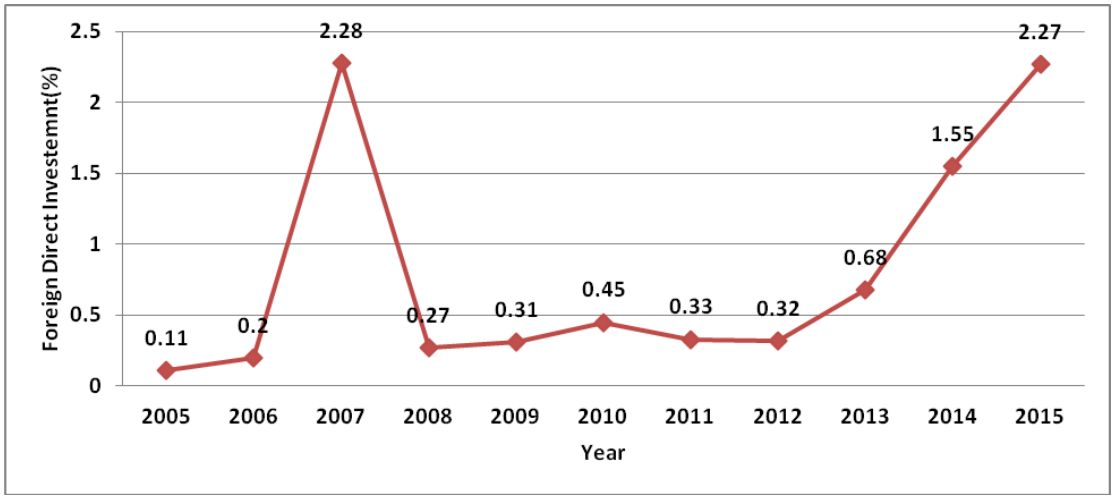


Figure 4.3: Foreign direct investment: Source : The Global Economy

Figure 4.4 shows that the percentage rates of foreign direct investment shave been fluctuation in the years. Some years recorded a high increase like year 2007 to at 2.28%. But the consecutive years witnessed a steady increase between the years 2012 at a rating of 0.32 to 2.27% in the year 2015.

4.2.5 Interest rates

The study sought to establish the interest rates for the period in study. The findings are shown in figure 4.5. The rate of return on the value of assets has also been fluctuating as indicated in the findings in the figure 4.5 below.

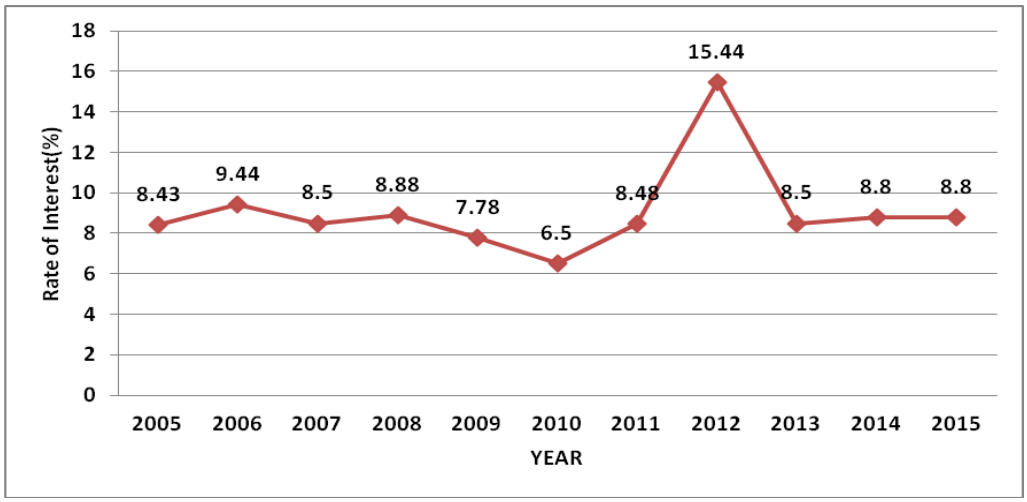


Figure 4.4: Interest Rates. Source : The Global Economy

The study findings indicate that the interest rates keep on fluctuating during the years on study. It is only the years 2005 and 2011 it kept fluctuating at a minimal rate. However it had a sharp shoot in 2012 to 15.44%., then a sharp fall to 8.5% in 2013. After which it remained steady all through to a value of 8.8% in 2015.

