

EFFECTS OF MACROECONOMIC FUNDAMENTALS ON REAL ESTATE INVESTMENT TRUST SCHEME (REITS) RETURNS: THE KENYA EXPERIENCE

Dr. ULOGHOBUI Zakari Muhammed

Department of Banking and Finance, School of Financial Studies,

E-mail: zakarimuhammed2001@yahoo.com

(Phone: +2348063386660)

Ireghan Mohammed Mulktau

Department of Accountancy

Auchi Polytechnic, Auchi – Edo State

E-mail Address: m.iregha@gmail.com

GSM No: +2348052417114

Muhammed Adamu Obomeghie

Department of Statistics

School of Information Communication Technology

Auchi Polytechnic, Edo State

GSM No: 08037719420. E-mail: maoidg@yahoo.com

Corresponding Author E-mail: zakarimuhammed2001

Abstract

DOI: <https://doi.org/10.57233/gujed.v3i2.14>

This study examined the nexus between volatilities in macroeconomic variables and real Estate investment trust scheme (REITs) returns in Kenya within the period 2013-2022. The specific objectives of the study were to determine the relationship between credit to private sector; gross domestic product (GDP); inflation rate (IFR); volatility in interest rates (VIR); exchange rate fluctuation (EXRF); and money supply (MSUP) fluctuation; and stock returns of REITs in Kenya. To examine the cause-effect relationships between the dependent variable and independent variables, the study employed the panel fixed and random effect regression technique to analyse panel data set obtained from IdRatios Nigeria, compiled from the relevant statistical records including the selected stock exchange fact books and concerned firms' annual financial reports for the period. The findings reveal that; GDP growth (GDPG) and exchange rate (EXRT) had a significant positive effect; while credit to the private sector (CRPS, inflation rate (INFR), interest rate (INTR) and money supply (MSUPY) did not have a significant effect on REITS returns Kenya economy. The study concludes that, unlike in more developed markets, where interest rates play a crucial role in asset returns, other factors especially GDP growth rate and exchange rate had more influence in shaping REITs performance in Kenya as an emerging market. The study strongly recommends, among others, that the Government of Kenya and private policy-makers prioritize economic policies that promote sustainable economic growth as this indirectly supports the real estate and REITs markets in the country.

Keywords: Microeconomic, private sector, credit, interest, Kenya

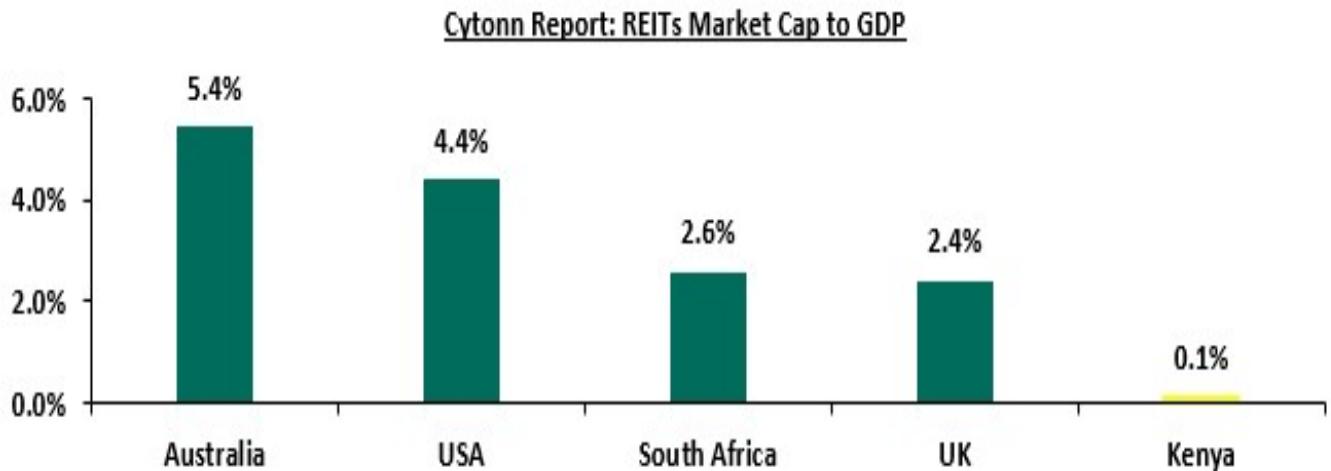
Introduction

The global community has witnessed numerous challenges in the transition process of countries, particularly in Sub-Saharan Africa - the area and regions of the continent of Africa that lie south of the Sahara and include Central Africa, East Africa, Southern Africa, and West Africa where in Kenya lies. Recently, anti-inflationary REITs commodities have become a popular investment option due to low market interest rates, continuous inflation, an improved investment environment and investment friendly laws and regulations. As noted by Xiaoyu (2022), real estate investment trust schemes (REITs) is an alternative to direct physical real estate investment. REITs are typically publicly listed on exchanges, so they are easier to buy and sell. Real estate investment trusts schemes (REITs) are companies that own, operate, or finance income-generating real estate across various property sectors even as they allow individuals to invest in a portfolio of real estate assets like apartments, office buildings, hospitals, and more, similar to how an investor would invest in stocks. By investing in a REIT, one benefits from the rental income generated by the properties without the burden of directly managing them. There are virtually two types of REITs viz: the **Mortgage REITs**: commonly referred to as mREITs and the **Equity REITs** also known as eREITs (Block, 2011). A third category is classified by Chaudhry, Bhargava and Weeks (2022) as **Hybrid REITs** which combines the investment strategies of equity REITs and mortgage REITs by investing in both properties and mortgages.

