ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 12, Issue, 12, pp.15235-15243, December, 2020

DOI: https://doi.org/10.24941/ijcr.40354.12.2020

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

EFFECT OF FOREIGN INFLOWS ON REAL ESTATE INVESTMENT IN KENYA

Changaya Robinson Kweyu and *Olanrewaju Isola Fatoki

KCA University, Kenya

ARTICLE INFO

Article History:
Received 30th September, 2020
Received in revised form
27th October, 2020
Accepted 25th November, 2020
Published online 30th December, 2020

Key Words:
Foreign inflows, Real Estate Development, Diaspora Remittance, Portfolio Investment.

ABSTRACT

Foreign inflows contribute to the growth and development of countries. The financial sector plays intermediary roles between savings and investment in various economic units which spans across the selection investment projects and the final users of financial resources. Real estate investment performs a vital role in the economy of Kenya. Over the years, Kenya has experienced increased investments in the real estate sector which is attributed to the quest of owning houses by Kenyans. This study examined the effect of foreign inflow on real estate investment in Kenya. Specifically, it assessed the effect of diaspora remittance, foreign direct investments and portfolio management on real estate investment in Kenya. The study further evaluated the moderating effect of financial development on the relationship between foreign inflows and real estate investment in Kenya. The causal research design was used in the study. Mainly, the Autoregressive Distributed Lag bounds test and the Dynamic Ordinary Least Squares methods were employed. The findings revealed that Foreign Direct Investment and Portfolio Investment have significant negative effect on Real Estate investment in Kenya in the short run. Also, the interaction between Financial Development and Foreign Direct Investment was weakly significant. The study concluded that foreign inflows determine Real Estate Investment only in the short run in Kenya. In the long-run, their effects on Real Estate Investment wanes. The study also concludes that the moderating effect of Financial Development on the relationship between Foreign Inflows and Real Estate Investment in Kenya is feasible only through the Foreign Direct Investment channel. Therefore, the study recommends that the Government of Kenya looks inward for alternative funding options such as mortgage financing to achieve growth in the real estate sector. The foreign inflows have shown to influence real estate investment only in the short run.

Citation: ***Changaya Robinson Kweyu and Olanrewaju Isola Fatoki.* 2020.** "Effect of foreign inflows on real estate investment in kenya", *International Journal of Current Research*, 12, (12), 15235-15243.

INTRODUCTION

Globally, the real estate sector growth is generally recognized as a key aspect of economic growth and development of countries (Hamouri, 2020). In most countries, and predominantly emerging economies, a large proportion of the expenditures of household are linked to housing which attracts a significant part of lifetime income. It is generally the biggest asset held by households (Pisit, 2014). The global urban population growth was 1.93 percent in 2018, which is significantly high as compared to the overall population growth of 1.1 percent globally (International Finance Corporation, 2020). The high demand for real estate globally stems from the increasing urban population growth. The real estate sector in Africa is characterized by a large demand with a notably drastic under supply in formal housing. Shortage in the real estate sector, that is housing supply leads to increases in slums, thereby resulting to social problems such as poor sanitation, overcrowding as well as increased crime rates. Beyond these social consequences, shortages in the real estate sector are associated with economic consequences such as decreasing participation in labor activities as well as decreased productivity in the formal sector. Ugherughe and Jisike (2019) indicated that one-third of the remittances to Nigeria were utilized in investments in real estate sector. The migrants housing investment is positively linked to economic growth. A large number of diaspora members from Nigeria had existing property and real estate investment which is mostly managed by family networks informally (Commonwealth Diaspora Investor Survey, 2018a). Amongst diaspora members from Ghana interested in investing in Ghana, 39% of them favour investment in property and real estate industry (39%) (Commonwealth Diaspora Investor Survey, 2018b). The real estate sector in East Africa is booming however largely untapped (Amondi, 2016). Demand for secure and affordable housing in Rwanda is on the increase due to the ever growing urban population which is estimated annually to be 5.75 percent, that is more than double that of rate the country's overall growth in population.

***Corresponding author: Olanrewaju Isola Fatoki,**
KCA University, Kenya.

The housing market in Rwanda is largely untapped (International Finance Corporation, 2020). In East Africa, the economy of Kenya stands as one of the most developed with a booming real estate sector. KIM (2018) indicated that in the vision 2030 of Kenya, over 80% of the population of Kenya is estimated to migrate from rural areas to urban areas, implying that real estate demand will be on the increase in the urban centres. The population of slum dwellers currently is one third of that of the urban dwellers. The real estate industry in Kenya must therefore be revisited and supported as it will have to grow at a more increased rate as it currently does. Kenya's real estate industry has been experiencing a boom in the 2000s where the property market was responding to the ever-increasing demand of the sector. The high housing demand has been linked to high-net-worth investors venturing into investments in shopping malls, hotels and office complexes (Amondi, 2016). Additionally, the expenditure of government towards construction works which include expansion of airports, population growth, rapid urbanization as well as middle class expansion collectively led to the increasing demand (Knight, 2014). Cytonn Investment on Real Estate documented that the highest growth recorded in the construction industry was 14.1% which was higher than those of agriculture and financial services of 7.1% and 10.1% respectively.

