INFLUENCE OF MACROECONOMIC VARIABLES ON FINANCIAL PERFORMANCE OF COMMERCIAL REAL ESTATE MARKET IN KENYA

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ABSTRACT

The real estate industry plays a very important role in the economy. The industry has increasingly attracted the attention of investors in the recent past. Kenya's real estate industry is expected to remain strong in coming years. This has not been the case and thus this study sought to establish the effects of macroeconomic variables on the financial performance of commercial real estate market in Kenya given they are key in the growth of the country's economy. The study was carried out through a descriptive research design. The measure of performance of the real estate companies was measured against the macroeconomic variables such as economic growth, inflation, interest rate, and exchange rate. The study found that GDP growth and performance of commercial real estate market in Kenya had a positive and significant relationship. The study also found that inflation and performance of commercial real estate market in Kenya had a negative and significant relationship. The study further found that interest rates had insignificant influence on the performance of commercial real estate market in Kenya. Also, the study revealed that exchange rates had positive and significant influence on the performance of commercial real estate market in Kenya. The study concluded that inflation rate has a substantial influence on the financial performance of the real estate market. Inflation reduces the value of money and hence does not favor the performance of real estate market. Also, the study concluded that exchange rate has significant influence on the financial performance of real estate market and that a unit increase in GDP growth will lead to an increase in economic growth which will stimulate investment in real estate market, hence there is positive correlation between GDP growth and the performance of real estate market. The study recommended that government should aim at controlling inflation rate in Kenya by making it generally constant at a low level.

Key Word: Macro Economy, Economic Growth, Inflation, Interest Rate, Exchange Rate

INTRODUCTION

Development in the Real estate industry helps in giving shelter to families, creating job opportunities, encouraging income distribution in an economy and poverty alleviation. Real estate property is property made up of a blend of land, buildings, and natural resources sitting on the land (Muli, 2013). Real estate development involves purchase, management, ownership, rental land or sale of real estate for profit (Abraham, 2009). Real estate investments relative to other form of investments are illiquid, demanding in terms of capital, although capital can be secured through mortgage, and highly dependent on cash flow. If the variables influencing the investment growth are not well mastered and controlled by an investor, investment in real estate is significantly risky (Geoffrey, 2011).

Economic growth is a long-run increase in the capacity of the economy to produce goods and services (Engen and Skinner. 1992). Kenya's real estate market is very efficient as changes in demand conditions in the real estate sector are reflected more accurately and quickly in real estate prices. If there is a relationship between economic growth and real estate prices, the real estate sector will be a sector to be used as a measure of economic performance. Therefore, real estate investments and prices are good measures for reflecting expected real estate demand, and serve as good predictors of economic growth (Knight Frank. 2011). The Kenyan real estate property market comprises of all property classes from houses occupied by a single family to those inhabited by many families, commercial land, agricultural land, office space, warehouses, shopping malls and retail shops (Masika, 2010). But Kenya's real estate sector continues to lag in fulfilling its fundamental roles because of various factors affecting the sector including the pursuit by most Kenyans to own houses, continuing move by people to urban areas, increased remittances from Kenyans living in diaspora among others. Consequently, prices of properties in urban areas have skyrocketed. Government investment in heavy infrastructure such as the construction of the southern bypass, eastern bypass, Mombasa road and Thika road has led to fast development of properties around these areas due to improved demand price. It is therefore important to look at factors that support investment growth to inform policies that would sustain future growth of the sector (Muli, 2013).

Problem Statement

Estate investment being a major form of investment expenditure is expected to be closely related to changes in GDP and other macroeconomic variables. Green (1997) uses the Granger Causality test to examine the effect of these two kinds of investment on GDP. They found that residential investment causes changes in GDP, while investments in equipment and machinery do not. The study shows that residential investment, like stock prices and interest rates, is a good predictor of GDP. This is because real estate is durable asset that take a long time to produce and thus investing in real estate is a forward-looking exercise

Coulson and Kim (2000) in explaining the relationship between residential investment and GDP contradicted what Green (1997) argued in his study. From his review, residential investment evidently Granger-causes consumption expenditure, which is the largest component of GDP in their model, so residential investment has a large effect on GDP itself (Coulson and Kim 2000). Although they gave an explanation why residential investment causes changes in GDP, the reasons why residential investment leads consumption expenditure were not discussed. Moreover, the focus of these two studies in the United States is mainly on residential investment, and there have seldom been studies on how real estate investments prices affect economic growth. Evidently, these studies also do not

take into account how fast real estate investments can be adjusted to a drastic change in the economy and how changes in the economy and hard times affect residential prices.