4.2.6 Real estate performance

The study sought to find out the performance of real estate in Machakos County. Figure 4.5 shows the findings.

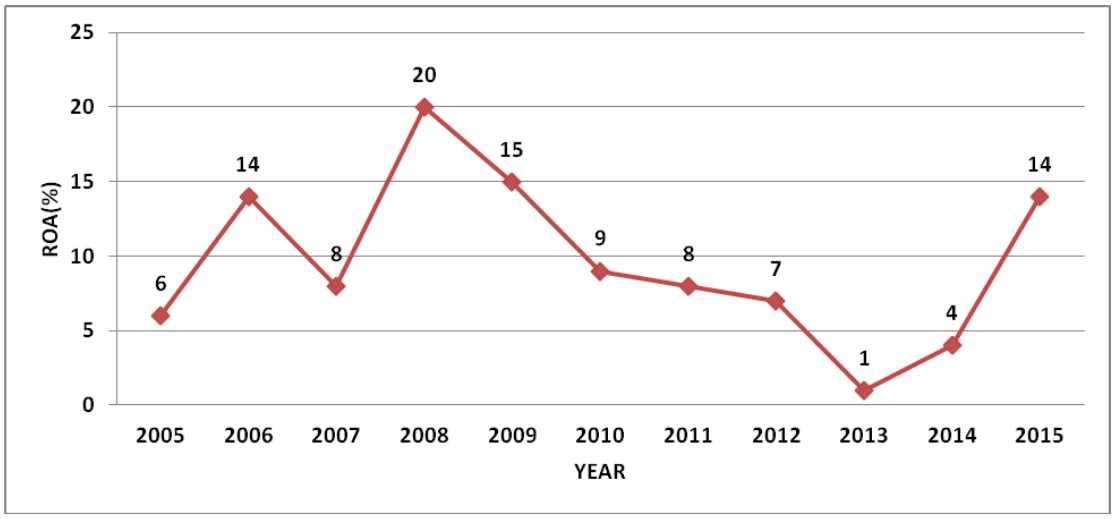


Figure 4.5: Trends in Housing sales price: Source Hass Consultants

Figure 4.5 shows that performance of the real estate in country as per the analysis of Hass Consultants on the rate of change in the housing sales prices. This can offer a benchmark from which we can project the real estate performance in our area of study in this case Machakos County. The findings indicate that the performance has been on steady rise and a mild decline between the years 2005 and 2007. But in the year 2008 we had a sharp shoot in rental buying rates to 20%, this could have been attributed to by the unstable economy the country faced during disputed 2007 elections. However, this later stabilised but on downward trend to a lowest rate of 1% in the year 2013. But the rate later rose to 14% in the year 2015.

4.3 Diagnostic Statistics

Diagnostic statistics test for normality and collinearity of variables. A multiple linear analysis of regression analysis was made use of in determining significance level of the coefficients in explaining the variation in between the indicators of economic growth and the extent of real estate performance. Correlation analysis established the direction of the relationship between the dependent and independent variables. The summary of Model assisted the level of to which the variables were affected one another. Finally, the analysis of variance assisted in determining the extent to which this model was fit to be used in this analysis.

4.3.1 Correlation Analysis

This type of inferential statistics establishes the direction to which the dependents and independent variables takes in their relationship. The strength of this relationship is indicated by Pearson correlation coefficient. It indicates the strength in relation between the independent and dependent variable, and represented by letter r. The

value of r can take a positive or a negative value depending on the direction of the relationship, though it has it value ranging between +1 and -1. A value of 0, indicate nil relation between the variables. Values of higher than magnitude than 0, represents an association that is positive in nature, for this type of association, an increase in one variable leads the other variable to increase also. But a value less than 0 indicate that an increase in one value causes the other value to decrease.