The residents in Kenya largely rent properties unlike the case in other neighboring countries which relatively have a balance in renting and buying interests. In Kenya, 29% of internet searches on real estate are looking to buy whereas 71 percent of the searches are towards renting properties. In Kenya, recently both rental prices and mortgage financing have witnessed increased rates and stiffer regulations respectively (Reubenson, 2014). Currently, Kenya's demand for housing supersedes that of its supply. Ministry of land and housing survey (2017), the country is faced with an annual demand for housing of 200,000 units and a corresponding 30,000 units supply which is an undersupply. Foreign inflows are regarded as funds and investments emanating from other countries in a country (home country). Foreign inflows include diaspora remittance, foreign direct investment and portfolio investments. Diaspora remittances are regarded as funds which are sent by emigrant to their home country where these funds transfers across international borders contribute to the improvement of the economies of the recipient countries (Hamouri, 2020). Remittance therefore is a source of cash inflows which extensively increases the national income of the recipient country (Muiriri, 2015).

Diaspora remittance is the transfer of money to a home country by a foreign worker. The concept of remittances embraces both monetary and non-monetary flows rather than just the monetary aspect (Jr-Tsung, Yu-Ning & Kuang-Ta, 2015). Diaspora remittance is a vital aspect of any economy where when adequately used can significantly enhance socioeconomic development in a country. In addition to direct effects of diaspora remittance, there exists large multiplier effect in terms of jobs as well as economic activity (Bah, Faye & Geh 2018). Migration contributes to welfare gains for migrants that is, whether internal or international migration despite the latter exceeding the former latter in aspects of associated benefits related to the two. Over the recent past, these inflows have surge as they make up a large source of foreign income as compared to other financial flows.

World Bank (2010) reported remittances of developing nations at $334 billion. Remittances flow to developing countries has been resilient despite the global financial economic crisis which affected private capital flows, as it was recorded in 2011 at 8%. Despite remittances being a show of attachment to the country of origin, remittances of the diasporas often stand as a channel of enhancing growth in the economy. As indicated by Ikechi and Anayochukwu, remittances by migrants have impacted positively on the growth of the economy, with however varying degrees. On the other hand, foreign direct investment (FDI) into the country is of key importance. Foreign direct investment refers to an investment where the investor has controlling ownership in a business in one country by an entity based in another country. World Bank (2016) on doing business report indicated that Kenya in a move to enhance FDI inflow have simplified the procedures relating to business establishments, acquisition of license acquisition, enhanced accessibility to credit as well as encouraged public private partnership. Foreign direct investment is important to a country as it provides capital for the long-term (Pisit, 2014). A portfolio investment is regarded as the ownership of a bond, stock or any financial assets which is expected to earn a return over a period of time (Suley & Moranga, 2020). It notably entails hands-of or passive assets ownership as against direct investment that usually involves active management role. Portfolio investment are passive investments which are not based on active control or management of the issuing company (Ezeanyeji & Ifeako, 2019). The foreign investors are characterized by relatively short-term interest in the passive investments' control or ownership but rather interest in just the profit aspect of it. Equity investments in terms of international transactions where the owner holds below 10 percent of the shares of firms are categorized as portfolio investments (World Bank, 2014). Financial development influences growth in the economy through improvements in investment efficiency through selection of projects growth in entrepreneurship as well as innovations (Mahedi, 2014). The financial intermediation role of financial institutions allows them to pool the risks associated with liquidity of depositors and invest funds into more productive and illiquid projects. The financial sector plays intermediary roles between savings and investment in various economic units which spans across the selection investment projects and the final users of financial resources in line with their respective credit worthiness while monitoring the utilization of these resources (Ugherughe & Jisike, 2019).

Statement of the Problem: The growth and development of the real estate sector of Kenya has been hampered by various issues which span from finances as well as failure of the financial system (Cytonn, 2019). Despite the national account of Kenya indicating that the real estate sector contribution to the country's gross domestic product (GDP) stood at 10.5% in the year 2000 which grew to 12.6% in the year 2012 and subsequently 13.8% in the year 2016 (Cytonn, 2019). However, this growth fluctuated in 2017 and 2018 where it stood at 14.1% and 13.7% respectively (Kenya National Bureau of Statistics, 2019). Over the years, Kenya has experienced increase in investments in the real estate sector which attributed to the quest of owning houses by Kenyans. This is further informed by upsurge in the demand for residential homes and rentals as a result of migration from the rural to urban areas and also office space demand due to increases in the establishments of businesses (small and medium enterprises). Real estate investment performs a vital role in the economy of Kenya. The real estate sector is significant in the provision of offering of shelter to households, employment opportunities, poverty alleviation, enhancing income distribution (Juma, 2014). Over the previous decade, the real estate sector of Kenya has been very resilient. The boom in the real estate sector survived the 2008 global financial crisis as well as post-election violence which saw various sectors of the Kenyan economy crippled. Growth in remittances has reportedly coincided with the growth of Kenya's real estate sector. Kiptoo (2013) indicated that inflows of remittance positively affected the rate of domestic savings. Juma (2014) further documented a significant positive relationship between growth in Gross Domestic Product and diaspora remittances; where it was concluded that remittances affect real estate investment growth. There is an indicator that a significant portion of the remittances are channeled to the real estate sector, thereby contributing to the growth of the sector. However, despite the linkages between remittance and real estate growth, it is largely unclear if foreign inflows contribute significantly to real estate investment in Kenya; thus, the focus of this study.

