THE EFFECT OF INTEREST RATE VOLATILITY ON FINANCIAL PERFORMANCE OF REAL ESTATE FIRMS IN KENYA

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DECLARATION

This Research Project is my original work and has not been presented for a degree in any other University.

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This Research project has been submitted for examination with my approval as the student's supervisor.

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DEDICATION

I wish to dedicate this research project to my parents, Mr. & Mrs. Wamocha, and my siblings: Joy, Esther, Samuel & Shalom, who through the support they gave me, made the development of this proposal possible.

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I thank all persons who contributed to my achievement of this course. The formulation of this research project has been a long and challenging process, I wouldn't have succeeded without their support.

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ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
ARDL	Adopting the Autoregressive Distributed Lag
CBK	Central Bank of Kenya
CVAR	Co-integrated Vector Autoregressive Model
ECM	Error Correction Mechanism
FDI	Foreign Direct Investment
JIBAR	Johannesburg Interbank Agreed Rate
PPP	Purchasing Power Parity
QE	Quantitative Easing
RERI	Rate and real interest rate
VAR	Vector Autoregressive Model

ABSTRACT

The research studied the effect of interest rate volatility on financial performance of real estate firms in Kenya. The purpose for this research was to determine the influence of interest rate volatility; differentials in interest rates, foreign direct investments and overdraft interest rate on financial performance as measured by ROA. Financial statements were used to collect data from 78 Real estate firms and data analysis involved conducting multiple regression analysis. The research revealed that differentials in interest rates, foreign direct investments and overdraft interest rate s caused a variation of 36.2% on financial performance. This signaled that 36.2% variation in financial performance could be related to differentials in interest rates, foreign direct investments and overdraft interest rate. The study additionally showed a positive strong association amongst overdraft interest rates and financial performance of Real estate firms in Kenya as indicated by strong positive correlation coefficient. ANOVA results indicated that the general model had a significance value of 0.00% that reveal that the information was perfect for creating an inference as the p-value was less than 0.05. The study results led to a conclusion that overdraft interest rates strongly affected the financial performance of Real estate firms. Findings showed that an increase in differentials in interest rates, foreign direct investments and overdraft interest rate positively influence the financial performance of Real estate firms. These study recommends that it is necessary for Real estate firms to lower their overdraft interest rates since it was found to have the highest influence on their financial performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The function of interest rates in the macroeconomic environment can have a significant impact on real estate enterprises' cash flows and asset prices (Kaplan & Violante, 2018). Rents and, as a result, corporate income are influenced by a variety of factors, including the economy. Interest rates also have an impact on property returns and asset values. Interest rates are thus, in a very basic sense, a crucial risk factor for real estate.

According to Mubarok, Hamid, and Arif (2020), interest rates affect equities in a number of ways: the effect on future dividend expectations, the equity risk premium, and the discount rate. The market for the public real estate is an intriguing industry to analyze because of the impact of the macro-economy and interest rates on the principal property market and, as a result, the firm's assets.

Any changes in interest rates, according to Szarowska (2018), have a significant impact on household saving, consumption behavior, company investment and domestic and foreign traders. This influences capital accumulation and portfolio allocation decisions. Interest rates in banks change, making loans more expensive or more accessible. In a time where there are high interest rates, the borrowing will only attract a few persons, reducing consumer demand is declining due to a lack of financing available to buy purchases. Simultaneously, it motivates more people to save, resulting in a higher savings rate.

Furthermore, high rates of interest lower the capital needed to grow enterprises, slowing the economy due to supply constraints. Low mortgage interest rates boost real estate demand (Huy, Nhan, Bich, Hong, Chung, & Huy, 2021).

1.1.1 Interest Rate Volatility

The charge in percentage for the usage of cash is known as the interest rate. It is charged in the incidence cash is lent and repaid when the money is returned. The lender's interest rate is conveyed as a fraction of the total amount borrowed (Kimberly Amadeo, 2012). Borrowers pay interest on money they borrow from a lender at a rate called an interest rate. The interest rate is a percentage of the principle paid in a specified duration (m) per time that is taken yearly.

As shown in a study by Khawaja and Musleh (2007), a rise in interest rates depresses the investment and saving activities of borrowers and depositors. Hajilee, Al Nasser, and Perez (2015) discovered a reverse correlation between interest rate uncertainty and banking sector expansion in emerging nations. The ability of a banking sector to support economic advancement might be limited by macroeconomic conditions that are unstable. The interest rate is one of these macroeconomic elements, as interest rate changes have been identified as one of the important aspects that might severely impact the banking industry, particularly in developing nations.

1.1.2 Interest Rate Volatility and Financial Performance

Akinlo and Adejumo (2014) explored the influence of currency rate volatility on non-oil exports in Nigeria in a related study. From 1986(1) through 2008, the authors used the Error Correction model with quarterly data (4). The study's findings found that, in the long run, exchange rate volatility has a positive and considerable influence on non-oil exports, whereas the impact in the short term is negligible. Likewise, Abdul-Mumuni (2016) evaluated the association between exchange rate volatility and the performance of Ghana's manufacturing sector. The research revealed that the expansion of the manufacturing industry is positively associated to exchange rate but adversely correlated to import using the Autoregressive Distributed Lag (ARDL) technique. The findings are consistent with Lawal's (2016) findings on Nigeria's industrial sector.

Kasman, Vardar and Tunc 2011) evaluated the influence of interest rate and exchange rate volatility in the returns of stocks in Turkish banks. The analysis found that bank stock returns were susceptible to fluctuations of exchange rates and interest rates fluctuations. The authors also stated that interest rate volatility was a significant predictor of Turkish banking stock returns volatility.

According to Rugasira, (2015), Uganda real estate industry had the worst performance in 2013 with interest rates peaking from 16% to 30% in 2011 and 2012. This happened after annual headline inflation topped 30.5% in 2011. Home prices drastically dropped as many homebuyers resorted to renting other than buying property causing an increase in mortgage defaults.

1.1.3 Real Estate Firms in Kenya

The building industry and construction in Kenya and is well advanced, with high-quality engineering, construction, and architectural design services widely available. Due to the execution of projects such as the Urban Transportation Infrastructure Plan, the industry is currently on the rise. The expansion in population and migration from rural to urban areas has created several investment opportunities, particularly in the housing sector (Woula, 1996).

In Kenya, however, reasonably priced housing is a serious issue. Slums and informal settlements have constantly expanded, and they now house a significant portion of the people in urban settlements. The informal settlements are known for their crowded tin roofed and mud dwellings. There is also a lack of infrastructure in terms of sewerage, safe drinking water, electricity, and access roads. This has been fueled by either government housing incentives, not being sufficient to make homes accessible to the lower income category where demand is high and supply is critical, or misappropriation of these incentives. This is according to Villa Care, a real estate firm that has been in existence for 20 years. Property fraud instances have increased, and a thorough investigation has been conducted due diligence on properties of interest is therefore necessary. Construction materials are becoming more expensive due to increased competition in the sector.

Putting money into the real estate business, both at the improvement phase and at the end-user level, is equally difficult. Only two financial institutions in Kenya specialize in real estate financing. Kenya's Savings and Loans (S&L) and Housing Finance

Corporation are the two institutions. On January 1, 2010, the former amalgamated with its mother firm, the Kenya Commercial Bank, leaving the Housing Finance Corporation as the solitary autonomous real estate finance corporation. The Kenyan real estate industry's restricted financing choices have been characterized by highly tight financing options and generally high interest rates. It is prudent for a real estate firm to adopt competitive approaches in the face of these problems so as to get rid of the obstacles and achieve outstanding results

1.2 Research Problem

The rise of the real estate business is critical to a country's general financial development. This is because it improves household well-being by enhancing improved shelter and assisting in the establishment of personal wealth, that may be leveraged to create additional riches (Taylor, 2018). Furthermore, the growth of the real estate business adds to employment, the growth of the banking sector which eventually leads to the growth of capital markets.

The financial literature has looked into the influence of interest rate volatility on financial institutions from a variety of approaches (Gardner, Lockwood, Pienaar, & Maina, 2019). Several scholars, for example, have looked into the influence of interest rate volatility on prices of stock and return in stock (Yourougou 1990; Kasman, Lael Joseph & Vezos 2006; Papadamou & Siriopoulos 2014; Vardar, & Tunc 2011; Campbell 1987; Tripathi & Ghosh 2012; Zhou 1996; Harasty & Roulet 2000, Elyasiani & Mansur 1998; Alam & Uddin 2009) According to the findings of these studies, interest rate volatility has a negative and considerable effect on returns of the bank stock.

Unlike in more developed countries, where stocks and bonds are used to finance real estate development, mortgage financing is used mostly in less developed countries like Kenya. One of the results of deregulation has been increased rivalry in the business of real estate, since many companies now freely give mortgages, resulting in increased demand for owner-occupied property. The volatility in interest rate plays a big role in deciding whether or not to take out a mortgage.