Therefore, there is lack of compatible results from studies carried out in other countries with little empirical studies on the relationship between economic growth and real estate development in Kenya. This gives an opportunity for further research to ascertain the relationship that exists between macroeconomic variables and financial performance of real estate companies in Kenya.

Objective of the Study

The main objective of this study was to assess the influence that macroeconomic variables have on financial performance of commercial real estate companies in Kenya.

LITERATURE REVIEW
Random Walk Theory

The random walk theory came to be in 1973 when author Burton Malkiel wrote "A Random Walk Down Wall Street." The random walk theory suggests that changes in stock prices have the same distribution and are independent of each other, therefore, the past movement or trend of a stock price or market cannot be used to predict its future movement. In short, this is the idea that stocks take a random and unpredictable path.

As noted in Karuana (2012), institutions are slowly moving into investment in real estate to diversify their portfolio. The use of real estate as a portfolio diversifier brings in the need to evaluate the relationship between risk and return as discussed by Harry Markowitz, (1958). He postulated that risk and return relate explicitly and accounted for the variability of asset returns, which he measured using the standard deviation of a security's return. The kind of assets to get into a firm's investment

even at the property level is an important indicator of how a portfolio of properties should be mixed to maximize the return and minimize the risk. Markowitz's work was important, it earned a Nobel Prize in Economics, because it shifted the focus of risk measurement from the risk of each security measured in isolation to the contribution of each security to the risk of a well-diversified portfolio, it is the risk that a security adds to a well-diversified portfolio that should be used to determine the risk-adjusted rate of return used in the process of capital budgeting.

Modern Portfolio Theory

Modern Portfolio Theory (MPT) is a theory of finance that endeavours to boost portfolio expected return for a given measure of portfolio risk, or proportionally limit risk for a given dimension of expected return, via deliberately picking the proportions of different assets. Before Markowitz's work, Portfolio Selection, issued in 1952 by the Journal of Finance, investors concentrated on evaluating the risks and rewards of individual securities in developing their portfolios naturally. Markowitz formalized this instinct. Itemizing mathematics of diversification, he recommended that investors center around choosing portfolios dependent on those portfolios' overall risk and reward qualities rather than only aggregating portfolios from securities that each exclusively has appealing risk -reward attributes. This implies investors should choose portfolios not singular securities. Treating single-period returns for different securities as irregular factors, we could assign them expected values, standard deviations and correlations. In light of these, we can figure the expected return and unpredictability of any portfolio built with those securities. We may regard instability and expected return as intermediaries for risk and reward. Out of the whole universe of conceivable portfolios, certain ones will ideally adjust risk and reward. These contain what Markowitz called an efficient frontier of portfolios. An investor should choose a portfolio that borders on the efficient frontier.

Tobin (1958) developed Markowitz's work by adding a risk free asset for the examination. This made it conceivable to leverage or deleverage portfolios on the efficient frontier. This brought about the concepts of a super-efficient portfolio and the capital market line. Using leverage, portfolios on the capital market line can topple portfolio on the efficient frontier. Sharpe (1964) formalized the Capital Asset Pricing Model (CAPM). This makes solidifies presumptions that prompt fascinating ends. The market portfolio sit on the efficient frontier and it is also Tobin's super-efficient portfolio.

As indicated by CAPM, all financial investors should hold the market portfolio, whether leveraged or de-leveraged with positions in the risk free asset. CAPM additionally presented beta and relates an asset expected returns to its beta. Portfolio theory gives a setting to understanding the collaborations of systematic risk and reward. It has moulded how institutional portfolios are overseen and roused the utilization of passive investment strategies. The arithmetic of portfolio theory is utilized in financial risk administration and was a hypothetical antecedent for the present-day value-at-risk measures.