The major challenges encountered in Kenya's real estate sector stems from the rising population demanding for more housing as well as financing (spanning from the development stage as well as end user finance) (Suley & Moranga, 2020). The real estate sector in Kenya as it is in majority of African countries is characterized by increasingly high demand and a corresponding undersupply of formal housing. Due to the limited financing options where only two real estate related financial institutions exists (Housing Finance Corporation of Kenya and Savings and Loans (S & L)), the real estate industry in Kenya has been characterized by fairly rigid financing conditions (Arvanitis, 2013). In a move to address the fundamental issue of affordable housing, the Government of Kenya has contributed to investment in the real estate industry through policies as well as infrastructure development (Homes Expo Kenya, 2012). Despite the commitment of the Government of Kenya towards real estate investment and growth, the sector remains largely untapped which is evidenced by significantly higher demand than supply of housing in the country. Few studies have been conducted on remittance and real estate growth which include Cherono (2013); Pisit (2014); Amondi (2016), Mungai (2016); Suley and Moranga (2020). However, the studies are characterized by various research gaps as some were based on other countries while most of the studies largely isolated other key aspect of remittance such as foreign direct investment and portfolio investment. Additionally, the moderating effect of financial development on the relationship between remittance and real estate growth which is one of the objectives of this study was ignored by previous studies. It is against this backdrop that the current study aims at establishing the effect of foreign inflows on real estate investment in Kenya. Unlike previous studies which largely focused on economic growth, the current study will be based on real estate investment which is a narrow but key aspect of economic growth of a country.

General Objective: The general objective of the study was to investigate the effect of foreign inflows on real estate investment in Kenya. The specific objectives of this study were:

- To examine the effect of diaspora remittance on real estate investment in Kenya
- To establish the effect of foreign direct investment on real estate investment in Kenya
- To investigate the effect of portfolio investment on real estate investment in Kenya
- To assess the moderating effect of financial development on the relationship between foreign inflows and real estate investment in Kenya

Literature Review: The current section of the study contains the review of theoretical as well empirical literature. Various theoretical underpinnings and empirical works relating to the relationship between remittance and real estate investment were reviewed.

Theoretical Review: This study was guided by four theories namely; Pure Altruism Theory, Pure Self Interest Theory, Portfolio Theory and Financial Intermediation Theory. *Pure Altruism Theory* was propounded by Comte in 1973. The theory relates to the attitude and ethical way which is concerned with people's happiness. The altruism drive stands as one of the key motives for remittance by migrants. The Theory holds the view that remittances by migrants are informed by their concerns about the welfare of their family members at home (Hagen-Zanker & Siegel, 2007). In this theory, the utility of the migrant emanates from his family back home. The satisfaction of the migrant stems from the welfare of his family back home (OECD, 2006). The implication of this assertion is that the migrant remains motivated towards continuous remittance of funds when there is unfavorable condition to his family. This model views remittances as "compensatory transfers" as they increase in times where the home country of the migrant is facing adverse economic conditions which can be financial crisis or droughts (Chami *et al*., 2013).

Pure Self Interest Theory was advanced by Lucas and Stark (1985). The theory Self-interest (selfishness) is conversely the opposite of altruism, that is, selflessness. This theory is hinged on the view that remittance is not always countercyclical as in the case with Altruism. Instances exist where the quantity of remittance decreasing due to poor economic conditions of the home country. In this scenario, an underlying inverse relationship exists between quantity of remittance and economic conditions in the recipient country (Brown, 2006). The theory holds the view that the self-interest serves as another motive for remittances to their home country. Based on this preposition, migrants remit money to home country for purposes of investing or inheriting assets as well as for to return back home with some prestige. In periods where the home country is characterized by unfavourable economic conditions, less remittance is received from migrants as they believe such situations will adversely impact on both inheriTable and investible assets. Remittances therefore in this case serve as self-interest (insurance) motive. *The Portfolio theory* was introduced by Markowitz (1952). The model theory encompasses alongside the degree of risk for a certain return and not just the expected return. The Theory holds the notion that the investment behavior of an individual is important not just in the context of individual investment but also in when looking at portfolio composition. A portfolio's risk takes into consideration the risk and return of each investment and the correlation of the investment with the other investments therein the portfolio (Bodie, 2005). *Financial Intermediation Theory* was developed Diamond (1984). This theory is hinged on the notion that financial intermediaries play a role of reduction of costs which relate to transactions and information asymmetry. The financial systems perform a role of credit expansion to the various sectors of the economy where such credit is utilized for various purposes spanning from investment and consumption. The financial sector carries out important roles that lead to the emergence of specialized financial commodities (Scholtens & van Wensveen, 2003). Andries (2009) documented that financial intermediaries therefore are established due to the existing imperfections inherent in the market. Notably, if the market was perfect market, then financial intermediaries wouldn't come to existence. Financial development and real estate nexus is therefore supported by financial intermediation theory. Banking sector development entails efficient allocation of credit facilities which in turn contributes to real estate investment. Via financial development, financial institutions perform a key role in promoting growth of the economy through redirecting of funds towards innovative projects (Bah *et al*., 2018).