Table 4.1: Correlation Matrix. Source (Researcher, 2016)

Control Variables		Economic growth/GDP	Inflation rate	Interest rate	Foreign Direct Investment	Unemployment rate	Rate of return Real Estate
Year	Economic growth/GDP	1.000					
	Inflation rate	.794	1.000				
	Interest rate	-.233	.200	1.000			
	Foreign Direct Investment,	.263	.233	.173	1.000		
	unemployment rate	.290	.060	.068	.039	1.000	
	Rate of Change Housing Prices	.693	-.701	.019	.297	.478	1.000

The Pearson correlation test for the variables (economic growth, inflation rate, interest rate, foreign direct investment, unemployment rate, and the rate of return on asset by real estate) in assessing the level of association between the variables used in this study as indicated in table 4.1 above. The level of association between rate of return in real estate and foreign direct investment indicated a Pearson correlation ratio = (0.297) indicating a significant positive correlation. The relationship between rate of return in real estate and GDP growth rate indicated a Pearson correlation ratio = (0.693) indicating a significant positive correlation.

The relationship between rate of return in real estate and unemployment rates indicated a Pearson correlation ratio = (0.478) indicating a significant positive correlation. The relationship between rate of return in real estate and interest rates indicated a Pearson correlation ratio = (0.019) indicating a significant positive correlation. The relationship between Performance of real estate and inflation rates indicated a Pearson correlation ratio = (-0.71) indicating a significant negative relationship.

4.3.2 Regression Analysis

The researcher computed the regression analysis between the dependent variable rate of return in real estate against five predictor variables; GDP growth rate, inflation, foreign direct investment, interest rates and unemployment rates in Kenya.

The regression analysis was run within a confident level of 5%. This result of this analysis assisted in making a comparison whether the there was significant on the level of contribution of the predictor variable on the model of this analysis. This significant was obtained at a corresponding probability value and at $\alpha = 0.05$ (95% level significance).

Table 4.1: Model summary. Source (Researcher, 2016)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.863[a]	.745	.427	4.2640

a. Predictors: (Constant), Employment rate, Economic growth/GDP, Foreign Direct Investment, percent of GDP, Interest rate, Inflation rate

The findings shown in table 4.2 indicate the extent of disparities on the rate of return in real estate which are explained by the independent variables. The results of the

findings indicated that the change in the five economic growth indicators variables above contributed to an equivalent of 74.5% of a change in rate return on real estate's as depicted by the R-Square equal to 0.745. Also, the results revealed that there was a strong relationship between the economic growth indicators variables and the performance of real estates as shown by the coefficient of determination (R) equal to 0.863.

Table 4.2: Analysis of Variance ANOVA. Source (Researcher, 2016)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	212.873	4	53.218	4.691	.0021[a]
	Residual	56.727	5	11.345		
	Total	270.600	9			

a. Predictors: (Constant), Unemployment rate, Economic growth/GDP, Foreign Direct Investment, percent of GDP, Interest rate, Inflation rate

b. Dependent Variable: Rate of Change Housing Prices

From the results of the ANOVA analysis, the value of probability was 0.021 as obtained indicating a model of regression that had high significant in forecasting the relation that existed between rate of returns in real estates and the predictor variables as it was less than α=0.05. By use of the F-table, the $F_{12;5;0.05}$ was 4.36 which is less than the F-test statistic = 4.691 determined through analysis and shown in table 4.3 above, this implied that that the model was statistically significant for the analysis this study.

Table 4.3: Regression Coefficients. Source (Researcher, 2016)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.017	0.880		-1.227	.287
	Economic growth/GDP	.728	.994	-.288	-.733	.504
	Inflation rate	-.329	.378	.367	.872	.432
	Foreign Direct Investment,	.940	2.128	-.118	-.442	.682
	Interest rate	.281	.643	-.118	-.438	.684
	Unemployment rate	-.945	.010	.396	.328	.255

a. Dependent Variable: Rate of Change Housing Prices

The regression analysis results indicated an existence of a relationship between the performance in real estate investment growth and the predictor variables can be expressed using the following regression equation:

$$Y = 6.017 + 0.78\,X1 - 0.329X2 + 0.940X3 + 0.281X4 - 0.945$$

The finding of the regression equation has indicated that considering all economic growth metrics factors into account (GDP growth rate, inflation rates ,unemployment rates, foreign direct investment) constant at zero, performance of real estate will be 6.017.The findings presented also shows that taking all other independent variables at zero, a unit increase in GDP growth rate will lead to a 0.728 increase in the rate of returns in real estate's ; a unit increase in inflation rates will lead to a 0.329 decrease in rate of returns in real estate; a unit increase in unemployment rates will lead to a 0.945 decrease in rate of returns in real estate; a unit increase in Foreign direct investment will lead to a 0.940 increase in performance of real estates.

4.4 Discussion of the Findings

There has been fluctuation of the individual study variables fluctuated across the study period. The Pearson correlation test for the variables shows a positive relationship on the variables foreign direct investment (0.297), GDP growth rate (0.693), employment rates (0.478) while the relation between Performance of real estate and inflation rates indicated a Pearson correlation ratio = (-0.71) indicating a significant negative relationship.

These findings of this regression analysis indicates an existence of a strong interrelation within this indicators if economic growth and the return on investment on the part of real estate agents this was portrayed by the value of coefficient of determination (R) being equivalent to 0.863. The study is in line with that done by Muli (2012) who concluded that GDP because the finding indicated that indeed inflation rate and interest rates contributed greatly to the success and performance of real estate sector, while Inflation rate and GDP had statistically significant influences. Karoki (2013) study on Determinants of real estate prices in Kenya using descriptive and multivariate regression models established significant relationships between residential real estate prices and interest rates, GDP, and level of money supply.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section of the research give a presentation of summary on outcomes; we draw a conclusion based on these findings and give recommendations for the study and what need to be improved on future studies under the same subject matter. Section 5.2 discusses summary of the research, section 5.3 presents conclusion of the research findings, section 5.4 puts forward policy for adoption based on the recommendations, while section 5.5 discusses limiting factors faced in the course of this research and finally section 5.6 gives proposal on how to improve future study based on the same subject matter.

5.2 Summary on Research Findings

This research main objective was to investigate how economic growth indicators influence the performance of real estate investment in Machakos County Kenya, being a case for this research. The research was based on causal correlation study design with the secondary data. The secondary data used in this research consisted on the economic growth indicators that took the variable form such as rate of interest (%), GDP growth rate(%), unemployment rates (%), inflation rates and the rate of foreign direct investment(%). These data were obtained from world Bank, open data, the global economics, hass consultants, cytonn investment and global property guide. The data sets covered the period 2005-2015.

The data was cleaned, customized and analysed using statistical package for social sciences (SPSS) and findings summarized in graphs and tables Regression analysis

was conducted in order to establish various inferential statistics; R, R-Square, P-Value and F-Test statistics. The statistics were used to establish any relationship, strength of this existence in relation and also to find out if the model was statistical significance to support this study.

The study found that Pearson correlation test for the variables shows a positive relationship on the variables foreign direct investment (0.297), GDP growth rate (0.693), unemployment rates (0.478) while the relation between rate of return in real estate and inflation rates indicated a Pearson correlation ratio = (-0.71) indicating a significant negative relationship.

The results of regression analysis further revealed the existence of a very strong relation between these economic performance indicators and the rate of return in real estate investment, as indicated by the coefficient determinant (R) is equivalent to 0.863. The findings on the analysis of regression results indicated a relationship between rate of return in real estate and its predictor variables-indicators for economic growth can be expression with a linear regression model, and fits a linear equation as presented in equation two below.

$$Y = 6.017 + 0.78\,X1 - 0.329X2 + 0.940X3 + 0.281X4 - 0.945$$

Since the coefficients corresponding to various predictor variables were positive, the study established a positive relationship between real estate performance growth and each of the economic variables.

This was further supported by the positive coefficient of determination and correlation coefficient. Furthermore, the ANOVA results established a p-value of 0.021, this was

less in comparison to the value of α=0.05, indicating that the model for this regression was statistically significance and well fit for this study. This deeply implied that the indicators for economic growth would be well predictor to the rate of return on investment in real estate.