Liquidity Preference Theory

Bibow (2005) Keynes depicts liquidity preference theory saying that individuals value cash for both the exchange of current business and its utilization as a store of riches. In this way, they will forfeit the capacity to earn interest on cash that they need to spend in the present, and that they need to have it on hand as a precautionary measure. Then again, when interest rates increase, they are happy to hold less cash for these reasons with the end goal of gaining a benefit. Elgar (1999) an individual needs cash since one has expenses that need, or is guessing on the future way of the interest rate, or

because an individual is so sure about the future and therefore it because detrimental to hold some assets in cash. These reasons wound up known as transactions, speculative and precautionary motives to demand cash. The banks liquidity inclination approach recommends that banks seek active balance sheet policies other than inactively accepting the demand for credit.
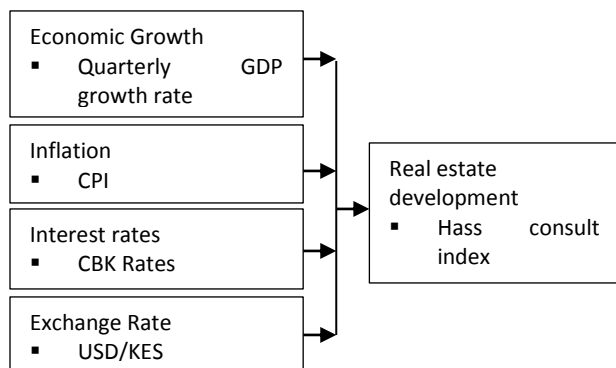
Agency Theory

Agency Theory clarifies the connection between the principals of the associations and the administrators of the firm. This relationship fuses segment of ownership and control, and administrative motivation. Agency Theory concerns itself fundamentally in settling issues that emerge in this relationship either due to misaligned objectives or as a result of risk levels of revulsion. In corporate risk management problems will in general affect the organization air towards taking and buffering. (Smith and Stulz, 1985). Agency theory likewise takes a gander at the intrigue varieties between the proprietors, heads and debt holders. In light of differences in profits, administration may end up taking many risks or knowingly avoid getting into undertakings which may lead to positive benefits (Mayers and Smith, 1987). In this way, agency theory infers that particular supporting methodologies can affect firm value. Stulz (1984) proposed why it is essential for the administrators of a company to take risk management. He attests that directors ought to work for the investors and they should concern themselves into enhancing the gainfulness of the organizations and the expected return of the organizations' value. For investors, great risk management will spare them on agency costs since they diminish in variety of profits of their organizations.

Managerial incentives in the execution of risk management have been considered by various researchers with a negative effect (Faff and Nguyen, 2002; MacCrimmon and Wehrung, 1990; Geczy et al., 1997). In any case, positive confirmation was found however by Tufano (1996) in his examination of the

gold mining industry in the US Financial strategy theories were attempted in examinations of the money related hypothesis, since both speculations give practically identical figures in such manner however the immensity of experimental proof is by all accounts against this hypothesis. Agency theory underpins the procedure of risk management as a response to confound between administrative motivating forces and shareholder interests. Stakeholders and management will always differ towards the interest of the firm and the objective of risk management is also expected to vary. Shareholders may expect high risk high return investments, but the managers might prefer low risk and high return investments. The agency theory should emphasize on good risk management practices geared towards aligning the interest of the managers and those of the shareholders so as to impact on the financial performance.

Conceptual Framework

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┌─────────────────────────────┐
│ Economic Growth             │
│  ▪ Quarterly        GDP     │───┐
│    growth rate              │   │
└─────────────────────────────┘   │
┌─────────────────────────────┐   │    ┌──────────────────────┐
│ Inflation                   │   ├───▶│ Real estate          │
│  ▪ CPI                      │───┤    │ development          │
└─────────────────────────────┘   │    │  ▪ Hass    consult   │
┌─────────────────────────────┐   │    │    index             │
│ Interest rates              │   │    └──────────────────────┘
│  ▪ CBK Rates                │───┤
└─────────────────────────────┘   │
┌─────────────────────────────┐   │
│ Exchange Rate               │   │
│  ▪ USD/KES                  │───┘
└─────────────────────────────┘
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Independent Variable   Dependent variable

Source: Author (2018)

Figure 1: Conceptual Framework

RESEARCH FINDINGS AND DISCUSSION

Correlation Results

Correlation analysis helps to establish whether there is a relationship between variables of study.