Empirical Review: Regardless of the notion that African nations had substantial proportion of their skilled force lost through the "brain drain" or emigration, which is largely linked to lack of economic opportunities as well as conflicts among other attributes, African nations have however benefitted from remittances by these emigrants through economic growth in the region. Over the decade, in 2010, global flows of remittance flows stood at above US$440 billion. With respect to this volume of remittances, US$325 billion is attributed to developing nations, thereby amounting to 73.9% which is a high proportion of total global remittances (World Bank, 2011). Various researchers have pointed that in the case of many developing nations, migrant remittances have positive influences on the balance of payments and economic growth. The consumption level of households is increased by remittance by diasporas, which translates to substantial multiplier effects due to the notion that these funds are to be spent on food produced locally. Hamouri (2020) evaluated the effects of remittances on Jordanian real estate market. The study results revealed that remittances positively impact on Jordanian real-estate market with recommendation that guidelines and policies be formulated towards remittances in Jordan so that it can be invested in long term developmental investments. was not considered.

Albulescu (2015) undertook a study which sought to determine whether foreign direct and portfolio investments impact on economic growth in the long term in Western and Central Europe. The study tested the effect of FDI and FPI on the long-term economic growth for Central and Eastern European (CEE) countries which was based on a panel regression analysis. GMM approach was used and various control variables were included such as interest rate, unemployment rate, inflation, money supply, exchange rate, level of education as well as primary energy consumption. The research focused on the period analyzed 2005 to 2012 while focusing on thirteen (13) CEE countries. The research documented that both portfolio and direct investments had influences on economic growth in the long-term. The findings further imply that incentive packages should be oriented toward the two types of investments which are foreign direct and portfolio investments. Mungai (2016) investigated how financing options affect real estate growth in Kenya a case of Nairobi Metropolitan. The study put forward it is challenging funding big real estate projects based on personal savings alone. As such, the need for the use of other sources of finance arises such as mortgage from financial institutions such as mortgage institutions, commercial banks or venture capital and equity. Primary data was used as sourced from registered developers in Nairobi Metropolis, Kenya. A sample size of eighty-one (81) was used based on a population of hundred (100) registered developers with Kenya Property Developers Association. The study documented that portfolio investment (equity financing) had significantly affect the real estate growth in Nairobi Metropolitan, Kenya. The study notably, apart from using primary data, isolated financial development and its moderating effect on the associations between portfolio investment and real estate growth in Kenya.

The accumulation of financial assets rather than non-financial assets at a more rapid rate is regarded as financial development (Puatwoe & Piabuo, 2017). Financial development comes about when financial intermediaries, financial markets as well as financial instruments decrease the costs of transactions, cost of contract execution, costs of acquiring information thereby performing a more efficient financial function without necessarily eliminating them (Yıldırım, Özdemir & Doğan, 2013). Adnan (2012) indicates that financial development relates to the factors, institutions and policies which bring about efficient intermediation as well as effective financial markets. Financial development influences growth in the economy through improvements in investment efficiency through selection of projects growth in entrepreneurship as well as innovations (Mahedi, 2014). The financial intermediation role of financial institutions allows them to pool the risks associated with liquidity of depositors and invest funds into more productive and illiquid projects. The financial sector plays intermediary roles between savings and investment in various economic units which spans across the selection investment projects and the final users of financial resources in line with their respective credit worthiness while monitoring the utilization of these resources (Ugherughe & Jisike, 2019).

It can be concluded that based on the studies reviewed, real estate investment in the Kenya is largely driven by remittances among other macroeconomic variables. However, previous studies are characterized by various research gaps as some were based on other countries while most of the studies largely isolated other key aspect of foreign inflows such as foreign direct investment and portfolio investment. Additionally, the moderating effect of financial development on the relationship between foreign inflows and real estate growth which is one of the objectives of this study was ignored by previous studies. It is against this backdrop that the current study aims at establishing the effect of foreign inflows on real estate investment in Kenya.

METHODOLOGY

This study adopted a casual research design as it sought to evaluate the effect of foreign inflow on real estate investment in Kenya. Secondary time series data was collected based on an annualized form for the period 1990 to 2019 which translates to a 30-year period.