5.3 Conclusion

From the analysis of the research outcome above, conclusion drowned indicate that there are significant association between real estate rate of returns being the dependent variable and the independent variables- the indicators of the economic growth that were in this research. Most of these variables have a positive effect on rate of return on investment, implying that any change in the variables results into a positive change in the rate of performance in real estate investment. However, the performance in this industry of study will be in different magnitudes as represented by the value of Beta in the coefficients analysis of the regression model.

The outcome of regression analysis indicates that the entire variables inflation rate, rate of GDP, rate of employment and rate of foreign direct investment recorded positive effect on real estate performance. Therefore a positive change in any of them would create a substantial change in the rate of return in real estate performance.

The investment and proceed in real estate industry is a major contributor to GDP and a study on the same would be ideal with the view that Kenya has become a middle income country due to development and high vested interest in the Real Estate sector as an investment opportunity. The study check on the price indexing in real estate contributors like rental in terms of office place, household residential, housing or

mortgages and land pricing index that keeps appreciating on yearly basis, forming a major contributor to the country's economic growth.

5.4 Policy Recommendations

The CBK and other regulatory authorities of macroeconomic variables should regulate them in such a way that they lead the economy towards the growth and also lead to real estate performance. They should plan in advance and influence the economic variables in the right direction.

Data on real estate is quite minimal, scattered and undetailed. The government should engage the housing ministry to have a fully equipped data collection and analysis section. An annual or quarterly data collection and analysis exercise in each county should be carried out and compiled to ease availability of the data on the industry. This will enable decision making to improve the future of real estate in Kenya.

The government should also aim to grow the country's real GDP as this would enhance the performance of real estate industry in the economy as established by the study. Also, the study established that all the selected economic variables worsened just before, during or/and the immediate year following elections. The study recommends that the industry community should plan for the adverse effects of the changes before, during, and immediate years following an election

5.5 Limitations of the Research

The process of carrying out this research was not without limiting factors. First and foremost, the data sources were from varied sources spanning the Hass Property Index. , Word Bank Open Data on Kenya, Cytonn Investment Reports, Global

Economic Report, and Global Property Guide report. The date collected was not standardized hence data mining and cleaning was a tedious exercise. The Hass Property Index indicated in the appendix is also not a standard index in presentation and this caused a problem in deriving the necessary data as some quarters concentrated on various other factors other than the real index issues.

The research was also limited by the fact that the researcher had no audacity to present conclusive inferences on the research finding without any fundamental principles being tested and proved by other scientific research methodologies. Though, the research and the data used in this study prove with high probability that there exist a relationship between the two groups of study variables.

The research period was short to warrant the research more time to get more data from more and more sources for better comparison. The period taken was quite short and the variables and details required were enormous.

5.6 Proposals for Further Studies

The research recommends that additional readings should be done to reconnoitre on the specific factors that affect each of the study variables so as to get deeper insight on the cofounding variables, that works on the background to influence the way that particular variable affects the subject matter of the study.

Further studies can be conducted to establish economic growth indicators influence the performance of real estate investment in other counties. This can provide important information that can be used for comparison purposes.

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APPENDICES

Appendix 1: Raw Data

Year	Economic growth/GDP	Inflation rate	Foreign Direct Investment,	Employment rate	Interest rate	ROA
2005	5.91	10.3	0.11	9.5	8.43	
2006	6.47	14.5	0.2	9.5	9.44	
2007	6.85	9.8	2.28	9.4	8.5	
2008	0.23	26.2	0.27	9.4	8.88	
2009	3.31	9.2	0.31	9.4	7.78	
2010	8.4	4	0.45	9.3	6.50	
2011	6.11	14	0.33	9.2	8.48	
2012	4.55	9.4	0.32	9.2	15.44	
2013	5.69	5.7	0.68	9.1	8.5	
2014	5.33	6.9	1.55	9.2	8.8	
2015	5.65	6.6				