Xiaoyu (2022) notes that the United States (US) was the first country to introduce REITs products to the market in 1960. Since then, approximately 40 countries/regions have adopted the US-based REITs approach (National Association of Real Estate Investment Trusts, 2021). While one could make the case that firm-specific characteristics are typically unique in nature and can therefore be diversified within a portfolio framework, it is important to acknowledge the complexities of the relationship between firm-to-market returns and the influential role of macroeconomic variables capable of influencing direction of returns of REITs. Notably; Kenya became the third African nation to launch REITs regulations and adopt a regulatory framework promoting REITs as an investment vehicle, following in the footsteps of Ghana and Nigeria in 1994 and 2007, respectively.

However, Kenya despite being a relatively earlier entrant into the REITs market, its subsequent trajectory has been overshadowed by an underwhelming performance in comparison to countries such as South Africa. This is underscored by the fact that, Kenya currently has only four authorized REITs as opposed to South Africa which boasts of thirty-three (33) listed REITs, even as its REITs market capitalization to GDP remains low.

The dismal performance is attributable to factors such as: i) inadequate investor knowledge of the investment instrument, ii) lengthy approval procedures for REITs creation, iii) high minimum capital requirements for trustees, and, iv) minimum investment amounts set relatively high, among others, which continue to limit the performance of REITs in Kenya. The graph below compares Kenya's **REITs** market capitalization to GDP of other countries.



Source: World Bank, Kenya National Association of Listed REITs (2024)

Figure 1.1 : Comparison of Kenya's REITs market capitalization to GDP with selected countries

As at 31st, 2022, there were only two listed and authorized REITs in Kenya structured as closed-ended funds viz: Centum Investment and Olympia Capital Holdings

Globally, the World Bank (2024) reveals a total of 940 listed REITs with a combined equity market capitalization of approximately \$2.0 trillion (as of December 2023) are in operation around the world.

Given the interest they have generated in recent years, the interaction of REITs' risk-return dynamics and various macroeconomic fundamentals has attracted the attention of researchers,, hence this study.

Statement of the Problem

As an openly traded security, REITs experiences risk exposures inherent in equities such as interest rate risk, inflation and other macroeconomic fundamentals. A comprehensive analysis of numerous empirical studies conducted across various continents worldwide has revealed disparate outcomes pertaining to the factors that influence firm performance. Moreover, it is also unveiled that the majority of previous studies were conducted in the Asian continent, with particular focus on India, Malaysia, Indonesia and Pakistan with less attention to the Africa market. Yet, the nexus between macroeconomic risk factors and REITs has not been researched extensively in developing countries such as Kenya, largely because REITs are a recent phenomenon in these economies (Kodongo and Ojah, 2014). There is also a revealed gap in literature resulting from limitation in scope of eadeavour, inadequate variable employed in research and utilization of shorter time frames and smaller firm samples (Rahim, Nor, Ramli, and Marzuki, 2021); (Nor, Ramli, Marzuk, and Rahim, 2020); and (Listiani and Supramono, 2020; Nastiti, Atahau, and Supramono (2019), The objective of this study therefore is to evaluate the exposure of REITs to common macroeconomic fundamentals in the Kenyan market.

Objective of the Study

The main objective of this study was to examine the linkage between volatilities in macroeconomic fundamentals and REITs returns in Kenya with the specific objectives being to:

- ascertain the effect of credit to private sector,
- examine the linkage between gross domestic product (GDP) and returns of REITs;
- determine the nexus between inflation rate and returns of REITs;
- examine the nexus between volatility in interest rates and returns of REITs;
- determine the linkage between exchange rate fluctuation and returns of REITs; and
- evaluate the effect of money supply (MSUP) fluctuation on returns of REITs in Kenya
-

Review of Related Literature

Conceptual Review

Real estate investment trusts scheme (REITs)

Real estate investment trusts schemes (REITs) are companies that own and operate income generating real estate properties in different real estate sectors and, similar to mutual funds. REITs pool the capital of many investors who are able to participate in real estate investment without having to buy, own, and manage these properties. Many REITs are publicly owned and thus trade like stocks (Chaudhry, Bhargava and Weeks, 2022). As noted by Xiaoyu (2022), real estate investment trust scheme (REITs) is an alternative to direct physical real estate investment. REITs are typically publicly listed on exchanges, so they are easier to buy and sell.

REITs performance

REIT firm performance can be defined as an approach to determining the extent to which the financial goals such as increase in shareholder value, profitability and cash flows are achieved in a particular period of time (Bist, Mali, Sabita, Puri, Kayastha, and Bhattarai, 2017). Financial performance explains how a company generates high incomes, makes good profits, and effectively utilizes the assets (Ernayani, Robiyanto, and Sudjinan, 2017). It therefore, indicates how effectively companies put into use their resources in the generation of incomes. REITs performance measures the creditworthiness, liquidity, and cost-effectiveness of a company.

REIT returns

The total return of REITs is the sum of the income returned from dividends and the capital gains resulting from the appreciation of share prices. REITs exhibit a pricing structure that is similar to that of other assets, such as stocks and bonds. The value of a REITs' share price is influenced by various factors, with the main factor being the earnings generated from rental revenue and the price-earnings multiple determined by the marketplace. Hence, there exist several potential factors that can influence the behaviour of REITs returns. Predicting the returns of REITs is just as challenging as predicting the returns of stocks.