Taking out a mortgage is one of the most major financial obligations that a person can engage in, and mortgage lenders and commercial banks have experienced an increase in customers seeking financing to accomplish their house ownership dreams. Interest rate targets are a significant financial policy tool that is used to address challenges like as lack of jobs, investment and inflation. The interest rates are mostly reduced when central banks attempt to increase business and encourage money circulation in their investments. Interest rates that are low, contrarily, can be dangerous because they can cause the occurrence of economic bubble where a lot of finances are invested in the stock market and the real estate. Previous researches related to this research have largely concentrated on influence of interest rate volatility on financial institutions. Very few have been done on financial performance of real estate.

This has left a wide gap for researches on interest rate volatility; in relation to financial performance of Real estate firms. This research therefore examined the influence of interest rate volatility on financial performance of real estate firms in Kenya.

1.3 Research Objectives

This study was guided by the following objectives;

i. To assess the influence of differentials in interest rates on financial performance of real estate firms in Kenya.
ii. To assess the influence of Foreign Direct Investments on financial performance of real estate firms in Kenya.
iii. To assess the influence of overdraft interest rate on financial performance of real estate firms in Kenya.

1.4 Value of the Study

Outcomes of this research create additional knowledge and form an appropriate framework upon how the real estate organizations can tackle challenges that arise from interest rate to enhance their financial performance.

The conclusions are also valuable to academicians who can use them as a foundation for research to be done. Scholars may adopt this research for considerations on financial planning.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains the evaluation of research carried out on literature and is in tandem with the research variables. This covers studies all over the world, regional and in Kenya, theoretical framework; conceptual framework and literature review summary.

2.2 Theoretical Review

The Classical Theory of Interest Rates, Market Segmentation Theory and Loanable Funds Theory guided this study.

2.2.1 The Classical Theory of Interest Rates

As indicated in the theory, demand factors based on marginal utility are on one side of the market, while supply contemplations founded on marginal cost are on the other. As a result, the idea compares the source of savings to the demand for credit. The equilibrium rate is computed by use of the supply and demand curves, according to Glaeser et al. (2010), by identifying the crossing point of the curves. As a result, if savings exceed investments, the interest rate falls until the market reaches equilibrium and the other way round, if savings are lower than investments, the interest rate increases up to when the reward for saving drives larger savings rates, instigating the market to realize equilibrium once more.

The classical theory of interest rates, on the other hand, ignores factors other than demand and supply that might influence interest rates, for example the generation of finances, the

relevance of revenue and investment, and variations in an economy's principal borrowers (Krainer, 2009).

Modern economic theory has emphasized the importance of the rates of interests in economy behavior, claiming that rates in interest influence business that in sequence influences the overall amount of economic investment. Furthermore, through its part in regulating interest rates, financial strategy is assumed a fundamental role in determining the success of economic activities. In reaction to a shift in inflation expectations, monetary authorities are expected to adjust nominal interest rates. This will allow the real interest rate to adjust in the direction that is intended (Stiglitz, 1995).

The essential features of this theory that are pertinent to this research are that it contrasts the source of savings with the growth for lending.

2.2.2 Market Segmentation Theory

According to this theory, securities with varying maturities are poor substitutes for one another. This is factual when we look at the perspective of borrowers and lenders, according to Lloyds (1979). There are constraints on the level of substitutability amongst securities of diverse maturities due to institutional considerations that dictate the section of the maturity scale that the sellers and buyers of securities will function.

According to this theory, securities with varying maturities are not related to one another. This implies that the prevailing interest rates for short term, intermediate and long term instruments should be viewed separately.

2.2.3 Loanable Funds Theory

The quantity of loanable finances and credit demand, as indicated in the loanable funds theory, affect interest rates (Robertson & Wicksell,1930s). The interest for loanable funds comes from domestic businesses, governments, consumers, and overseas borrowers, according to loanable funds theory. Spreading of finance balances, domestic savings, money making in the investment structure, and international loaning all contribute to supply. Long-term interest rates are determined by these elements, while short-range interest rates are established by economic financial situations. Because there are so many variables to consider in loanable funds theory, stability will only be realized at the time all of them are in balance.

Scholars in the past completed a number of studies that were beneficial to households, policymakers, homebuyers, and sellers. The rates of mortgage are one of the most important elements of the affordability of home index, and when the rate rises, the index falls, and vice versa (Mc Gibany & Nourzad, 2004). Because of their increasing indebtedness in the last two decades, households in countries with variable mortgage rates, such as Sweden, are extremely sensitive to interest rate changes (Debelle, 2004). Income, rates of interest and predicted rates are all factors that influence the price of a home (Vries & Boelhouwer, 2005).

Because of their risk aversion, banks might be oblivious to modifications in monetary policy. Raising interest rates, for example, is thought to have accelerated economic collapse in East Asia and, instead of supporting the stability of the exchange rate, higher default risk may have spurred capital flight, lowering risk adjusted anticipated earnings.

The connection between low loan rates and housing booms is particularly tenuous. Low borrowing rates, according to conventional wisdom, should boost home values or the value of any long lasting asset.

As a result, the fact that housing values increase when interest rates decrease is not proof that interest rates that is low lead to bubbles. To establish this scenario, one need to show that housing values have a tendency of overreacting to interest rate decreases, implying that appreciations are more than essentials warrant.

2.3 Empirical Review

Pisit (2014), in assessing the impact of Foreign Direct investment on the production sectors using economic data from 2005 to 2013, established that Foreign Direct investment has a positive impact on the agriculture, manufacturing, retail trade, construction, wholesale and financial sector. The competitiveness of Thailand's manufacturing sector being attributed to the technical knowhow and capital provided by Foreign Direct investment in Thailand.

Fereidouni & Masron (2012), in their investigation of the relationship between Foreign Direct investment in other sectors and FREI using fixed effect panel data approach in selected emerging economies during 2000-2008 implied that Foreign Direct investment contributed to internalization of FREI in 16 emerging economies and that policy makers in these countries expects increased entrance of FREI investors and developers as Foreign Direct investment expands.

Borio, Gambacorta, and Hofmann (2015) looked at how monetary policy affects bank profitability. The maturity transition sector becomes increasingly profitable for banks when the short-term-long-term interest rate disparity widens. A decrease in short-term rates reduces financing costs, whereas an increase in long-term rates increases profits since banks can charge borrowers greater rates. EME banks are thus identical to their counterparts in developed economies.

Sarac and Karagoz (2016) looked at the impact of the short-term interest rate on the rate of exchange in Turkey. According to the literature, rising rates of short-term interest could result to a repeat of the financial crisis of 2007/08. In order to establish financial stability, it is critical to research rates of short term interest and costs of bank funding. The research is based on three-monthly time duration data from the year 2000 up to 2014. The research used the Vector Autoregressive Model (VAR) to estimate the regression, and the information is established to be the same at first difference. As a proxy for bank finance costs, the three-month Johannesburg Interbank Agreed Rate (JIBAR) is employed.

The principal overdraft rate, 10-year government bonds, and financial ratio, on the other hand, are employed as substitutions for bank capital, short-term as well as long-term, correspondingly. The findings reveal a long-term positive and substantial association between the factors. The 10-year government bonds, prime overdraft rate and capital ratio findings all meet the priory predictions. The results for Gross Domestic Product progression demonstrate a positive link that defies a priori beliefs. The study shows that oscillations in JIBAR were caused by variations in its rate, while variations in the prime

rate were caused by JIBAR. The research proposes policy alternatives that include strategies for continuous to increase bank capital buffers in order to reduce bank financing costs and, as a result, borrowers' short-term interest rates.

Belke, Gros, and Osowski (2017) investigated new indication based on global interest rate differentials on the efficiency of the quantitative easing policy of Fed's. It looked into the effects of unconventional monetary policies on worldwide yield curves. Long-term rates were dictated by a general universal declining tendency that had by this time showed itself before to the financial catastrophe, according to the research. The US Federal Reserve's bond-buying operations (often termed as Quantitative Easing (QE)) had little effect on this worldwide co-movement, that is the worldwide lower drift in interest rates.

Using recursive estimating methods, the connection among dollar and euros (riskless) lasting interest rates by use of the Co-Integrated Vector Autoregressive Model (CVAR) is modelled. There was no indication that QE1 (or subsequent QE episodes) weakened the transatlantic interest-rate association or the interest-rate to rate of exchange of USD relationship. The same conclusion was obtained via a robustness test utilizing a Vector Autoregressive Model (VAR) with output differentials inflation rates, and interest rates for 11 nations (compared to the United States). Thus, there is scant indication that central bank bond purchases in the United States had a distinct and independent influence on US interest rates.

Breitenbach, Zerihun, and Kasongo (2020) inflationary relations between the real exchange rate and real interest rate differentials were studied that targeted nations using

empirical analysis. Using quarterly panel data from 1993 to 2018, this work empirically investigates the long-run link between Real Interest Rate (RERI) and Real Exchange Rate differentials for a panel of 12 inflation rates that targeted nations using co-integration methods. The Purchasing Power Parity (PPP) and discovered interest similarity theories are primarily utilized to develop a theoretical link amongst real exchange rates and interest rate differentials in the long run. In open economy macroeconomics, this theoretic link has turn into a standard and accepted theory.