Table 2.1. Operationalization of Variables

Variables	Measures	Source (s)
Diaspora Remittance	Remittance (% of GDP)	Cherono (2013), Juma (2014), Muiriri (2015)
Foreign Direct Investment	FDI(% of GDP)	Nyaga (2013), Pisit (2014), Amondi (2016)
Portfolio Investment	Net portfolio equity inflow (USD)	Mehmet *et al*. (2014), Ezeanyeji and Ifeako (2019)
Financial Development	Domestic credit to private sector (% of GDP)	Elie (2015), Tabi *et al*. (2011), Puatwoe & Piabuo (2017)
Real Estate investment	Housing Stock (the supply of housing in each period as a percentage of urban population)	Juma (2014), Muiriri (2015), Hamouri (2020)

Table 1. Descriptive Statistics

	Real Estate Investment	Diaspora Remittance	Foreign Direct Investment	Log of Portfolio Investment	Financial Development
Mean	2.3347	2.1623	0.9427	6.2900	22.3433
Maximum	6.1800	4.5400	3.4600	8.9800	27.3000
Minimum	1.7600	0.3900	0.0400	0.0000	18.4000
Standard Deviation	1.1217	1.0474	0.9630	2.2963	2.9821
Number of Observations	30	30	30	30	30

Table 2. Results of the ADF and PP Stationarity Tests

Variable		ADF Test			PP Test		
		Test statistic	Critical value	Remark	Test statistic	Critical value	Remark
Real Estate Investment	Level	0.0321		Stationary at 1st diff. integrated of order one I(1)	5.0981		Stationary at level. integrated at order zero I(0)
	1st Difference	5.9919	2.992		0.2007	2.967	
Diaspora Remittance	Level	3.8179		Stationary at level. integrated of order zero I(0)	2.4612		Stationary at 1st diff. integrated of order one I(1)
	1st Difference	4.7039	2.976		9.0670	2.967	
Foreign Direct Investment	Level	3.4233		Stationary at level. integrated of order zero I(0)	3.4024		Stationary at level. integrated of order zero I(0)
	1st Difference	3.6638	2.968		15.7738	2.967	
Log of Portfolio Investment	Level	3.0461		Stationary at level. integrated of order zero I(0)	3.9148		Stationary at level. integrated of order zero I(0)
	1st Difference	5.9909	2.968		6.0386	2.967	

Table 3: Results of the ARDL Bounds Test for Co-integration

Null hypothesis: no level relationship

Test Statistic	Value	K
F-statistic	5.298603	3

Critical values Bounds

Significance	I(0)	I(1)
10%	2.37	3.20
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Table 4. Multicollinearity test: Variance inflation factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Real Estate Investment (-1)	0.020795	428.7275	60.33296
Real Estate Investment (-2)	0.088473	1521.411	131.3973
Real Estate Investment (-3)	0.050832	756.8324	31.24006
Diaspora Remittance	0.000326	7.226645	1.363257
Foreign Direct Investment	0.000775	4.980789	2.460853
Foreign Direct Investment (-1)	0.000905	5.704231	2.802448
Foreign Direct Investment (-2)	0.001001	5.838141	3.073850
Foreign Direct Investment (-3)	0.000790	4.506099	2.468426
Foreign Direct Investment (-4)	0.000637	3.641727	1.984925
Log of Portfolio Investment	0.002285	406.7546	6.617694
Log of Portfolio Investment (-1)	0.002563	447.7748	6.632136
Log of Portfolio Investment (-2)	0.000255	42.04940	2.184953
C	0.176823	633.1990	NA

Table 4.5. Model Specification test: Ramsey RESET Test

	Value	df	Probability
t-statistic	1.894865	12	0.0825
F-statistic	3.590513	(1, 12)	0.0825
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.021738	1	0.021738
Restricted SSR	0.094388	13	0.007261
Unrestricted SSR	0.072650	12	0.006054

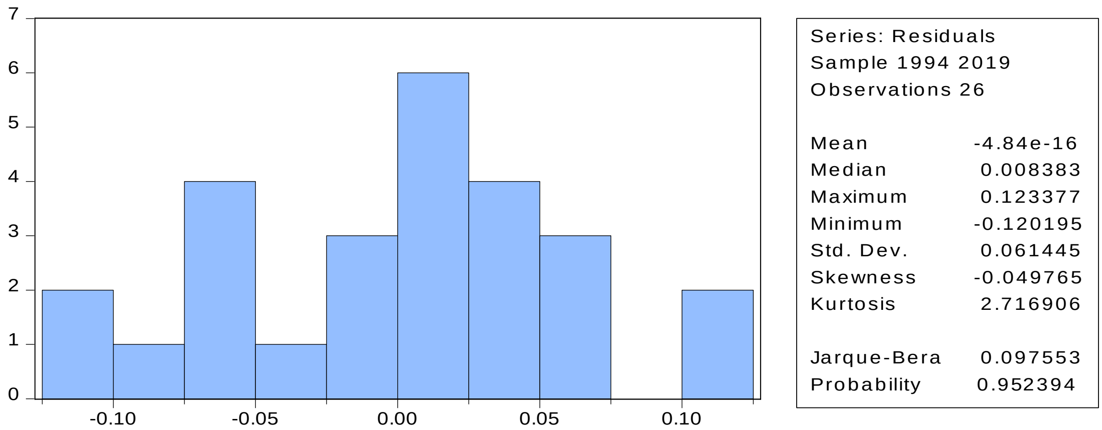

Fig 6. Normality Test Result- Jarque-Bera Test

Table 6. Breusch-Pagan-Godfrey Heteroscedasticity Test

F-statistic	2.276345	Prob. F(12,13)	0.0778
Obs*R-squared	17.61626	Prob. Chi-Square(12)	0.1278
Scaled explained SS	3.780683	Prob. Chi-Square(12)	0.9871