The analysis does not necessarily explain causal effect between variables. This study carried out correlation analysis in order to establish if there was any significant relationship between gross domestic product, interest rate, inflation rate, exchange rate and the financial performance of commercial real estate market.

Correlation coefficient brings out the magnitude of the relationship between two variables (Mugenda and Mugenda, 2003). A positive coefficient means that there is a positive relationship between variables, while a negative coefficient means that there is a negative relationship between variables. A zero coefficient means that there is no association between the variables (Mugenda & Mugenda, 2003).

Correlation analysis results in table 1 showed that there is a positive and insignificant correlation between interest rate and GDP growth (r = 0.223, p-value= 0.166). Findings in table 1 also revealed that there is a negative and significant relationship between inflation rate and GDP growth (r = -0.449 p-value= 0.004). The correlation between exchange rate and GDP growth was positive and significant (r= 0.534, p-value 0.000). Results indicate that there was a positive correlation between GDP growth and the performance of real estate (r= 0.435 p-value=0.005). The results supported those of Ong (2013) who investigated the relationship between macroeconomic variables (population, inflation, costs of construction, gross domestic product (GDP), interest rate and the housing price in Malaysia). The study applied the explanatory method using data of between 2001 and 2010 from the ministry of finance valuation and property services department in Malaysia. The study found that GDP had a positive correlation with the housing prices. Also the study findings agreed with those of Ma (2010) who found that there was significant positive influence of housing investment on GDP growth. These findings also agreed with that of Karuana (2012) who found that prices of real estate had a strong positive correlation on GDP in that a unit increase in housing prices would result to a unit increase in GDP.

Table 1: Correlation Analysis

	GDP_ Growth	Interest Rates	Inflation Rate	Exchange Rate	Performance _Real Estate
GDP	1.000				
Interest Rates	0.223	1.000			
	0.166				
Inflation Rate	-0.449*	0.287	1.000		
	0.004	0.072			
Exchange Rate	.534*	0.165	-0.296	1.000	
	0.000	0.31	0.064		
Performance _Real Estate	0.435*	0.541	-0.013	0.448*	1.000
	0.005	0	0.937	0.004	

Regression Analysis

In statistical modeling, regression analysis is a statistical process for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables (or 'predictors'). There are various assumptions for multiple linear regressions. First it needs the relationship between the independent and dependent variables to be linear. Secondly, the multiple linear regression analysis requires all variables to be normal. Thirdly, multiple linear regressions assumes that there is little or no multicollinearity in the data

The results presented in table 2 presented the fitness of model used in the regression model to explain the study phenomena. GDP growth, interest rate, inflation rate and exchange rate provide a moderately good fit in predicting changes in financial performance. This was supported by coefficient of determination also known as the R square of 68.8%. This means that Budget allocation, project management and project monitoring and evaluation explained 45.1% of the variations in the dependent variable which was financial performance of real estate market. These results further meant that the model applied to link the relationship of the variables was satisfactory.

Table 2: Model Fitness

Indicator	Coefficient
R	0.671
R Square	0.451
Adjusted R Squared	0.388
Std. Error of the Estimate	1.8597

In statistics significance testing the p-value indicates the level of relation of the independent variable to the dependent variable. If the significance number found is less than the critical value also known as the

probability value (p) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else the model would be regarded as non-significant.

Table 3 provided the results on the analysis of the variance (ANOVA). The results indicated that the overall model was statistically significant. Further, the results implied that the independent variables were good predictors of financial performance. This was supported by an F statistic of 7.181 and the reported p value (0.000) which was less than the conventional probability of 0.05significance level.

Table 3: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	99.332	4	24.833	7.181	.000
Residual	121.043	35	3.458		
Total	220.375	39			

Regression of coefficients results in table 4 showed that GDP growth and financial performance of commercial real estate market are positively and significant related (β =0.255, p=0.005). The table also indicated that inflation rate and financial performance of commercial real estate market are negatively and significant related (β =-0.554, p=0.004). It was established that interest rate and financial performance of commercial real estate market were positively and insignificantly related (β =0.022, p=0.83). The findings of the study agreed with those of Kimani and Memba (2016) who carried out a study using vector auto regression method to examine the effect of interest rate, inflation rate, and GDP fluctuations on real estate growth in Kenya. The study found out that an increase in exchange rate increased the prospects of investment in real estate in Kenya.