According to Njihia (2005), the loan component has a major impact on the profit of mentioned banks. Banks' capital adequacy levels may be hurt if they do not receive enough deposits, and they may be unable to provide loans, hence interest on deposits is a critical factor. As market interest rates rise, dissimilar degrees of elasticity cause non proportionate deviations in the value of assets and obligations, influencing the banking firm's value. The interest rate spread's behavior is crucial to understanding this problem.

Muthaura (2012) looked at the link among real estate venture and interest rates with a emphasis on Kenya, examining the variables that leads to high lending costs and how they might be reduced to boost investment in real estates. According to the results of the study, rates of interest do have an impact on home prices, and majority of real estate retail investors and lenders are required to raise house charges to cover the breakeven and price of lending.

Njiru and Moronge (2013) investigated the factors influencing the expansion of Kenya's mortgage sectors, focusing on the National Housing Corporation. In comparison to credit

risk, interest rate volatility was identified to be one of the primary elements affecting the expansion of the mortgage market in Kenya.

Nyaga (2013) using Foreign Direct investment and GDP data between 1982 and 2012 found that there is a positive relationship between Foreign Direct investment and economic growth in Kenya. He established that Foreign Direct investment flow lead to increased imports than exports, investment than saving which lead to higher wages and productivity in labor. Also he associated Foreign Direct investment with employment creation thereby alleviating poverty in the host nation and stimulating productivity of local firms through transfer of technology and expertise. The study recommended research on the effect of Foreign Direct investment on specific sectors of the economy.

Kamweru and Ngui (2017) explored the impact of interest rates on the real estate business performance in Nairobi County. The research purpose was to establish the way interest rates influenced the success of Kenya's real estate market, particularly in the study area. A descriptive survey research design was utilized in this research. According to the research, loan interest rates in Nairobi have a negative and significant link with real estate development. Deposit interest rates were shown to be insignificantly associated to the expansion of a Nairobi real estate firm, according to the findings.

Deposit interest rates were shown to be insignificantly associated to the expansion of a Nairobi real estate firm, according to the findings. Overdraft interest rates have a substantial link with real estate expansion in Nairobi, according to the long term model outcomes. Inflation showed a negative and important link with real estate firm performance in Nairobi, according to the data. The performance of real estate enterprises

was found to have a positive link with GDP progression, however the relationship was small.

2.4 Conceptual Framework

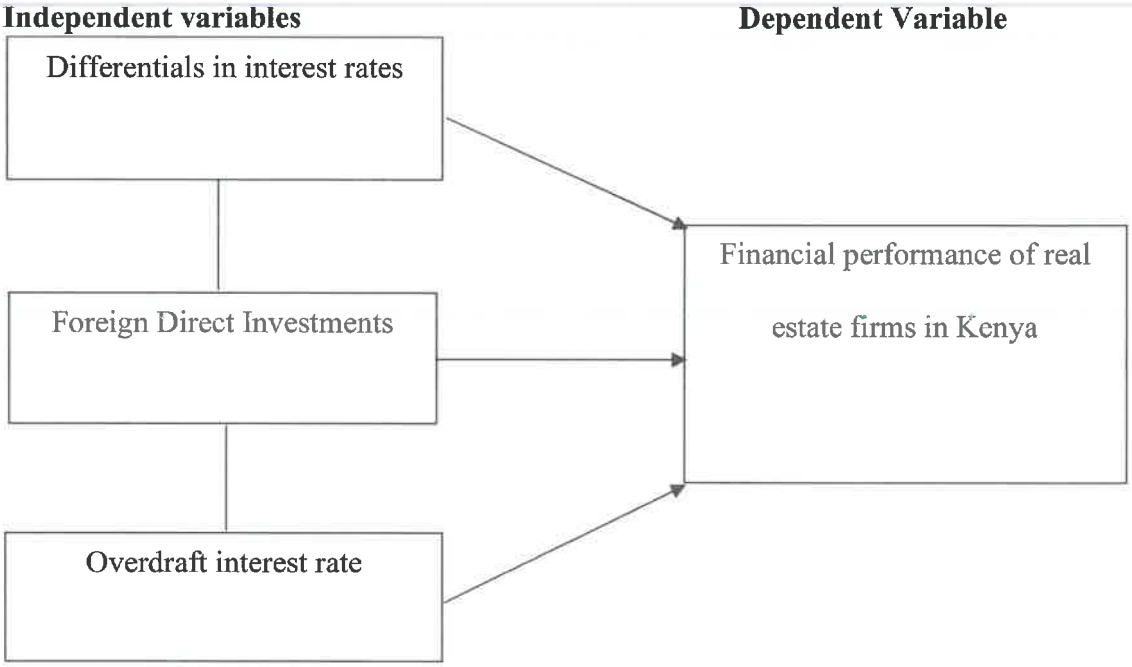

Figure 2.1: Conceptual framework

2.5 Summary of Literature Review

The empirical review indicated that there is an association amongst interest volatility and real estate financial performance. The variables that were found to influence financial performance included differentials, interest rates, Foreign Direct Investments and overdraft interest rate. For example, according to Eisingerich et al. (2009), relationship commitment favorably moderates the financial success of service innovation, while relationship variety negatively moderates it. In terms of internal characteristics, existing evidence suggests that business size has a beneficial impact on service innovation success

(McDermott and Prajogo 2012). However, while past study has concentrated on either product (Calantone et al. 2010) or service innovation moderating impacts (Eisingerich et al. 2009).

Earlier research has been unable to provide light on the possibility for contextual elements to have differing effects on both forms of creativity. As a result, the purpose of this research is to look into the influence of rate of interest volatility on the performance in finance of real estate enterprises in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter involves procedures to be taken in the research, the research plan and how data will be collected, analyzed and presented. The chapter also shows the research design, target population, collection of data and how the analysis of data was done.

3.2 Research Design

The research embraced Descriptive research design, because sort to profile the effect of interest rate volatility on financial performance of real estate firms in Kenya, which was generalized to a larger population. Mugenda and Mugenda (2003), expounds on this type of research design as a systematic yet an empirical investigation where manifestation of the independent variables has either already occurred or cannot be manipulated, thus the researcher did not have a direct control. Such study looks into aspects of what the phenomenon is, where it is and how the phenomenon is hence building a profile on it (Mugenda & Mugenda, 2003).

3.3 Population and Sample

Target Population is a totality or cumulative of all the items with members who exhibit given specifications or the whole group of items that contains at least one common (Polit & Hungler, 1992). Therefore, population denotes a set of items, individuals or subjects that a sample or samples are obtained.

In this study, the target population was the 78 property developers who are members of Kenya Property Developers and Association. A schedule of the target population is contained in Appendix I. According to Akhtar (2016), a census is a study that encompasses the entire population and is useful when the overall population is less than 100 people. Because of its advantages, the census approach was adopted. To begin with, all respondents had the same chance to participate.

In this case, all the property developers registered under Kenya Property Developers and Association (as at 30 June 2020) had the opportunity to participate in the study. Secondly, when effectively applied, census surveys are certainly capable of yielding representative results (Cooper & Schindler, 2014; Saunders & Thornhill, 2016).

3.4 Data Collection

Secondary data was utilized in this research. This was gathered from the supervisory reports of Central Bank of Kenya (CBK) and individual Real estates' published financial statements. Data collection sheet was used for recording the data which was then edited, followed by data coding and data cleaning. The data covered the period between 2016 and 2020. Aggregate annual data was used in the study. Limited Real estate specific data was available as Real estates do not publish this data publicly. All efforts were made to get this data from specific Real estate firms under study.

3.5 The Analytical Model

The below analytical model was used to test the connection between interest rate volatility and financial performance of Real estate firms in Kenya. Interest rate volatility (Independent Variable) X_1-X_3, financial performance (Dependent Variable) Y, in Real

estate firms in Kenya, thus the following model was used:

Financial performance $\mathbf{(Y)} = \beta_0 + \beta_1 \mathbf{X_1} + \beta_2 \mathbf{X_2} + \beta_3 \mathbf{X_3} \ldots + \beta_p \mathbf{X_p} + \varepsilon$

Where; Y - Dependent Variable (Financial performance (ROA))

β_0 - Regression constant or intercept

β_1- β_3 - Coefficients of change on Y induced by each change in X_i

ε - error term

X_1 - X_3 - are independent variables (differentials in interest rates, Foreign Direct Investments and overdraft interest rate).

Where;

X_1 - Differentials in interest rates (Subtraction of discount from posted yearly rates)

X_2 - Foreign Direct Investments (Change in net cross boarder investments)

X_3 - Overdraft interest rate

In comparison of the performance of different categories of real estate financial performance, the research carried out analysis of the above factors which affect the relationship between interest rate volatility and the financial performance of real estate firms.

3.6 Data Analysis and Presentation

Data was analysed using the Regression model and excel models and presented using tables.