Table 4.7. Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.155453	Prob. F(2,11)	0.8579
Obs*R-squared	0.714668	Prob. Chi-Square(2)	0.6995

Table 8. ARDL Co-integration and Long-run Form

Cointegration Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Real Estate Investment (-1))	0.637866	0.117917	5.409455	0.0001
D(Real Estate Investment (-2))	0.365997	0.129712	2.821621	0.0144
D(Foreign Direct Investment)	-0.052062	0.018151	-2.868325	0.0132
D(Foreign Direct Investment (-1))	-0.077872	0.022523	-3.457426	0.0042
D(Foreign Direct Investment (-2))	-0.095674	0.021702	-4.408463	0.0007
D(Foreign Direct Investment (-3))	-0.087661	0.018814	-4.659352	0.0004
D(Log of Portfolio Investment)	-0.105522	0.030018	-3.515291	0.0038
D(Log of Portfolio Investment (-1))	-0.034613	0.013019	-2.658631	0.0197
CointEq(-1)*	-0.037290	0.006335	-5.885976	0.0001
R-squared	0.964633	Mean dependent var		0.160769
Adjusted R-squared	0.947989	S.D. dependent var		0.326728
S.E. of regression	0.074513	Akaike info criterion		-2.088257
Sum squared resid	0.094388	Schwarz criterion		-1.652762
Log likelihood	36.14734	Hannan-Quinn criter.		-1.962850
Durbin-Watson stat	2.209417			
Long-run Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Diaspora Remittance	-0.022087	0.495737	-0.044554	0.9651
Foreign Direct Investment	1.943145	4.927679	0.394333	0.6997
Log of Portfolio Investment	1.791038	3.998446	0.447934	0.6616
C	-10.16491	26.10332	-0.389411	0.7033
Cointeq = Real Estate Investment - (-0.0221* Diaspora Remittance + 1.9431* Foreign Direct Investment + 1.7910* Log of Portfolio Investment -10.1649)				

Table 9. Cointegration form of Dynamic Least Square (DOLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Diaspora Remittance	-8.458827	3.795119	-2.228870	0.1556
Foreign Direct Investment	1.823070	0.394535	4.620809	0.0438
Log of Portfolio Investment	6.080154	0.932268	6.521897	0.0227
FDDR	0.319627	0.148773	2.148420	0.1647
FDFDI	-0.088552	0.021344	-4.148723	0.0535
FDLPI	-0.131565	0.045985	-2.861028	0.1035
C	-14.81982	1.807275	-8.200088	0.0145
R-squared	0.999164	Mean dependent var		2.215926
Adjusted R-squared	0.989136	S.D. dependent var		0.901154
S.E. of regression	0.093926	Sum squared resid		0.017644
Long-run variance	0.004332			

Table 10. List of Hypotheses tested and comments

No	Objective	Hypothesis	Rule	p-value	Comment
1	The effect of diaspora remittance on real estate investment in Kenya	H_{01}: Diaspora remittance has no significant effect on real estate investment in Kenya	Reject H_{01} when p value <0.05/0.1	P value<0.05/0.1 and >0.050.1 (short run and long respectively)	Diaspora Remittance has no significant effect on Real Estate investment in Kenya
2	The effect of foreign direct investment on real estate investment in Kenya	H_{02}: Foreign Direct Investment has no significant effect on real estate investment in Kenya	Reject H_{01} when p value <0.05/0.1	P value<0.05/0.1 and >0.05/0.1 (short run and long respectively)	Foreign Direct Investment has a significant effect on Real Estate investment in Kenya in the short run
3	The effect of portfolio investment on real estate investment in Kenya	H_{03}: portfolio investment has no significant effect on real estate investment in Kenya	Reject H_{03} when p value <0.05/0.1	P value<0.05/0.1 and >0.05/0.1 (short run and long respectively)	Portfolio Investment has a negative and statistical significant effect on real Estate Investment in Kenya in the short-run but a positive insignificant relationship in the long-run
4	The moderating effect of financial development on the relationship between foreign inflows and real estate investment in Kenya	H_{04}: Financial development has no significant moderating effect on the nexus between foreign inflows and real estate investment in Kenya	Reject H_{04} when p value <0.05/0.1	P value<0.05/0.1 and >0.05/0.1 (short run and long respectively)	There was a weak evidence of a moderating effect of Financial Development on the relationship between Foreign Inflows and Real Estate Investment in Kenya

The regression analyses were based on two models, that is, direct effect and moderating effect model. The regression equation for the direct effect model takes the following form:

$$REI_t = \beta 0 + \beta_1 DR_t + \beta_2 FDI_t + \beta_3 PI_t + \epsilon_{it}. \quad 1.1$$