Macroeconomic fundamentals

According to Issa and Antwi (2017) macroeconomic fundamentals arise from the analysis of microeconomics, which examines the behaviour of an economy as a whole in terms of total output, income, employment levels, and the interconnections between different economic sectors. Macroeconomic variables are fundamental indicators utilized by economists to assess an economy, encompassing interest rates, inflation, and exchange rates among others.

Credit to private sector

The significance of credit in economic development is of utmost importance, particularly in the context of developing nations that are ensnared in a cycle of poverty commonly referred to as the vicious circle of poverty (Kiriga, Chacha, and Omany, 2020). The availability of credit enables firms to undertake investments that would have been unfeasible using their own capital.

Gross domestic product

Birz and Lott (2011) assert that knowledge about real GDP has an impact on stock markets. There is a lack of significant correlation in REITs markets (Bouchouicha, 2012). An unforeseen volatility undeniably impacts the REIT market. An increase in real estate production should result in a higher rate of innovation and industrial productivity. Organizations can take advantage of a thriving economy to increase their revenues while the business sector remains stable.

Inflation rate

To Bouchouicha and Ftiti (2012), there should be a significant correlation between inflation and asset prices even as price level shocks negatively impact asset prices. Furthermore, there exists a correlation between inflation and the REITs market over an extended period of time. Current theoretical literature posits that augmenting output, thereby increasing income levels in society, would generate demand through heightened consumption and investment. According to Blanchard (2010), the impact of investment and consumption has a positive effect on commodity prices

Interest rate

The value of commercial REITs, like other investment vehicles, is significantly influenced by interbank exchange rates and T-bills/bonds. The impact of interest rates on an individual's ability to buy items is extremely important. However, people mistakenly believe that the only significant factor in determining the value of real estate investment trusts (REITs) is the rates of investment. However, mortgage rates constitute a key factor that influences property value. Interest rates have a significant impact on the movement of capital, the demand and supply of capital, and the rates of return that investors expect from their investments (Van-Horne, 1989).

Exchange rate

The Exchange Rate is the ratio of the nominal effective exchange rate to a price deflator or index of costs. Bahruddin and Maish (2018) emphasise the importance of selecting the appropriate price index when calculating real exchange rates. This decision is crucial and depends on the specific policy objectives at hand. The exchange rate policies in developing countries such as Kenya are frequently delicate and contentious due to the necessary structural changes involved,

such as import reduction or non-oil export expansion, which inevitably result in a devaluation of the nominal exchange rate (Gunjan, 2013).

Money supply

The broad money supply is a measure of the quantity of money consisting of M1, plus savings and small-time deposits, overnight commercial bank deposits, plus non-institutional money market accounts (CBN, 2018). According to Omodero (2019), money supply is a monetary policy instrument that is extremely important to improve a nation's economic development. All M2 components are very liquid, and the non-cash components can very easily be converted into cash. Broad money includes notes and coins, with saving accounts and deposits also included. Treasury Bills and gilts can also be included. These securities are considered to be 'near money.' Broad money (M2) in economics is a measure of the money supply that involves more than just physical money, including currency and coins (also known as narrow money). A lot of factors determine money supply. Therefore, the apex bank normally targets the deposit money/commercial banks deposit balances by raising the cash reserve requirement to regulate the growth of money stock that may possibly generate inflation in the economy.

Theoretical Framework

This study is anchored on the Resource Based View theory. The resource-based view theory by Barney (1991) explains how businesses can adapt and strategically position themselves in a competitive environment. As asserted by Barney (2001), this theory attempts to explain how an organization utilizes its resources to gain a competitive advantage over the same players in the market. It states that an organization should combine and align its resources accordingly to be able to derive the most out of the available resources, and to be able to differentiate itself from the rest (Barney & Mackey, 2005). The central idea of the theory is that firms are unique in their package of resources, and they benefit from the same while exploiting the weaknesses of the other firms to achieve a competitive advantage.

The resource-based view (RBV) has an 'inside-out' view of a firm. This view is described as firm-specific and attempts to explain why firms' performances vary from one end to the other.. The resource-based view also evaluates what a firm possesses, the potential for value generation, and finally defines a strategy that allows a firm to capture the maximum value in a sustainable way.

Review of Empirical Studies

Wu and Wang (2024) employed the Bootstrap Fourier Granger Causality in quintiles test to re-evaluate the relationship between real estate investment trusts (REITs) returns and macroeconomic fundamentals in the United States. Their empirical findings demonstrate a significant positive relationship between GDP and REITs returns across all quintiles, except for the lowest 0.1 quintile. Additionally, they observed a significantly negative relationship between the stock price index and REITs returns across all quintiles. Moreover, the study reveals that the unemployment rate and effective interest rate exhibit an effective increase in REITs returns.

Fasanya, Oluwasegun, and Adekoya (2022) evaluated the predictability of REITs returns considering the role of macroeconomic risk predictors for three emerging African REITs markets, namely Ghana, Nigeria and South Africa. To account for the inherent statistical properties of persistence, endogeneity, autocorrelation and conditional heteroscedasticity, they

applied the Feasible Quasi Generalized Least Squares (FQGLS) estimator. In addition, the role of asymmetries was considered.