3.7 Tests of Significance

The researcher performed a number of tests on the data obtained, with the aim of testing the model's strength and the relationship existing between interest rate volatility and the financial performance of real estate companies. The variables tested included linearity tests, normality tests and correlation coefficient. Further, the researcher conducted an Analysis of Variance (ANOVA). This study also tested the spearman's Rank Correlation Level of Significance at the 5% level.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section presents the interpretation of findings from regression analysis done as well as the findings of analysis of the effect of interest rate volatility on financial performance of real estate firms in Kenya. Regression was conducted on the data from the supervisory reports of Central Bank of Kenya (CBK) and individual Real estates' published financial statements. Data collection sheet was used for recording the data which was then edited, followed by data coding and data cleaning. The data covered the period between 2016 and 2020. Aggregate annual data was used in the study. Limited Real estate specific data was available as Real estates do not publish this data publicly. All efforts were made to get this data from specific Real estate firms under study.

4.2 Research Findings

The descriptive statistics and inferential analysis using multiple regression is presented in this section.

4.3 Descriptive Statistics

Table 4.1 indicates the statistics in descriptive and distribution of the constructs considered in this research: differentials in interest rates, foreign direct investments and overdraft interest rate. The descriptive statistic considered were maximum, minimum, skewness and kurtosis, standard deviation and mean.

Table 4.1: Descriptive Statistics (Average 2016-2020)

	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Differentials in interest rates (Subtraction of discount from posted yearly rates)	.2635	.2894	.282206	.0065645	-.994	.374	.321	.733
Foreign Direct Investments (Change in net cross boarder investments)	.2761	.3877	.325326	.0240045	.995	.374	1.396	.733
Overdraft interest rate	.1061	.1502	.119842	.0078701	1.563	.374	4.800	.733
Valid N (listwise)								

Table 4.1 shows that differentials in interest rates indicated .282206 of mean and standard deviation of .0065645. Overdraft interest rate, on average was .119842 across all the years under study, which is closer to the minimum rate posted. Mean value of foreign direct investments was .325326 which denotes an average value for all the firms under the study period.

4.4 Correlation Analysis

Pearson correlation was used to measure the degree of association between variables under consideration that is independent variables (Differentials in interest rates

(Subtraction of discount from posted yearly rates), Foreign Direct Investments (Change in net cross boarder investments), Overdraft interest rate) and the dependent variable (Financial performance (ROA). Pearson correlation coefficients range from -1 to +1. Negative values indicate negative correlation and positive values indicates positive correlation where Pearson coefficient <0.3 indicates weak correlation, Pearson coefficient >0.3<0.5 indicates moderate correlation and Pearson coefficient>0.5 indicates strong correlation. The results are presented in Table 4.2.

Table 4.2: Correlations

		DIR	FDI	OIR	FPROA
DIR	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	78			
FDI	Pearson Correlation	.099**	1		
	Sig. (2-tailed)	.204			
	N	78	78		
OIR	Pearson Correlation	.586**	.092**	1	
	Sig. (2-tailed)	.000	.237		
	N	78	78	78	
FPROA	Pearson Correlation	.453**	.225**	.529**	1
	Sig. (2-tailed)	.000	.003	.000	
	N	78	78	78	78

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

NB: DIR - Differentials in interest rates, FDI - Foreign Direct Investments and OIR - Overdraft Interest Rate, FPROA - Financial performance (ROA))

The analysis above shows that overdraft interest rate has the strongest positive influence on financial performance (Pearson correlation coefficient =.529 and P=0.00) implying

that the relationship is statistically significant. Differentials in interest rates also has a strong positive influence on financial performance (Pearson correlation coefficient =.453 and P=0.00) implying that the relationship is statistically significant. In addition, Foreign Direct Investments is positively correlated to financial performance (Pearson correlation coefficient =.225 and P<0.03) implying a statistically significant relationship though the association is moderate. The results in the correlation matrix imply that the differentials in interest rates and overdraft interest rate are very crucial determinants of financial performance, followed by foreign direct investment though the relationship between foreign direct investment and financial performance is weak.

4.5 Regression Analysis

In order to examine effect of interest rate volatility; differentials in interest rates, foreign direct investments and overdraft interest rate significantly on financial performance (ROA), this study performed a multiple regression.

Table 4.3: Summary of Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.602[a]	.362	.347	5.43019

a. Predictors: (Constant), differentials in interest rates, foreign direct investments and overdraft interest rate

Through checking the R square - coefficient of determination, the deviation of dependent construct owing towards variations in independent variable was revealed. From the results, the R square was 0.362, this indicates that there was variation of 36.2% on Financial performance (ROA) because of changes in differentials in interest rates, foreign direct investments and overdraft interest rate at 95% confidence level.

This reveals 36.2% variation in financial performance (ROA) of the 78 Real estate firms in Kenya might be because of differentials in interest rates, foreign direct investments and overdraft interest rate. The relationship between the study variables was shown by R which is the correlation coefficient. The research revealed a positive relationship among the research constructs as revealed through 0.602.

Table 4.4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2036.702	3	678.901	23.024	.000[b]
	Residual	4841.442	75	29.487		
	Total	6878.144	78			

a. Dependent Variable: Financial performance (ROA)

b. Predictors: (Constant), Differentials in interest rates, foreign direct investments and overdraft interest rate

Table 4.4, shows that from the ANOVA the study variables, a significance level of 0.000 that indicated that the information was appropriate for inference making on the populations parameter as the (p-value) which shows significance was smaller than 5%. The F critical was 23.0243 at 5% level of significance. Subsequently the F critical (23.024) was more than F calculated, this showed the general model was substantial and that differentials in interest rates, foreign direct investments and overdraft interest rate significantly affected financial performance (ROA).

Table 4.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.468	3.155		9.024	.000
	Differentials in interest rates	-.144	.090	-.151	2.606	.011
	Foreign direct investments	.075	.059	.085	2.262	.020
	Overdraft interest rate	.325	.084	.418	3.884	.000

a. Dependent Variable: Financial performance (ROA)

The equation is thus as shown below:

$Y = 1.468 + 0.144\ X_1 + 0.075\ X_2 + 0.325X_3$

The findings from regression equation revealed that the coefficient of differentials in interest rates, foreign direct investments and overdraft interest rate, Financial performance (ROA) of Real estate firms in Kenya was 1.468. A change of a unit in differential in interest rates results to change in financial performance by a factor of -0.144. A change of one unit in foreign direct investments causes a change in the financial performance at the Real estate firms in Kenya by 0.075, one step increase in overdraft interest rate results to increase in financial performance by 0.325.

At 95% level of confidence and 5% level of significance, foreign direct investments was 0.020 level of insignificance; differentials in interest rates revealed a 0.011 significance and overdraft interest rate indicated 0.000 significance. Therefore, interest rate was most significant. Generally, overdraft interest rate had the highest influence on financial performance, differential in interest rates and foreign direct investments

also had significant influence on the financial performance, but not as much as overdraft interest rates.

4.6 Findings Interpretation

The research results revealed a change of 36.2% on financial performance of Real estate firms in Kenya as a results of changes in differentials in interest rates, foreign direct investments and overdraft interest rate. This shows that 36.2% change in interest rate volatility could be accounted for by differentials in interest rates, foreign direct investments and overdraft interest rate. The study also indicated a positive strong relationship between differentials in interest rates, foreign direct investments, overdraft interest rate and financial performance as indicated by correlation coefficient being positive.

The study again indicated that differentials in interest rates, foreign direct investments and overdraft interest rate significantly influences the financial performance (ROA). The resultant equation of regression was;

$$Y = 1.468 + 0.144\ X_1 + 0.075\ X_2 + 0.325X_3$$

The regression revealed that putting differentials in interest rates, foreign direct investments and overdraft interest rate to a constant zero meant that financial performance would be at 1.468. The research indicated a positive relationship between differentials in interest rates, foreign direct investments and overdraft interest rate and results in financial performance. All the variables revealed to significantly influence financial performance of Real estate firms in Kenya.

The study findings agree with those by Kaplan and Violante, (2018) that revealed that the function of interest rates in the macroeconomic environment can have a significant impact on real estate enterprises' cash flows and asset prices. Rents and, as a result, corporate income are influenced by a variety of factors, including the economy. Interest rates also have an impact on property returns and asset values. Interest rates are thus, in a very basic sense, a crucial risk factor for real estate.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study results after interpretation led to the following conclusion and recommendations. The presentation is founded by the study objectives. The study intended to find out the effect of interest rate volatility on financial performance of real estate firms in Kenya.

5.2 Summary

This research endeavored to determine the ways interest rate volatility affect financial performance of real estate firms. Multiple regression analysis was done using information collected from the 78 real estate firms' financial statements. The regression revealed that differentials in interest rates, foreign direct investments and overdraft interest rate caused a variation of 36.2% on financial performance of real estate firms in Kenya. This signaled that 36.2% variation in financial performance could be related to differentials in interest rates, foreign direct investments and overdraft interest rate. The study additionally showed a positive strong association amongst overdraft interest rates and financial performance in real estate firms in Kenya as indicated by strong positive correlation coefficient. ANOVA results indicated that the general model had a significance value of 0.00% that reveal that the information was perfect for creating an inference as the p value was less than 0.05. The study also indicated that interest rates had the biggest influence on the financial performance.