Table 4: Model Coefficients of Macroeconomic variables

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	-14.334	3.386	-4.234	0.000
GDP_growth	0.255	0.111	2.29	0.005
Inflation rate	-0.554	0.181	-3.053	0.004
Interest rate	0.022	0.1	0.216	0.83
Exchange rate	0.06	0.032	2.727	0.005

Thus, the optimal model for the study was;

$Y_{i,t} = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \acute{\varepsilon}_i$

$Y_{i,t} = -14.334 + 0.255 X_{1i} - 0.554 X_{2i} + 0.022 X_{3i} + 0.06 X_{4i} + \acute{\varepsilon}_i$

Y= Real Estate Development

X_1= GDP

X_2= Inflation

X_3= Interest rates

X4= Exchange rates

$\acute{\varepsilon}_i$= Error term.

SUMMARY

The first objective of the study was to determine the effect of economic growth on performance of

commercial real estate market in Kenya. The results revealed that GDP growth and performance of commercial real estate market in Kenya had a positive and significant relationship.

These findings agreed with that of Ma (2010) who found that there is significant positive influence of housing investment on GDP growth. These findings also agreed with that of Karuana (2012) who found that prices of real estate had a strong positive correlation on GDP in that a unit increase in housing prices would result to a unit increase in GDP.

The second objective of the study was to determine the influence of inflation on performance of commercial real estate market in Kenya. The results revealed that inflation and performance of commercial real estate market in Kenya had a negative and significant relationship (r = -0.449 p-value= 0.004).

These findings agreed with that of Wambui (2013) who conducted a study on Effect of inflation on performance of Nairobi securities exchange 20 share index. The study found out that there is insignificant and negative correlation between inflation and the performance of Nairobi securities exchange 20 share index.

The third objective of the study was to the influence of interest rates on performance of commercial real estate market in Kenya. The findings revealed that interest rates had insignificant influence on the performance of commercial real estate market in Kenya.

These findings agreed with that of Kimani and Memba (2016) who conducted a study using vector auto regression method to examine the effect of interest rate, inflation rate, and GDP fluctuations on real estate growth in Kenya. The study findings indicated that interest rate had a negative and insignificant effect on real estate growth.

The fourth objective of the study was to the influence of exchange rates on performance of commercial real estate market in Kenya. The findings revealed that exchange rates had positive and significant influence on the performance of commercial real estate market in Kenya. These findings agreed with that of Kimani (2016) who found out that an increase in exchange rate increased the prospects of investment in real estate in Kenya.

CONCLUSION

The study concluded that inflation rate has a substantial influence on the financial performance of the real estate market. Inflation reduces the value of money and hence does not favour the performance of real estate market. The study also concluded that high lending rates has a negative influence on the financial performance of real estate market. An increase in interest rates means that real estate market has to pay more to finance their operations. Also the study established that exchange rate has significant influence on the financial performance of real estate market and that a unit increase in GDP growth will lead to an increase in economic growth which will stimulate investment in real estate market, hence there is positive correlation between GDP growth and the performance of real estate market.

RECOMMENDATIONS

Based on the findings the study recommended that the government should aim at controlling inflation rate in Kenya by making it generally constant at a low level. This may attract more investors in the real estate as it will make the investment environment more predictable.

The study recommended that Central Bank of Kenya and other regulatory bodies need to regulate the interest rate as it was established that high interest rates negatively affect the performance of real estate market. Further, exchange rates should be managed by the government in order to stimulate investment in the real estate market.

Area of Further Study

The study was only limited to secondary data from secondary sources. Further researches should be conducted through primary data. Primary data is considered to be first hand and accurate and reduces biasness that would otherwise be experienced when using secondary data.

The study was limited to only four macroeconomic variables that affect financial performance of commercial real estate market. A comparative study can be done on other variables that may affect the financial performance of the commercial real estate market.

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