Their findings show the heterogeneous performance of the risk factors. All the risk predictors matter in predicting REITs returns in a non-linear fashion in Nigeria, while asymmetries appear to matter only for both interest rate and exchange rate in Ghana, and only interest rate in South Africa. These results suggest that the predictors are important forecast factors for the REITs market. They also found that the macroeconomic risk factors-based predictive model outperforms the traditional ARFIMA model in several cases in the countries, especially Nigeria.

Xiaoyu (2022) examined publicly traded equity REITs in China and the United States of America. Using literature review methodology and GARCH (1,1)-VaR model on secondary data obtained for the study, the findings reveal that the stock market is highly correlated with the REIT market as the United States stock market is found to have a more substantial impact on the REIT market as earlier reported by Hoesli and Reka (2015); and that REITs are a good hedge against some macroeconomic variables, including the fluctuation of 10-year government bonds yields, industrial production, CPI, and M2 money supply

Wanjiku, Bosire, and Matanda (2021) evaluated the macroeconomic effect on registered real estate investments trusts (REITs) financial performance in Kenya. Causal research design was used to describe the REITs financial performance. The study utilized secondary sources of data to obtain time series data on REITs financial performance computed for a four-year period. Using the regression model, results showed variance in the REITs financial performance can be accounted for by the independent variables (macroeconomic fundamentals). On the other hand, variance in the REITs financial performance can be accounted for by macroeconomic variables.

Research Gaps

The nexus between macroeconomic risk factors and REITs has not been researched extensively in developing countries such as Kenya, largely because REITs are a recent phenomenon in these economies (Kodongo and Ojah, 2014). There is also a gap in literature resulting from limitation in scope of endeavour, inadequate variable employed and utilization of shorter time frames and smaller firm samples.

Methodology

Research Design

Longitudinal research design was employed in this study since the study intended to determine the cause-effect relationship between the independent and dependent variables with a view to establishing a causal effect of macroeconomic fundamentals on the returns of listed REITs firms in Kenya. The study employed a panel data set which follows the population of interest over an extended time period since it is concerned with measuring change over time for the units of analysis within the population.

Population of the Study

The population of the study consists of all the five REITs listed on the floor of the Nairobi Stock Exchange (NSE) as at 31st December, 2022 from which the study drew data from 2013 to 2022.

Sample and Sampling Technique(s)

The study adopted the simple filtering technique to select its sample since REITs were included in the sample on certain selection criteria. These criteria were based on firms listed on the Nairobi Stock Exchange market consecutively from 2013 to 2022; with hope of access to their annual financial reports within the period, and not REIT firms operating subsidiaries in Kenya, and are not listed in the exchange. Newly listed REIT firms and delisted REIT schemes were also excluded from the study as only REITs schemes with all relevant data arising from continuous existence and trading were considered in the sample

Source/method of Data Collection

The secondary data source of data collection was employed since the data were sourced from IdRatios Nigeria which extracted them from relevant statistical records and selected stock exchange fact books and concerned firms' annual financial reports for the period as justified by Jayeola, Agbatogun and Akinrinlola (2017).

Model Specification

In order to test the hypotheses formulated in the study and to achieve the objectives of the research, the study adapted the model of Durer and Koten (2021). The model was stated as: $MVBV = f(HIR, IPC, IFR)$, where MVBV is market value to book value, HIR is housing interest rate, IPC is income per capita, IFR is inflation rate. Hence, when modified the model for this study becomes: $ASTR = f(CRPS, GDPG, INFR, INTR, EXRT, MSUPY)$ while the econometric estimation is expressed as:

$$ASTR_{it} = \beta_0 + \beta_1 CRPS_{it} + \beta_2 GDPG_{it} + \beta_3 INFR_{it} + \beta_4 INTR_{it} + \beta_5 EXRT_{it} + \beta_6 MSUPY_{it} + \mu_{it} \dots \dots \dots (1)$$

Where:

ASTR	=	Annual Stock Returns
CRPS	=	Credit to Private Sector
GDPG	=	GDP Growth
INFR	=	Inflation Rate
INTR	=	Interest Rate
EXRT	=	Exchange Rate
MSUPY	=	Money Supply
$\beta_1 - \beta_4$	=	Slope Coefficient
μ	=	Stochastic disturbance
i	=	i th firm
t	=	time period

Method of Data Analyses

The econometric technique adopted for this study is panel fixed and random effect regression technique. The rationale for its usage is based on the fact data collected for the study contained time and cross-sectional attributes that give room for studying the variables employed across time as well as across the sampled firms (cross-section). Moreso, panel data regression provides better results since it uses large observations and reduces the problem of degree of freedom (Muhammad, 2012).

Analysis and Discussion of Results

Table 4.1: Descriptive Statistics

Kenya	Mean	sd	min	max	N
Crps	31.573	3.087	26.400	36.700	24.000
Gdpg	4.538	1.769	-0.270	7.590	24.000
Infr	7.166	2.470	4.690	14.020	24.000
Intr	7.488	1.660	4.530	10.120	24.000
Exrt	94.182	4.889	85.860	100.980	24.000
Msupy	39.253	2.033	36.530	42.820	24.000

The credit to the private sector (CRPS) shows a mean at 31.573. Kenya's low average and minimal variability suggest limited credit access within the country which potentially constrains REIT growth. GDP growth (GDPG) trends reflect high economic conditions as Kenyan economy at average growth of 4.538. Kenya's GDP growth reveals high stability indicating that its steady growth may provide a relatively supportive backdrop for REITS

Inflation rates (INFR) also show considerable rate for Kenya at 7.166. This result indicates moderate inflation rate in the country indicating that it is still capable of encouraging investor's confidence given that the purchasing power is still far from being eroded, and hence potentially impacting REITs valuations positively.