Regression equation indicated that putting differentials in interest rates, foreign direct investments and overdraft interest rate at a zero constant, financial performance of real estate firms in Kenya will be at 1.468. The research indicated a positive relationship between differentials in interest rates, foreign direct investments, overdraft interest rate and financial performance.

5.3 Conclusion

The study results showed that interest rates positively affected the financial performance of the Real estate firms; therefore, the research settles that interest rate volatility positively influences financial performance of the Real estate firms in Kenya.

Findings showed that the differentials in interest rates, foreign direct investments and overdraft interest rate positively influence the financial performance of Real estate firms, hence the research settles differentials in interest rates and overdraft interest rate strongly positively affect the financial performance of the Real estate firms.

5.4 Recommendations for Policy

These study findings lead to recommendation that it is necessary for Real estate firms to lower their overdraft interest rates since it was found to have the highest influence on the financial performance.

It is essential for Real estate firms to make sure there is differentials in interest rates in order to enhance their financial performance since it was found to positively influence financial performance.

5.5 Limitations of the Study

In achieving the objectives, the study covered 5-year period as from the year 2016 to 2020. Secondary data was used and collected from the financial statements and 78 Real estate firms. The research was restricted to the rate of accuracy of the information got from the financial statements. The information is verifiable because it was from the financial statements and the 78 Real estate firms, it might be disposed to these deficiencies.

The research covered a duration of 5 years from 2016 to 2020. An extended length would have taken in to account several economic significances for example recessions and booms. The study only covered 78 Real estate firms; therefore, there should be a study on other firms in other sectors in Kenya that whose financial performance is affected by interest rate volatility.

5.6 Areas for Further Research

An added research should be conducted titled: effect of interest rate volatility on financial performance of other types of firms since this research focused on the results of financial performance of Real estate firms in Kenya.

Research gap exist on the influence of interest rate volatility since this study only covered three factors; differentials in interest rates, foreign direct investments and overdraft interest rate. Another study should be done on other factors that might be influencing the financial performance.

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APPENDICES

APPENDIX I: LIST OF REAL ESTATE FIRMS IN KENYA

No.	COMPANY NAME	TYPE OF DEVELOPMENT
1	Acorn Management Services Ltd	Student Residences
2	AHCOF Investments (Kenya) Ltd	Residential
3	Amazon Projects Ltd	Residential Commercial
4	Amboseli Court Ltd	Residential
5	AMS Properties Ltd	Residential Commercial Industrial
6	Bahati Ridge Development Ltd	Residential
7	Blueline Properties Ltd	Residential Commercial
8	Camelot Consultants Ltd	Residential Commercial
9	Century City Property Ltd	Residential Commercial
10	Cheriez Properties Ltd	Residential
11	Chigwell Holdings Ltd	Residential
12	Cytonn Real Estate	Residential
13	Coral Property International Ltd	Residential Commercial Industrial
14	Daykio Plantations Ltd	Residential Commercial
15	Dewbury Ltd	Residential
16	Dunhill Consulting Ltd	Residential Commercial Industrial
17	Elegant Properties Ltd	Residential Commercial
18	Elm Ridge Ltd	Residential Commercial
19	Endless Africa Ltd	Residential
20	Enkavilla Properties Ltd	Residential
21	Fairdeal Development & Infrastructure Ltd	Residential Commercial
22	Fedha (Management) Ltd	Residential Commercial
23	Golden Compass Ltd	Residential
24	Heri Homes Properties Ltd	Residential
25	HF Development and Investments Ltd	Residential

		Commercial
26	Home Afrika Ltd	Residential Commercial
27	House and Homes Ltd	Residential Commercial Industrial
28	Homescope Properties Ltd	Residential
29	iJenga Ventures Ltd	Residential Commercial Industrial
30	Immensity Holdings Ltd	Residential
31	INFPAC Ltd	Residential
32	Jabez Properties	Residential
33	Kamhomes Investments Ltd	Residential
34	Karibu Homes	Residential
35	Karume Holdings Ltd	Residential Commercial Industrial
36	Kings Developers Ltd	Residential Commercial Industrial
37	Kzanaka Ltd	Residential Commercial
38	Laser Property Services Ltd	Project Management
39	Leo Capital Holdings Ltd	Residential
40	Lordship Africa	Residential
41	Manrik Holdings Ltd	Residential Commercial
42	Meera Construction Ltd	Residential Commercial
43	Mlima Construction Company Ltd	Residential
44	MML Turner & Townsend	Residential Commercial Industrial
45	Mugumo Developments Ltd	Residential
46	Natureville Homes	Residential
47	Norcent Projects Ltd	Residential
48	Optiven Ltd	Controlled Land Development
49	PDM (Kenya) Ltd	Residential Commercial Industrial
50	Pioneer Holdings (Africa) Ltd	Residential Commercial
51	Prissy Apartments Ltd	Residential

52	Prism Residential Ltd	Residential
53	Realux Holdings Ltd	Residential
54	Rozana Properties Ltd	Residential
55	Sayani Investments Ltd	Residential Commercial Industrial
56	Sherry Blue Properties Ltd	Residential
57	Shreeji Development Ltd	Commercial
58	Sigimo Entreprises Ltd	Residential
59	SJR Properties Ltd	Residential Commercial
60	SLOK Construction Ltd	Project Managers
61	Sohail Developments Ltd	Residential
62	Soma Properties	Commercial
63	Superior Homes Kenya Ltd	Residential
64	14Trees Kenya Ltd	Residential
65	Tatu City Ltd	Residential Industrial
66	Tecnofin Kenya Ltd	Residential
67	The Combined Warehouses Ltd	Industrial
68	The Epic Properties Ltd	Residential
69	The GoDown Arts Centre	Commercial
70	Tilisi Developments Ltd	Residential Commercial Light Industrial
71	Trident Estates Ltd	Residential Commercial Industrial
72	TSG Realty Ltd	Residential
73	Two Rivers Development Ltd	Residential Commercial
74	Unity Homes Ltd	Residential
75	Username Investments Ltd	Controlled Land Development
76	VAAL Real Estate	Residential
77	Vishwa Developers Ltd	Residential Commercial
78	Wood Products Kenya Ltd	Industrial

DIFFERENTIALS IN INTEREST RATE

COMPANY NAME	2016	2017	2018	2019	2020
Acorn Management Services Ltd	0.22714	-2.66633	0.811881	-10.91996	-2.66633
AHCOF Investments (Kenya) Ltd	0.731741	-3.31988	0.80944	-5.28844	-3.31988
Amazon Projects Ltd	4.317122	-18.0087	0.77412	-5.48216	-18.087
Amboseli Court Ltd	-0.11981	2.0081	0.80046	-32.78239	2.7581
AMS Properties Ltd	-0.11981	2.0071	0.80046	-32.78229	2.7581
Bahati Ridge Development Ltd	-0.11981	2.0071	0.80046	-32.789	2.0071
Blueline Properties Ltd	-0.11981	2.0075	0.80066	-32.7829	2.0071
Camelot Consultants Ltd	0.160513	0.03172	0.44249	5.11655	0.0031
Century City Property Ltd	0.194062	0.0747	0.41108	4.06469	0.0747
Cheriez Properties Ltd	0.248244	0.0165	0.40739	3.16628	0.0165
Chigwell Holdings Ltd	0.28062	0.0063	0.38250	2.21991	0.0003
Cytonn Real Estate	0.28062	0.0603	0.38273	2.52101	0.0066
Coral Property International Ltd	0.28062	0.06603	0.38673	2.29201	0.32603
Daykio Plantations Ltd	0.28062	0.54663	0.38253	2.76301	0.65603
Dewbury Ltd	0.053311	0.02656	0.79397	7.16901	0.03456
Dunhill Consulting Ltd	0.052265	0.02439	0.83216	8.92548	0.03029
Elegant Properties Ltd	0.055632	0.0215	0.13002	8.97586	0.02189
Elm Ridge Ltd	0.073218	0.0359	0.82921	6.70794	0.03529
Endless Africa Ltd	0.102299	0.04410	0.37171	3.52806	0.04101
Enkavilla Properties Ltd	0.102299	0.04411	0.82071	3.52006	0.04413
Fairdeal Development & Infrastructure Ltd	0.102299	0.0401	0.82071	3.57806	0.04411
Fedha (Management) Ltd	0.141562	0.35338	0.32704	4.261476	0.35338
Golden Compass Ltd	0.109821	0.50337	0.265815	5.920341	0.43107
Heri Homes Properties Ltd	0.188565	0.10567	0.32303	5.266347	0.10947
HF Development and Investments Ltd	0.218578	0	0.264071	5.607347	0
Home Afrika Ltd	0.243395	0	0.292275	3.404608	0
House and Homes Ltd	0.084661	0.0363	0.328934	13.8987	0.0283
Homescope Properties Ltd	0.084661	0.0383	0.305934	13.89836	0.0383
iJenga Ventures Ltd	-0.11303	0.2048	0.572831	-23.44524	0.2044
Immensity Holdings Ltd	0.095622	0.29761	0.54588	22.89811	0.29761
INFPAC Ltd	-0.15424	0.36792	0.608663	-16.86504	0.36792
Jabez Properties	0.099869	0.30783	0.63897	20.2099	0.3033
Kamhomes Investments Ltd	0.09342	0.3351	0.602978	23.84327	0.33855
Karibu Homes	0.099683	0.2958	0.64350	18.28874	0.29798
Karume Holdings Ltd	0.099683	0.29579	0.58528	18.2884	0.2798
Kings Developers Ltd	0.007089	0.01913	0.42427	57.8383	0.9131
Kzanaka Ltd	-0.46431	0.0036	0.30915	-1.74064	0.0035
Laser Property Services Ltd	-0.46431	0.00586	0.304045	-1.70064	0.00356
Leo Capital Holdings Ltd	-0.46431	0.0586	0.04055	-1.700964	0.003
Lordship Africa	-0.46431	0.00358	0.30455	-1.700064	0.0086