The moderation effect model takes the following form:

$$REI_t = \beta 0 + \beta_1 DR_t + \beta_2 FDI_t + \beta_3 PI_t + \beta_4 FD*DR_t + \beta_5 FD*FDI_t + \beta_6 FD*PI_t + \epsilon_{it} \quad 1.2$$

Where:

REI = Real Estate Investment. β0 = Constant, DR = Diaspora Remittance, FDI = Foreign Direct Investment, PI = Portfolio Investment, FD*DR= Interaction between Financial Development and Diaspora Remittance, FD*FDI= Interaction between Financial Development and Foreign Domestic Investment, FD*PI= Interaction between Financial Development and Portfolio Investment, β_1 to β_3= Regression coefficients, *= Interaction term, t= Time series (1990-2019), ϵ_{it}= Error term

Data Analysis and Discussion of Findings: The study undertook various pre- and post-estimation (diagnostic) tests so as to ensure that the research data and analyses methods are in order. The tests were done because violation of the underlying assumptions of the tests would result in inefficient, inconsistent and biased inferences (Wooldridge, 2013). The tests include test for serial correlation (Breusch Godfrey Serial correlation LM), stationarity (Augmented Dickey-Fuller) test, Heteroscedasticity (Breusch Pagan Godfrey) test, multicollinearity (VIF) test, model specification (Ramsey-Reset) test.

Descriptive Analysis: The descriptive statistics for the variables employed in the study are presented in Table 1. The largest dispersion from the mean, measured by the standard deviation is that recorded for Financial Development followed by the log of Portfolio Investment then, Real Estate Investment. The least deviation around the mean is that for Foreign Direct Investment

Pre-estimation Test Results: The pre-estimation test carried out was mainly to ascertain the unit root properties of the data. This was necessary in order to inform the right course of action. To test whether or not the individual variables were stationary the Augmented Dickey Fuller (ADF) and Phillips- Perron (PP) unit root tests were done and the 5% level of significance was considered. The results are presented in Table 2. Overall, the series (Real Estate Investment, Diaspora Remittance, Foreign Direct Investment, and Log of Portfolio Investment) are a mixture of I(0) and I(1). This therefore necessitated the use of Autoregressive Distribute Lag (ARDL) bounds testing technique to estimate the relationship between the variables. However, prior to the estimation of the ARDL model it was necessary to test for co-integration among the variables. This was done using the ARDL bound testing for co-integration and the results is as shown in Table 3. The null hypothesis for the ARDL Bounds Test for Co-integration holds that there is no long run relationship among the variables.

Diagnostic Test Results: This section discusses the results from the different diagnostic tests done to ascertain whether the estimation procedures employed align with the conventional Ordinary Least Square assumptions. These tests include that for multicollinearity, model specification, normality of residuals, heteroskedasticity and serial correlation. The results in Table 4 shows that the regressors are not highly correlated. The null hypothesis of the Ramsey-reset test for model specification has it that the model well specified and there are no omitted variables. Given that the probability values (0.0825) of the test is greater than 0.05, the study fails to reject the null hypothesis implying that the model is correctly specified as presented in Table 5

The null hypothesis of the Jarque-Bera test states that the residuals are normally distributed. The probability value of the Jarque-Bera test statistic is 0.9523, greater than 0.5. Therefore, the null hypothesis could not be rejected. Hence, the residuals were normally distributed as per Fig 6: Normality Test Result- Jarque-Bera Test. Fig 6: Normality Test Result- Jarque-Bera Test. The null hypothesis of the Breusch-Godfrey holds that there is no first order serial correlation. There is absence of serial correction in the model as presented in Table 6 and Table 7

Time Series Analysis: To determine the effect of foreign inflows on Real Estate Investment in Kenya the ARDL estimation approach was considered. This was informed by the results gotten from the test for unit root and that for co-integration in Table 8. The Cointegration Dynamic Least Square estimation is a long run cointegration analysis. From the result in Table 9, Financial Development has no significant moderating effect on the relationship between Diaspora Remittance and Real Estate Investment.

Summary of Hypotheses Tested

Summary, Conclusion and Recommendations

Summary of the Study

This study was conducted to examine the contribution of foreign inflows to Real Estate Investment in Kenya using time series data spanning from 1990 to 2019. Various conclusions have been derived from the findings obtained in the study. Based on the findings obtained, the study concludes that foreign inflows, through Foreign Direct Investment and Portfolio Investment determine Real Estate Investment only in the short run in Kenya.

Policy Recommendation: Based on the findings and conclusions drawn, the study recommends that the Government of Kenya looks inward for alternative funding options in order to achieve growth in the real estate sector. This is because the foreign inflows have shown to influence real estate investment only in the short run. More so, that the influence of foreign inflows on real estate investment is a negative one. Hence, alternative funding sources such as mortgage financing could be the key to the growth of the real estate sector in Kenya. However, the evaluation of the corresponding finance sources and their best possible employment lies outside the scope of this study. We recommend further study on this area based on other measures of real estate investment when such data is available.