For interest rates (INTR), the economy of Kenya was reporting high average at 7.488.. Kenya's relatively stable rate and suggests consistent monetary policies. This result is indicative of non-incentives for investment in the country. Exchange rates (EXRT) in Kenya portend an appreciable exchange rate position and suggest high currency stability, which could mean low currency risk for foreign investors. This position of exchange rates can discourage REIT returns, especially for investors who are sensitive to currency exchange stability. Finally, money supply (MSUPY) for Kenya had a mean of 39.253 which suggests tighter liquidity conditions with relatively low variability, indicating a stable liquidity environment. This position in money supply may impact economic activity level slowly and discourage the demand for real estate and affecting REITS performance negatively. Overall, the variations in macroeconomic conditions underscore the investment climate, with Kenya's economy present mixed conditions that may impact investor confidence.

Data Analyses:

Correlation Analysis Result

With non-normal distribution which the normality of data test result reveals, alternatives to the Pearson approach might be justified. The robustness of Spearman's versus Pearson's test has received relatively less empirical scrutiny. Fowler (1987) finds that Spearman's r is more powerful than Pearson's r across a range of non-normal bivariate distributions. The power benefit of Spearman's r may be the result of rank-ordering causing outliers to contract toward the centre of the distribution (Gauthier, 2001). Upon this understanding and since the data follow a non-normal distribution, Spearman Rank Correlation technique is employed to find out the possible relationship between the variables of interest presented in this study.

4.2.2 Regression Analyses

Specifically, to examine the cause-effect relationships between the dependent variables and independent variables as well as to test the formulated hypotheses, the study used a panel regression since the result reveals the presence of heteroscedasticity.

Table 4.2 Regression Results –

Variables	(1) OLS	(2) FE	(3) RE	(4) LSDV
Crps	1.507*** (0.000)	2.577*** (0.000)	1.602*** (0.000)	2.577*** (0.000)
Gdpg	-0.533 (0.704)	0.673*** (0.000)	-1.102 (0.419)	0.673*** (0.000)
Infr	-1.817 (0.405)	0.453 (0.001)**	-1.068 (0.612)	0.453 (0.001)**
Intr	-0.580 (0.790)	-0.148 (0.944)	-0.730 (0.725)	-0.148 (0.944)
Exrt	0.533 (0.213)	0.720 (0.001)**	0.729 (0.081)	0.720 (0.001)**
Msupy	-3.911*** (0.000)	0.729 (0.796)	-3.905*** (0.000)	0.729 (0.796)
Intercept	44.816 (0.556)	-350.506 (0.088)	15.243 (0.838)	-185.721 (0.066)
Observations	252	252	252	252
R ²	0.188	0.255		0.343
Adj R ²	0.169	0.169		0.267
F-stat	9.480	12.840		4.525
Year Dummy	No	No	No	Yes
Hetest	60.29{0.000}			
FE/RE		2.65{0.003}	11.38{0.000}	
VIF	7.20			
Hausman		8.67{0.013}		

Notes: p -values are in parentheses. *** $p < .01$, ** $p < .05$

Source: Stata output data, 2025

Panel Fixed and Random Effect Regression

As noted by Ajibolade and Sankay (2013), the fixed-effects model, often the primary technique for analyzing panel data, is used when it is essential to control for omitted variables that differ between cases but remain constant over time. This model leverages the changes in the variables over time to estimate the effects of the independent variables on the dependent variable. Conversely, the random-effects model is employed when some omitted variables are assumed to be constant over time but vary between cases, while others are fixed between cases but vary over time. In light of this, this study employs both panel fixed and random effect regression to control for the heterogeneity effect present in the pooled OLS regression models.

4.2.4. Least Square Dummy Variable (LSDV) Regression

Given the findings from the Hausman test, the study employs the Least Square Dummy Variable (LSDV) regression to account for unobserved variations across time. The LSDV model shows a high R-squared value of 0.343, indicating that approximately 34% of the systematic variation in the dependent variable is explained by the independent variables when considering time effects. The adjusted R-squared value of 0.343 supports the robustness of the LSDV model in capturing the variations in the dependent variable, further validating the choice of this model for policy recommendations and interpretation.

4.3 Test of Hypotheses

Following the above, the discussion of the Least Square Dummy Variable results became imperative in testing the study's hypotheses. Below is a specific analysis for each of the independent variables using the Least Square Dummy Variable (LSDV) regression.

Hypothesis 1:

Ho: Credit to private sector has no significant effect on the returns of REITS in Kenya

Hi: Credit to private sector has significant effect on the returns of REITS in Kenya

The results obtained from the Least Square Dummy Variable (LSDV) regression model revealed that credit to private sector has no significant positive effect on REITS returns during the period under study. This result implies that an increase in credit to the private sector did not significantly enhance REITS returns across in Kenya. Hence, the null hypothesis that credit to private sector has no significant effect on REITS returns is rejected while the alternative hypothesis which says that credit to private sector has significant effect on the returns of REITS in Sub-Saharan African countries is upheld.