Manrik Holdings Ltd	-0.46431	0.23586	0.65449	-1.70064	0.0086
Meera Construction Ltd	-0.46431	0.0035	0.30404	-1.70094	0.0035
Mlima Construction Company Ltd	0.160513	0.1072	0.44247	5.11655	0.0032
MML Turner & Townsend	0.194062	0.00174	0.41108	4.06469	0.1747
Mugumo Developments Ltd	0.194062	0.70747	0.18108	9.98769	0.0457
Natureville Homes	0.194062	0.93457	0.41108	4.067469	0.1747
Norcent Projects Ltd	0.194062	0.0047	0.411598	4.064659	0.8747
Optiven Ltd	0.194062	0.00174	0.411108	4.053269	5.01747
PDM (Kenya) Ltd	0.194062	0.0056	0.09108	4.07469	0.0612
Pioneer Holdings (Africa) Ltd	-0.11981	2.00581	0.41746	-32.7729	2.7581
Prissy Apartments Ltd	-0.11981	2.07581	0.80046	-32.7729	2.07581
Prism Residential Ltd	-0.11981	2.00781	0.80046	-32.78229	2.0075
Realux Holdings Ltd	-0.11981	2.0071	0.80746	-32.78729	2.2381
Rozana Properties Ltd	-0.11981	2.17581	0.800646	-32.7829	2.34581
Sayani Investments Ltd	-0.11981	2.0071	0.81746	-32.7829	2.0081
Sherry Blue Properties Ltd	-0.11981	2.02581	0.80046	-32.7823	2.00751
Shreeji Development Ltd	0.45062	0.12747	0.41658	4.257469	0.67747
Sigimo Entreprises Ltd	0.98262	0.34747	0.411108	7.57469	0.0347
SJR Properties Ltd	0.78262	0.00747	0.95108	7.57469	0.00174
SLOK Construction Ltd	0.95062	0.75217	0.95108	3.57469	0.34047
Sohail Developments Ltd	0.14062	0.00747	0.595108	6.657469	0.45437
Soma Properties	0.67332	0.0017	0.95108	4.16469	0.00747
Superior Homes Kenya Ltd	0.42062	0.1747	0.45108	4.57412	0.3747
14Trees Kenya Ltd	0.28062	071603	0.68673	2.91301	0.3456
Tatu City Ltd	0.28062	0.46603	0.88673	2.92161	0.1273
Tecnofin Kenya Ltd	0.28062	0.0063	0.38273	2.92161	0.0066
The Combined Warehouses Ltd	-2.66633	0.4323	0.71673	3.21301	0.4765
The Epic Properties Ltd	-3.31988	0.0023	0.38273	2.92131	0.0066
The GoDown Arts Centre	-18.0087	0.00661	0.380673	2.81301	0.00603
Tilisi Developments Ltd	2.007581	0.00603	0.38253	2.56301	0.0045
Trident Estates Ltd	2.007581	-2.66633	0.881881	-10.1766	-2.6633
TSG Realty Ltd	2.007581	-3.31988	0.65944	-5.28817	-3.31988
Two Rivers Development Ltd	2.007581	-18.0087	0.77452	-5.43216	-18.0087
Unity Homes Ltd	0.003172	2.00581	0.80066	-32.7829	2.0075
Username Investments Ltd	0.001747	2.90081	0.80046	-32.7829	2.0071
VAAL Real Estate	0.016965	2.00281	0.41746	-32.7829	2.1758
Vishwa Developers Ltd	0.006603	2.0071	0.81746	-32.789	2.0081
Wood Products Kenya Ltd	0.006603	0.00312	0.44207	5.11645	0.0032

FOREIGN DIRECT INVESTMENTS

COMPANY NAME	2016	2017	2018	2019	2020
Acorn Management Services Ltd	4,857,567	9,067,342	6,834,811	3,676,759	4,588,301
AHCOF Investments (Kenya) Ltd	5,526,312	8,257,199	5,288,963	5,258,633	8,141,296
Amazon Projects Ltd	1,859,214	2,324,566	2,474,835	8,224,041	2,158,291
Amboseli Court Ltd	3,105,000	6,731,000	1,526,874	5,254,478	4,012,985
AMS Properties Ltd	5,452,698	1,285,365	1,257,853	18,141,296	17,140,293
Bahati Ridge Development Ltd	22,586,128	5,553,141	28,590,148	33,145,240	3,765,276
Blueline Properties Ltd	4,387,847	9,781,344	6,283,990	4,278,228	4,290,554
Camelot Consultants Ltd	8,524,889	6,856,363,	8,524,889	6,856,363	8,524,889
Century City Property Ltd	1,526,536	1,538,062,	2,526,536	1,538,032	1,526,536
Cheriez Properties Ltd	1,231,589	4,655,419,	4,231,589	4,655,419,	4,231,589
Chigwell Holdings Ltd	1,287,123	2,583,085,	1,287,123	8,583,085	6,287,123
Cytonn Real Estate	2,459,236	2,760,294	1,459,236	2,634,760,	1,459,236
Coral Property International Ltd	4,524,889	6,856,363,	8,524,889	6,856,363,	8,524,889
Daykio Plantations Ltd	1,526,536	1,538,062,	1,526,536	1,538,062,	1,526,536
Dewbury Ltd	4,231,589	4,655,419,	4,231,589	4,419,892	1,231,589
Dunhill Consulting Ltd	3,524,889	12,853,789	8,524,889	6,363,789	2,524,889
Elegant Properties Ltd	1,526,536	1,538,062,	1,526,536	1,062,832	1,526,536
Elm Ridge Ltd	2,231,589	4,655,419,	4,231,589	4,419,892	4,231,589
Endless Africa Ltd	6,287,123	8,583,080	6,287,123	8,583,085,	6,287,123
Enkavilla Properties Ltd	2,459,236	2,634,494	2,459,236	6,660,294	1,459,236
Fairdeal Development & Infrastructure Ltd	2,524,889	6,856,363	4,524,889	6,363,789	3,524,889
Fedha (Management) Ltd	1,526,536	10,538,832	10,526,536	10,538,032	1,526,536
Golden Compass Ltd	2,7290,000	7,711,653	7,729,043	2,729,000	5,662,960
Heri Homes Properties Ltd	1,452,211	12,152,681	10,452,211	6,664,104	7,152,638
HF Development and Investments Ltd	21,425,859	8,528,851,	21,425,859	13,945,215	17,500,811,
Home Afrika Ltd	29,125,875	13,409,892	29,125,875	21,642,213	9,655,419
House and Homes Ltd	8,459,612	8,544,096	5,459,612	25,158,447	8,533,016,
Homescope Properties Ltd	8,297,485	53,635,764	8,297,485	24,676,910	8,694,760,
iJenga Ventures Ltd	10,452,211	12,152,181	10,452,211	6,664,104	7,152,,781
Immensity Holdings Ltd	21,425,859	18,528,851	21,425,859	13,945,215	17,500,811,
INFPAC Ltd	29,125,875	29,685,409	29,125,875	21,642,213	49,655,892
Jabez Properties	35,459,612	38,544,438	35,459,612	25,158,447	78,516,430
Kamhomes Investments Ltd	38,297,485	53,635,730	38,297,485	24,676,910	83,660,294
Karibu Homes	10,452,211	12,152,636	10,452,211	17,729,400	17,729,123
Karume Holdings Ltd	6,664,104	5,152,671	6,664,104	34,572,000	34,572,000
Kings Developers Ltd	13,945,215	17,500,811	13,945,215	11,329,318	41,329,318
Kzanaka Ltd	21,642,213	32,619,892	21,642,213	39,748,996	9,748,996
Laser Property Services Ltd	25,158,447	78,533,016	25,158,447	24,764,060	14,500,000
Leo Capital Holdings Ltd	24,676,910	23,694,760	24,676,910	83,690,294	27,729,000