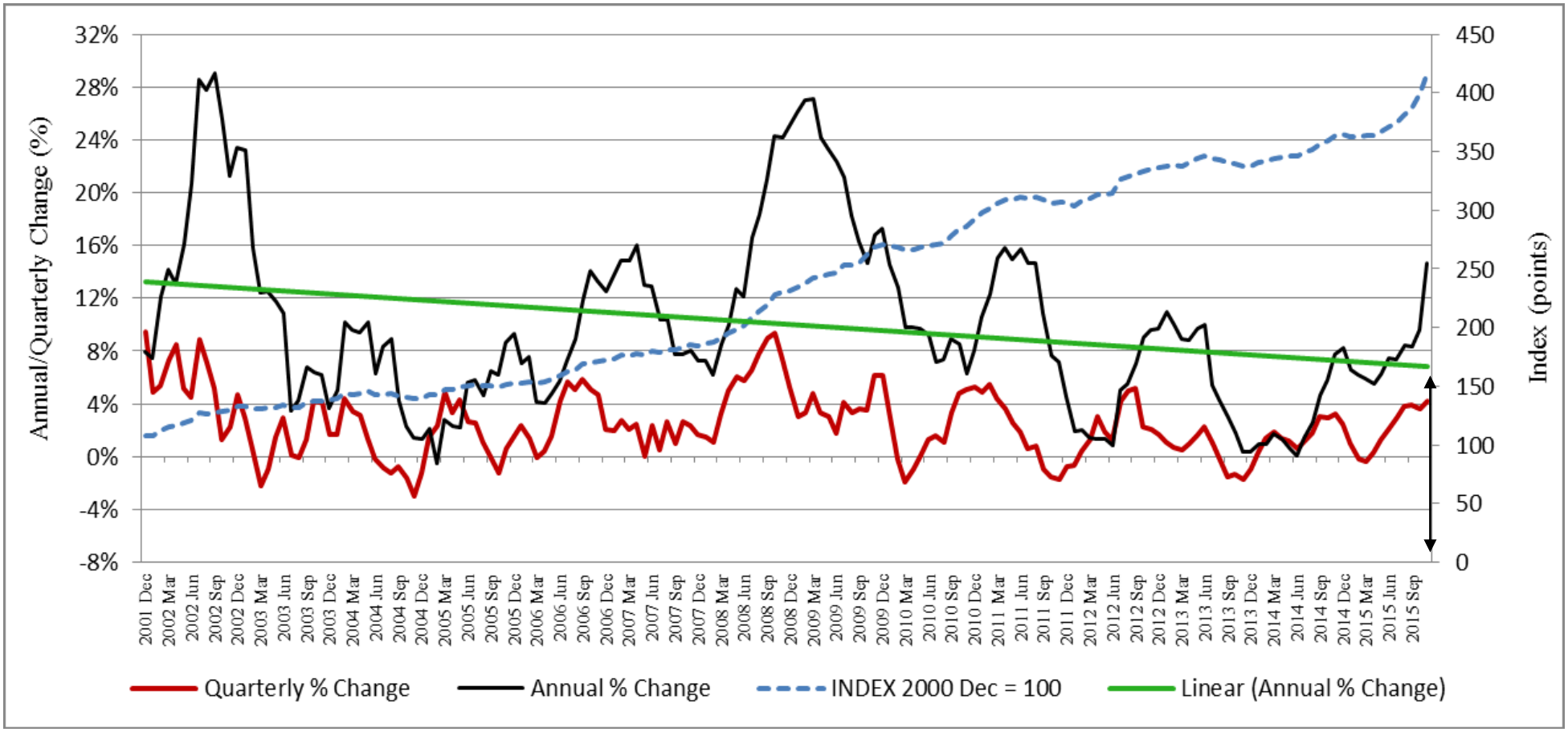
SOURCE OF DATA: The Global Economics

Appendix II: Raw Data Rates of Change in Housing Prices

Year	(ROA)Rate of Real Estate Price(rental Index)
2005	**6.0**
2006	**14**
2007	**8**
2008	**20**
2009	**15**
2010	**9**
2011	**8**
2012	**7**
2013	**1**
2014	**4**
2015	**14**

Source: Huss Consultants , Cytonn Investments and Global Property Guide

Trends in Housing Sales Prices



Source: Generated from Hass Consult data