Hypothesis 2:

Ho: GDP growth has no significant effect on the returns of REITS in Kenya

Hi: GDP growth has significant effect on the returns of REITS in Kenya

The results obtained from the LSDV regression model show that GDP growth has a significant positive effect on REITS returns. This result indicates that an increase in GDP growth significantly improves REITS returns in Kenya during the period under study. Consequently, the null hypothesis that GDP growth has no significant effect on REITS returns is rejected and the alternative hypothesis which says that GDP growth has significant effect on the returns of REITS in Sub-Saharan African countries is accepted.

Hypothesis 3:

Ho: Inflation rate has no significant effect on the returns of REITS in Kenya

Hi: Inflation rate has significant effect on the returns of REITS in Kenya.

The LSDV regression model reveals that inflation rate has a significant positive effect on REITS returns. This suggests that higher inflation rates are associated with increased REITS returns within the study period. Therefore, the null hypothesis that inflation rate has no significant effect on REITS returns is rejected and the alternative hypothesis which accepted which says inflation rate has significant effect on the returns of REITS in Kenya upheld.

Hypothesis 4:

Ho: Interest rate has no significant effect on the returns of REITS in Kenya

Hi: Interest rate has significant effect on the returns of REITS in Kenya.

The results from the LSDV regression model indicate that interest rate does not have a significant effect on REITS returns. This suggests that changes in interest rates do not significantly impact REITS returns during the study period. Therefore, the null hypothesis that interest rate has no significant effect on REITS returns is upheld.

Hypothesis 5:

Ho: Exchange rate has no significant effect on the returns of REITS in Kenya

Hi: Exchange rate has significant effect on the returns of REITS in Kenya

In line with the LSDV regression model, exchange rate has a significant positive effect on REITS returns. This indicates that an increase in the exchange rate positively influences REITS returns in Kenya. Thus, the null hypothesis that exchange rate has no significant effect on REITS returns is rejected in favour of the alternative hypothesis which states that exchange rate has significant effect on returns of REITS in Kenya.

Hypothesis 6:

Ho: Money supply has no significant effect on the returns of REITS in Kenya

Hi: Money supply has no significant effect on the returns of REITs in Kenya

The results from the LSDV regression model show that money supply does not have a significant effect on REITs returns. This implies that variations in money supply do not significantly influence REITs returns during the study period. Therefore, the null hypothesis that money supply has no significant effect on REITs returns is upheld

4.3.1 Robustness Check

The analysis of the adjusted R-squared values show that the baseline model holds Adj R-squared = 0.042 indicating that the variables under study are optimally predictive of REITs returns. This suggests that Kenya markets are moderately regulated even as it responds systematically to economic changes on relatively high level.

Table 4.3.1. Regression Results

Variables	(Kenya) LSDV	
Crps	-8.183 (0.356)	
Gdpg	5.770 (0.000)***	
Infr	-8.630 (0.304)	
Intr	2.456 (0.000)***	
Exrt	7.003 (0.069)	
Msupy	2.096 (0.888)	
Intercept	-477.281 (0.225)	
Observations	24	
R ²	0.334	
Adj R ²	0.042	
F-stat	1.146	
Year Dummy		Yes

Notes: *p-values are in parentheses.* *** $p < .01$, ** $p < .05$

Source: Stata output data, 2024

GDP Growth and the Returns of REITs

We find that in Kenya, GDP growth (GDPG) emerges as the most significant predictor of REITS returns with a positive coefficient of 5.770, significant at the 1% level ($p < 0.000$). This implies that economic growth in Kenya is a key driver of REITs returns, possibly due to an economic environment that supports higher returns on real estate investments during growth periods. This outcome aligns with the findings of Victor and Razali (2019), who observed that a healthy GDP growth rate often boosts investor confidence, thus stimulating the REITs market by attracting more capital into real estate assets. Similar conclusions were also reached by Alam (2022) and

Kırdök (2022) who found a comparable trend in North African markets where economic expansion positively influences real estate demand and profitability.

Credit to Private Sector and the Returns of REITs

The finding echoes Liu, Loudon, and Milunovich (2022) who found no significant link between private sector credit and REITs returns in a study that focused on more developed markets, where institutional factors might lessen credit's impact on REITs performance. However it sharply contradicts the findings of Alam (2022), by Kırdök (2022), Victor and Razali (2019) and Fasanya, Oluwasegun, and Adekoya (2022) who observe that credit flows to private businesses are a key driver of REITS performance by allowing enhanced funding for infrastructure and commercial real estate, which are integral to the REITs sector.

Inflation Rate and the Returns of REITs

The LSDV regression model revealed the finding that inflation rate did not show a significant impact on REITs returns. This result suggests that Kenya's specific economic factors might dampen the influence of this variable on REITS performance. This outcome contradicts complex role inflation plays in the real estate investment sector. In this context, rising inflation may drive up property values and rental incomes, thereby leading to increased REITS returns. This finding opposes the findings of findings by Kırdök (2022), Alam (2022) and Victor and Razali (2019) who insist that REITS are often regarded as inflation-protected investments, particularly in markets where inflation-induced property appreciation offsets the cost impacts.