Lordship Africa	6,664,104	7,638,956	6,664,104	7,152,617	14,572,000
Manrik Holdings Ltd	13,945,215	17,500,842	13,945,215	9,811,062	31,329,318
Meera Construction Ltd	21,642,213	8,419,892	21,642,213	9,019,892	9,748,996
Mlima Construction Company Ltd	25,158,447	8,016,430	25,158,447	28,533,016	10,452,211
MML Turner & Townsend	24,676,910	9,694,760	24,676,910	8,760,294	21,425,859
Mugumo Developments Ltd	6,664,104	7,156,387	6,664,104	7,152,638	29,125,875
Natureville Homes	13,945,215	17,500,811	13,234,015	12,811,062	35,459,612
Norcent Projects Ltd	21,642,213	19,419,892	21,642,213	49,655,419	38,297,485
Optiven Ltd	13,387,033	9,092,468	10,452,211	12,152,638	10,452,211
PDM (Kenya) Ltd	27,729,000	17,349,000	21,425,859	18,851,062	21,425,859
Pioneer Holdings (Africa) Ltd	344,572,000	34,572,000	29,125,875	29,609,892	29,125,875
Prissy Apartments Ltd	341,329,318	41,329,318	35,459,612	38,546,438	35,459,612
Prism Residential Ltd	379,748,996	29,748,996	38,297,485	53,635,864	38,297,485
Realux Holdings Ltd	524,500,000	24,500,000	10,452,211	12,152,638	10,452,211
Rozana Properties Ltd	277,729000	27,729,000	21,425,859	18,528,851	21,425,859
Sayani Investments Ltd	6,664,104	7,152,638	6,664,104	10,238,172	9,281,123
Sherry Blue Properties Ltd	13,945,215	17,500,811	13,945,215	12,782,191	8,201,133
Shreeji Development Ltd	21,642,213	9,655,419	21,642,213	11,192,272	2,373,922
Sigimo Entreprises Ltd	25,158,447	38,533,010	25,158,447	3,289,192	2,236,338
SJR Properties Ltd	24,676,910	83,694,294	24,676,910	6,489,382	4,385,682
SLOK Construction Ltd	6,664,104	7,152,638	6,664,104	5,289,212	2,299,282
Sohail Developments Ltd	13,945,215	17,500,811	13,945,215	4,489,209	21,208,289
Soma Properties	9,546,209	23,984,235	7,533,980	8,192,281	2,290,192
Superior Homes Kenya Ltd	13,945,215	17,500,811	13,945,215	7,090,106	13,945,215
14Trees Kenya Ltd	21,642,213	49,655,419	21,642,213	19,235,419	21,642,213
Tatu City Ltd	25,158,447	78,533,016	25,158,447	28,433,016	25,158,447
Tecnofin Kenya Ltd	24,676,910	23,674,760	24,676,910	83,694,760	24,676,910
The Combined Warehouses Ltd	13,945,215	17,500,831	13,945,215	13,200,811	13,945,215
The Epic Properties Ltd	21,642,213	49,655,419	21,642,213	49,655,419	21,642,213
The GoDown Arts Centre	25,158,447	78,533,016	25,158,447	38,567,430	25,158,447
Tilisi Developments Ltd	8,524,889	6,856,363	8,524,889	9,806,363	8,524,889
Trident Estates Ltd	10,526,536	10,538,832	10,526,536	8,062,832	10,526,536
TSG Realty Ltd	14,231,589	9,619,892	14,231,589	14,419,892	14,231,589
Two Rivers Development Ltd	16,287,123	8,085,480	16,287,123	18,583,082	16,287,123
Unity Homes Ltd	70,759,781	13,499,731	118,141,296	17,140,293	124,248,129
Username Investments Ltd	118,362,000	15,423,000	25,379,000	20,617,217	25,251,789
VAAL Real Estate	10,252,000	18,269,000	17,253.899	9,001,499	9,479,547
Vishwa Developers Ltd	227,721,781	8,732,205	15,968,686	8,746,000	12,685,000
Wood Products Kenya Ltd	11,363,000	14,170,000	21,452,523	12,992,661	27,909.,321

OVERDRAFT INTEREST RATE

COMPANY NAME	2016	2017	2018	2019	2020
Acorn Management Services Ltd	0.19	0.20	0.19	0.23	0.32
AHCOF Investments (Kenya) Ltd	0.23	0.33	0.23	0.34	0.37
Amazon Projects Ltd	0.28	0.32	0.29	0.43	0.27
Amboseli Court Ltd	0.31	0.34	0.28	0.34	0.23
AMS Properties Ltd	0.35	0.21	0.32	0.37	0.29
Bahati Ridge Development Ltd	0.42	0.32	0.28	0.19	0.31
Blueline Properties Ltd	0.26	0.27	0.33	0.21	0.23
Camelot Consultants Ltd	0.19	0.31	0.36	0.21	0.26
Century City Property Ltd	0.28	0.30	0.23	0.17	0.32
Cheriez Properties Ltd	0.21	0.18	0.27	0.23	0.43
Chigwell Holdings Ltd	0.31	0.24	0.34	0.35	0.24
Cytonn Real Estate	0.36	0.27	0.29	0.19	0.34
Coral Property International Ltd	0.21	0.30	0.43	0.21	0.23
Daykio Plantations Ltd	0.28	0.26	0.23	0.19	0.17
Dewbury Ltd	0.34	0.34	0.38	0.34	0.23
Dunhill Consulting Ltd	0.32	0.27	0.21	0.19	0.32
Elegant Properties Ltd	0.19	0.31	0.28	0.23	0.28
Elm Ridge Ltd	0.19	0.27	0.32	0.32	0.36
Endless Africa Ltd	0.23	0.25	0.28	0.23	0.32
Enkavilla Properties Ltd	0.27	0.28	0.29	0.38	0.22
Fairdeal Development & Infrastructure Ltd	0.31	0.31	0.33	0.19	0.17
Fedha (Management) Ltd	0.23	0.32	0.32	0.23	0.27
Golden Compass Ltd	0.34	0.38	0.37	0.27	0.34
Heri Homes Properties Ltd	0.23	0.31	0.31	0.21	0.34
HF Development and Investments Ltd	0.28	0.31	0.23	0.34	0.39
Home Afrika Ltd	0.34	0.27	0.35	0.28	0.33

House and Homes Ltd	0.39	0.28	0.28	0.33	0.27
Homescope Properties Ltd	0.34	0.29	0.31	0.34	0.31
iJenga Ventures Ltd	0.29	0.31	0.31	0.38	0.25
Immensity Holdings Ltd	0.4	0.36	0.29	0.41	0.33
INFPAC Ltd	0.26	0.37	0.32	0.27	0.27
Jabez Properties	0.41	0.39	0.38	0.21	0.34
Kamhomes Investments Ltd	0.24	0.31	0.31	0.45	0.21
Karibu Homes	0.28	0.29	0.28	0.43	0.28
Karume Holdings Ltd	0.31	0.27	0.38	0.34	0.33
Kings Developers Ltd	0.23	0.31	0.21	0.27	0.37
Kzanaka Ltd	0.38	0.18	0.29	0.34	0.24
Laser Property Services Ltd	0.32	0.21	0.26	0.36	0.36
Leo Capital Holdings Ltd	0.37	0.23	0.32	0.38	0.33
Lordship Africa	0.19	0.18	0.36	0.33	0.28
Manrik Holdings Ltd	0.23	0.21	0.36	0.34	0.32
Meera Construction Ltd	0.26	0.22	0.32	0.41	0.36
Mlima Construction Company Ltd	0.31	0.29	0.27	0.28	0.21
MML Turner & Townsend	0.23	0.34	0.34	0.22	0.33
Mugumo Developments Ltd	0.27	0.28	0.18	0.31	0.31
Natureville Homes	0.29	0.31	0.21	0.27	0.36
Norcent Projects Ltd	0.31	0.33	0.26	0.33	0.32
Optiven Ltd	0.21	0.17	0.36	0.39	0.24
PDM (Kenya) Ltd	0.34	0.23	0.31	0.19	0.38
Pioneer Holdings (Africa) Ltd	0.27	0.27	0.25	0.32	0.43
Prissy Apartments Ltd	0.32	0.37	0.33	0.42	0.39
Prism Residential Ltd	0.19	0.36	0.38	0.35	0.42
Realux Holdings Ltd	0.21	0.31	0.34	0.37	0.37
Rozana Properties Ltd	0.27	0.29	0.32	0.33	0.34