Interest Rate and the Returns of REITS

Interest rates (INTR) reflect Kenya reporting a high level with average at 7.488, Kenya's relatively stable rate suggests consistent monetary policies, which may create a non-favorable borrowing environment, thus discouraging Investment. The finding that interest rate changes do not significantly impact REITS returns within the period under study presents an intriguing contrast to the conventional understanding that interest rates directly affect real estate investment performance. This lack of significant effect suggests that REITS in Kenya may be somewhat insulated from interest rate fluctuations or that other factors exert a stronger influence on REITS returns in Kenya. This outcome contrasts with studies like Victor and Razali (2019), who found that interest rates play a pivotal role in influencing REITS returns by affecting the cost of borrowing, which is essential for property acquisition and development while it corroborates Bouchouicha and Ftiti (2020) and Alam (2022).

Exchange Rate and the Returns of REITS

This study found a significant positive association between exchange rates and REITS returns in Kenya. This outcome aligns well with the broader trend observed in emerging markets. The significant positive effect of exchange rates on REITS returns suggests that as exchange rates rise, indicating a depreciation of local currency against foreign currencies, REITS in Kenya gain in value. This relationship implies that currency fluctuations may have a favorable impact on REITS, potentially because a weaker domestic currency can make local real estate assets more

attractive to foreign investors, enhancing returns. This finding aligns with insights by Kwakye and Haw (2020), who noted that currency depreciation could attract foreign investment into real estate sectors in emerging markets due to relatively lower asset prices as well as Alam (2022).

Money Supply and the Returns of REITS

The outcome of the analysis revealed that money supply did not record significant effect on returns of REITs in Kenya. This finding that money supply does not significantly impact REITS returns suggests that changes in liquidity within Kenya may not directly influence real estate investment performance. This aligns with observations made by Mansur, Cochran, and Odusami (2020), who noted that while money supply expansions could theoretically boost asset prices, the relationship with real estate markets may vary due to the sector's unique attributes, including its relatively illiquid nature. For REITS, which often depend on stable demand and investor confidence, changes in the broader money supply may not immediately translate into enhanced returns, particularly if the additional liquidity is absorbed by other sectors or fails to reach investment avenues effectively. According to Victor and Razali (2019) money supply growth can impact asset prices, yet its effect on real estate investments is often less direct. Unlike, even as Liu, Loudon, and Milunovich (2022) found similar patterns in their study, emphasizing that increased money supply does not guarantee higher REITS returns in markets where monetary policy transmission is weak or where REITS returns are driven more by specific real estate market.

Summary of Findings, Conclusion and Recommendations

Summary of Findings

This study investigated the impact of macroeconomic fundamentals on REITS returns, Kenya over the period from 2013 to 2022. The summary of findings was as follow:

- 1) **GDP growth (GDPG):** We find that in Kenya, GDP growth (GDPG) emerges as the most significant predictor of REITS returns with a positive coefficient of 5.770, significant at the 1% level ($p < 0.000$). This implies that economic growth in Kenya is a key driver of REITS returns, possibly due to an economic environment that supports higher returns on real estate investments during growth periods
- 2) **Credit to private sector:** The findings found no significant link between private sector credit and REITS returns in Kenya
- 3) **Inflation rate:** Inflation rate did not show a significant impact on REITS returns.
- 4) **Interest rate:** Interest rate changes did not significantly affect REITS returns in Kenya within the period under study
- 5) **Exchange rates:** This study found a significant positive association between exchange rates and REITS returns in Kenya.
- 6) **Money supply:** Supply did not record significant effect on returns of REITS in Kenya within the period of study

Conclusion

This study addressed the crucial issue of how macroeconomic fundamentals influence real estate investment trust scheme (REITs) returns in Kenya. The main problem lies in the unpredictable nature of REITs returns, which are subject to fluctuations in the macroeconomic environment, including GDP growth

From the study, there was a nuanced relationship between macroeconomic variables and REITs returns. For instance, GDP growth showed significant positive effects on REITs returns, suggesting that a growing economy can enhance the performance of REITs investments. Exchange rate was also positively associated with REITs returns, indicating that currency fluctuations may have a favourable impact on REITs, potentially because a weaker domestic currency can make local real estate assets more attractive to foreign investors, enhancing returns.

On the other hand, credit to private sector, inflation rate, interest rate, and money supply did not show significant effects on REITs returns, implying that these factors may not directly influence the REITs market in Kenya. The study concluded that, unlike in more developed markets, where interest rates play a crucial role in asset returns, other factors especially GDP growth rate and exchange rate had more influence in shaping REITs performance in Kenya as an emerging market.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Given that private sector credit positively influences REITS performance in South Africa, the Government and private sector policymakers are encouraged to create frameworks that increase credit flow to real estate sector. With increased credit availability, there is the tendency for the country (South Africa) providing a more conducive environment for real estate investment, as firms will access much more capital that is readily easily.
2. Findings from GDP growth revealed that Kenya was leading at an average growth of 4.538, followed by Nigeria at 2.800. It is therefore recommended that both the Government of Kenya and private policymakers prioritize economic policies that promote sustainable economic growth as this indirectly supports the real estate and REITs markets.
3. Findings from Inflation rates (INFR) showed considerable price stability in Kenya. With insight, the government of Kenya should dedicate its intellectual energy towards reducing and consolidating its inflation rate to be more favorable to REITs positive REITs performance in the country.
4. Findings in this area of interest rate indicated that Kenya had a relatively stable rate with consistent monetary policies. It is therefore recommended that policymakers and

regulators should aim for stable interest rate policies that avoid sharp fluctuations that might impact investor sentiment.

5. Results from exchange rates hold that Kenya has relatively moderate rate level which implies a moderately depreciated currency, a situation that suggests moderate currency volatility which with controllable currency risk for foreign investors. This level of exchange rates can influence REIT returns, especially for investors who are sensitive to currency fluctuations. In the light of this, corporate managers should monitor currency trends closely, especially for REITs exposed to foreign investment flows.
6. Money supply effect on REITs is average level in Kenya with a a relatively unstable liquidity environment. Kenya has a position with minimal fluctuations which suggests tighter liquidity conditions. Kenya's economies present mixed conditions that may impact investor confidence. Thus, considering the insignificant impact of money supply on REITs returns in Kenya, corporate managers and investors may not need to prioritize money supply fluctuation whendevelopingREITs strategies but be aware of broader liquidity conditions in their respective market even as Governments should focus on other macroeconomic indicators with more direct impacts on REITs returns, such as GDP growth and exchange rate fluctuations.

Contribution to Knowledge

This study makes several contributions to knowledge, both in the context of Kenya's REITs market and in the broader field of real estate investment finance from the perspectives of: employing a longer observation period of 10 years and variable enrichment by incorporating uncommon but relevant variables such as money supply as well as credit to private sector as determinants of REITs returns in an emerging market like Kenya.

References

- Ajibolade, S. O. and Sankay, O. C. (2013). Working capital management and financing decision: Synergetic effect on corporate profitability, *International Journal of Management, Economics and Social Sciences (IJMESS)*
- Barney, J. B. (2001). Strategic factor markets: Expectations, luck, and business strategy. *Management Science Journal*, 32(10), 1231-1241.
- Birz, G. and Lott J.R. (2010). The effect of macroeconomic news on stock returns: New evidence from newspaper coverage. *Journal of Banking and Finance*, 11 (35) 2791-2800
- Block, R. L. (2011). Investing in REITs, Real estate investment trusts, *Journal of Economic Development*, 9 (141).

- Bouchouicha, Rand Ftiti, Z. (2020). Real estate markets and the macroeconomy: a dynamic coherence framework, *Economic Modelling*, 29, (5), 1820-1829
- Chaudhry, M. K., Bhargava V. and Weeks, H.S. (2022). Impact of economic forces and fundamental variables on REIT returns, *Applied Economics* <https://doi.org/10.1080/00036846.2022.2059438>
- Durer, S., and Koten, A. B. (2021). The effect of macroeconomic variables on the stock exchange performance of real estate investment trusts: panel regression analysis. *Press Academia Procedia*, 13(1), 36-41.
- Fasanya, I. O., Oluwasegun, B., and Adekoya, B. (2022). Macroeconomic risk factors and REITs returns predictability in 2 African markets: evidence from a new approach
- Issah, M. and Antwi, S. (2017). Role of macroeconomic variables on firms' performance: Evidence from the UK: *Financial Economics Research*, ISSN: (Online) Journal homepage: , 5 (1405581), www.tandfonline.com/journals/oaef20 retrieved 02/09/2023)
- Jayeola, O., Agbatogun, T., and Akinrinlola, T. (2017). Audit quality and earnings management among Nigerian listed deposit money banks. *International Journal of Accounting Research*, 5(2), 1-5.
- Kenya National Association of Listed REITS (2024). Annual report on REITs.
- Kodongo, O. and Ojah, K. (2014). Conditional pricing of currency risk in Africa's equity markets. *Emerging Markets. Review*, 21, 133–155.
- Listiani, N. and Supramono, S. (2020). Sustainable growth rate: between fixed asset growth and firm value. *Management and Economics Review*, 5(1), 147-159.
- Liu, J. and Loudon, G. and Milunovich, G. (2012). Linkages between international REITs: the role of economic factors, *Journal of Property Investment and Finance*, 30(5), 473-492.
- Mansur, I., Cochran, S. J. and Odusami, B. (2020). The determinants of conditional skewness in REIT returns, *Journal of Real Estate Portfolio Management*, 26(1), 9-26.
- Kenya Capital Markets Authority (2024). Deepening the REITs Market in Kenya
- Nor, F. M., Ramli, N. A., Marzuki, A., and Rahim, N. (2019). Corporate sustainable growth rate: The potential impact of COVID-19 on Malaysian companies. *The Journal of Muamalat and Islamic Finance Research*, 7(83), 25-38.
- Omodero, C. O. (2019). Effect of corruption on foreign direct investment inflows in Nigeria. *Studia Universitatis Economics Series*, 29, 54-66.

- Rahim, N., Nor, F. M., Ramli, N. A., and Marzuki, A. (2019). Determinants of sustainable growth rate and share price performance: the mediating effect of sustainable growth rate. *In e-Proceedings*, 190. Volos: University of Thessaly.
- Van-Horn, J. (1989), *Fundamentals of Financial Management*, 7th Edition, New York: Prentice Hall
- Victor, E.S. and Razali M. N. (2019B). Identification of macroeconomic factors on excessive returns: A literature review. *Planning Malaysia Journal*, 17.19 (597)
- World Bank (2024). *Global REITs reports*, 9(11).
- Xiaoyu, H. (2022). Exploring how macroeconomic factors affect REITs and evaluating its downside risk– empirical evidence from China and the US, *Junior Management Science* 7(4), 874-898