Sayani Investments Ltd	0.24	0.32	0.35	0.32	0.32
Sherry Blue Properties Ltd	0.29	0.19	0.26	0.38	0.28
Shreeji Development Ltd	0.34	0.32	0.29	0.21	0.32
Sigimo Entreprises Ltd	0.33	0.28	0.31	0.29	0.37
SJR Properties Ltd	0.38	0.36	0.33	0.26	0.34
SLOK Construction Ltd	0.21	0.33	0.37	0.32	0.27
Sohail Developments Ltd	0.28	0.34	0.42	0.27	0.21
Soma Properties	0.32	0.38	0.34	0.28	0.29
Superior Homes Kenya Ltd	0.29	0.26	0.37	0.23	0.32
14Trees Kenya Ltd	0.28	0.23	0.26	0.24	0.36
Tatu City Ltd	0.31	0.27	0.21	0.32	0.31
Tecnofin Kenya Ltd	0.28	0.24	0.29	0.31	0.21
The Combined Warehouses Ltd	0.27	0.31	0.32	0.29	0.27
The Epic Properties Ltd	0.31	0.33	0.36	0.35	0.33
The GoDown Arts Centre	0.33	0.29	0.31	0.33	0.43
Tilisi Developments Ltd	0.27	0.31	0.28	0.28	0.32
Trident Estates Ltd	0.29	0.27	0.24	0.31	0.36
TSG Realty Ltd	0.22	0.31	0.29	0.38	0.32
Two Rivers Development Ltd	0.25	0.33	0.40	0.45	0.43
Unity Homes Ltd	0.22	0.32	0.21	0.34	0.43
Username Investments Ltd	0.31	0.29	0.32	0.24	0.28
VAAL Real Estate	0.19	0.38	0.19	0.28	0.29
Vishwa Developers Ltd	0.32	0.23	0.33	0.37	0.34
Wood Products Kenya Ltd	0.22	0.21	0.38	0.23	0.35

FINANCIAL PERFORMANCE (ROA))

COMPANY NAME	2016	2017	2018	2019	2020
Acorn Management Services Ltd	0.0035	0.0010	0.0196	0.8035	0.0302
AHCOF Investments (Kenya) Ltd	0.0035	0.0021	0.2887	0.9059	0.9304
Amazon Projects Ltd	0.0031	0.4427	0.4216	1.1011	0.7613
Amboseli Court Ltd	0.0017	0.0315	-0.0729	0.9094	0.4767
AMS Properties Ltd	0.0074	0.0218	-0.7729	0.1404	0.4761
Bahati Ridge Development Ltd	0.0014	0.0108	-0.2729	0.0868	0.5127
Blueline Properties Ltd	0.0017	0.0598	-0.7729	0.5132	0.4127
Camelot Consultants Ltd	0.0017	0.0108	0.1165	0.4353	0.0051
Century City Property Ltd	0.0017	0.0108	0.0646	0.4706	0.0030
Cheriez Properties Ltd	0.0581	0.0066	0.1847	0.4490	0.0292
Chigwell Holdings Ltd	0.0081	0.0800	0.1301	0.3109	0.0153
Cytonn Real Estate	0.0581	0.0016	0.1301	0.2649	0.0153
Coral Property International Ltd	0.0481	0.1006	0.3101	0.1288	0.0126
Daykio Plantations Ltd	0.0751	0.8006	0.1301	0.1928	0.0153
Dewbury Ltd	0.0752	0.0106	0.6801	0.5442	0.0026
Dunhill Consulting Ltd	0.0075	0.0064	0.7148	0.9437	0.0954
Elegant Properties Ltd	0.1297	0.4115	0.9406	0.0959	0.0473
Elm Ridge Ltd	0.1747	0.0418	0.0794	0.4923	0.0271
Endless Africa Ltd	0.4647	0.0115	0.5806	0.2262	0.0349
Enkavilla Properties Ltd	0.2147	0.0115	0.5806	0.3501	0.0349
Fairdeal Development & Infrastructure Ltd	0.0017	0.0108	0.1206	0.2141	0.6239
Fedha (Management) Ltd	0.0177	0.4115	0.2476	0.5251	0.5868
Golden Compass Ltd	0.0027	0.4118	0.1341	0.2058	0.5098
Heri Homes Properties Ltd	0.0063	0.3873	0.2047	0.5706	0.1889
HF Development and Investments Ltd	0.0066	0.3823	0.6347	0.3479	0.9455
Home Afrika Ltd	0.0066	0.0063	0.8275	0.9447	0.3212
House and Homes Ltd	0.0066	0.3825	0.0536	0.6306	0.0441
Homescope Properties Ltd	0.0063	0.3673	0.7056	0.0945	0.0726
iJenga Ventures Ltd	0.0163	0.3873	-0.4524	0.4823	0.1458
Immensity Holdings Ltd	0.0063	0.3825	0.3511	0.1048	0.2528
INFPAC Ltd	0.0036	0.3045	-0.2804	0.1221	0.2689
Jabez Properties	0.0035	0.3040	0.2001	0.3169	0.2569
Kamhomes Investments Ltd	0.0032	0.4424	0.4487	0.3169	0.2754
Karibu Homes	0.0027	0.4118	0.2874	0.1096	0.2096
Karume Holdings Ltd	0.0017	0.3108	0.2874	8.0556	0.2496
Kings Developers Ltd	0.0017	0.5108	0.3733	0.6273	0.0203
Kzanaka Ltd	0.0247	0.5108	-0.4064	0.0906	0.0715
Laser Property Services Ltd	0.0047	0.4118	-1.7064	0.0704	0.0715

Leo Capital Holdings Ltd	0.0017	0.4108	-0.4064	8.058501	0.0715
Lordship Africa	0.0181	0.8006	-0.7064	0.0382	0.0715
Manrik Holdings Ltd	0.0581	0.1746	-1.7004	0.0096	0.0657
Meera Construction Ltd	0.0071	0.8746	-1.7064	0.9093	0.0015
Mlima Construction Company Ltd	0.0021	0.8746	0.1455	0.3353	0.0179
MML Turner & Townsend	0.0581	0.8046	0.0669	0.7066	0.0045
Mugumo Developments Ltd	0.0713	0.1746	0.0669	0.7016	0.0345
Natureville Homes	0.0071	0.8046	0.0646	0.6965	0.0345
Norcent Projects Ltd	0.0017	0.4108	0.6465	0.3769	0.0030
Optiven Ltd	0.0037	0.4108	0.0465	0.3865	0.0045
PDM (Kenya) Ltd	0.0037	0.4108	0.7469	0.3514	0.3345
Pioneer Holdings (Africa) Ltd	0.0074	0.5108	-0.7029	0.1268	0.5127
Prissy Apartments Ltd	0.0047	0.4118	-0.7729	0.0332	0.5127
Prism Residential Ltd	0.0017	0.4108	-0.7829	0.6286	0.4127
Realux Holdings Ltd	0.0017	0.4115	-0.229	0.5324	0.4767
Rozana Properties Ltd	0.0066	0.3873	-0.7729	0.0194	0.5127
Sayani Investments Ltd	0.0063	0.3825	-0.7729	0.4148	0.1527
Sherry Blue Properties Ltd	0.0060	0.3825	-0.7729	0.0102	0.4727
Shreeji Development Ltd	0.0066	0.3825	0.0769	0.3965	0.0030
Sigimo Entreprises Ltd	0.0060	0.3825	0.1069	0.6506	0.0345
SJR Properties Ltd	0.0066	0.3825	0.0469	0.6047	0.1030
SLOK Construction Ltd	0.0066	0.3825	0.0469	0.5588	0.0345
Sohail Developments Ltd	0.0035	0.3040	0.0649	0.2129	0.0345
Soma Properties	0.0035	0.3040	0.0469	0.2346	0.0345
Superior Homes Kenya Ltd	0.0031	0.4424	0.0469	0.2041	0.0745
14Trees Kenya Ltd	0.0017	0.4115	0.9211	0.1778	0.7013
Tatu City Ltd	0.0017	0.4115	0.2301	0.0928	0.0153
Tecnofin Kenya Ltd	0.0017	0.7615	0.1301	0.2635	0.0153
The Combined Warehouses Ltd	0.0014	0.4110	0.1301	0.1341	0.0123
The Epic Properties Ltd	0.0017	0.4115	0.9201	0.1048	0.0123
The GoDown Arts Centre	0.0017	0.5108	0.1301	0.1755	0.0123
Tilisi Developments Ltd	2.0075	0.8006	-0.1766	0.8935	1.0033
Trident Estates Ltd	0.0751	0.8006	-0.2017	0.0559	0.1484
TSG Realty Ltd	1.0071	0.8043	-0.4216	0.1211	0.7643
Two Rivers Development Ltd	0.0075	0.8006	-0.7729	0.9094	0.4761
Unity Homes Ltd	0.0075	0.8746	-0.1329	0.8044	0.4127
Username Investments Ltd	-0.1766	0.1235	-0.8239	0.6988	0.6151
VAAL Real Estate	-0.2017	0.1059	-0.7823	0.5933	0.4761
Vishwa Developers Ltd	-0.4336	0.1121	0.1155	0.3353	0.0051
Wood Products Kenya Ltd	-0.0729	0.9094	0.0469	0.4066	0.0030

APPENDIX II: DATA COLLECTION SHEETS

	2016	2017	2018	2019	2020
Financial performance (ROA))	3.9954	28.2889	-2.2824	46.1596	17.7411
Differentials in interest rates	-4.62352	71594.88	43.38154	-207.518	-0.34786
Foreign Direct Investments	3,226,292,679	1,409,971,673	1,239,634,963	1,271,103,615	1,255,131,942
Overdraft interest rate	.28	.31	.19	.41	.31