REFERENCES

Abala, D. O. 2014. Foreign direct investment and economic growth: Effect of foreign inflows on real estate investment in Kenya.. *Research Project, 2014-2016. University of Nairobi*

Adams, R. H & Cuecuecha, A. 2013. The Impact of Remittances on Investment and Poverty in Ghana, World Development 50:24–40

Adnan, N. 2012. *Measurement of Financial Development: A Fresh Approach*, 8th International Conference on Islamic Economics and Finance

Albulescu, C. T. 2015. Do Foreign Direct and Portfolio Investments Affect Long-term Economic Growth in Central and Eastern Europe, 2nd Global Conference on Business, Economics, Management and Tourism, 30-31 October 2014, Prague, Czech Republic. Procedia Economics and Finance 23 2015 507 – 512

Al-Jarrah, I. M., Al-Zu'bi, Z. M., Jaara, O. O., & Alshurideh, M. 2012. Evaluating the Impact of Financial Development on Economic Growth in Jordan International Research Journal of Finance and Economics, 94, 123-139.

Amondi, E 2016. *Effect of Foreign Direct Investment on the Performance of the real estate sector in Kenya*. MBA Project Submitted to University of Nairobi

Antzoulatos, A., C. 2008. "Financial Development and Asymmetric Information.

Arvanitis, Y. 2013. African Housing Dynamics: Lessons from the Kenyan Market. *African Economic Brief*, 4 3, 1-12.

Bah E.M., Faye I., Geh Z.F. 2018. The Housing Sector in Africa: Setting the Scene. In: Housing Market Dynamics in Africa. Palgrave Macmillan, London

Cherono, M. R. 2013. The effect of remittances and financial development on private investment in Kenya. *M.A Economics Research Project*. University of Nairobi.

Commonwealth Diaspora Investor Survey 2018a. Understanding the Investment Potential of the Nigerian Diaspora. Results of the Commonwealth Diaspora Investor Survey

Commonwealth Diaspora Investor Survey 2018b. Understanding the Investment Potential of the Ghanaian Diaspora. Results of the Commonwealth Diaspora Investor Survey

Cytonn 2019. Current Real Estate Trends in Kenya & How They Affect Investors

Elie N 2015 Financial development and economic growth in sub-Saharan Africa: a dynamic panel data analysis. *European Journal of Sustainable Development* 42:369–378.

Ezeanyeji, C. I & Ifeako, M 2019. Foreign Portfolio Investment on Economic Growth of Nigeria: An Impact Analysis. *International Journal of Academic Management Science Research* IJAMSR, 3 3, 24-36.

Fayomi, O, Azuh D and Ajayi, L 2015, "The Impacts of Remittances on Nigeria's Economic Growth: A Study of Nigerian Diasporas in Ghana," Journal of South African Business Research, Vol. 2015 2015.

Guru, B.K. and Yadav, I.S. 2019, "Financial development and economic growth: panel evidence from BRICS", *Journal of Economics, Finance and Administrative Science*, 24 47, 113-126.

Hamouri, Q 2020. The Effect of Remittances on the Real Estate Market in Jordan. International Journal of Recent Technology and Engineering IJRTE, 8 5, 426-435.

Housing Price Index Report 2015. Quarter three, Quarter Four Report. Kenya Property Developers and Hass Consultant Report. 2013. Annual Report

International Finance Corporation 2020. In Rwanda, an Investment Market at Home

Jr-Tsung, H., Yu-Ning H. & Kuang-Ta L 2015. The Role of Foreign Direct Investment in Shanghai's Real Estate Price—Culprit or Scapegoat?

Juma, M.I. 2014. The Effect of Macro-Economic Variables on Growth in Real Estate Investment in Kenya. *Master's Project.* University of Nairobi: Nairobi, Kenya.

Kamin, S., Turner, P. and Van't Dack, J. 1998. *The Transmission Mechanism of Monetary Policy in Emerging Market Economies: An Overview.* Basel: Bank for International Settlements.

Kiptoo, B. E. 2013. Impacts of remittance inflows on domestic savings in Kenya. *Unpublished M.A Economics Research Project*. University of Nairobi.

KNBS 2013. Leading Economic Indicators from www.knbs.or.ke/economicindicators.php

Knight F. 2014. Kenya Market Update: Knight Frank Research Reports retrieved from www.knightfrank.com

Loyford, M. M., & Moronge, M. 2014. Effects of economic factors on performance of Real Estate in Kenya. *European Journal of Business Management, 1*11, 181-200.

Mahedi M. 2014. Workers' Remittance Inflow, Financial Development and Economic Growth: A Study on Bangladesh. *International Journal of Economics and Finance*; Vol. 6, No. 8; ISSN 1916-9728

Masron, T. A & Fereidouni, H. G 2012. *The Effect of FDI on Foreign Real Estate Investment: Evidence From Emerging Economies.* 18TH Annual Pacific-Rim Real Estate Society Conference adelaide, Australia,15-18 January 2012

Masron, T. A & Kepili, E. I 2016. Can Foreign Investment In Real Estate Improves Host Country's Affordability?

Mehmet, M & Mustafa, T. D & Ibrahim, E. 2014. "The Relationship Between Foreign Portfolio Investments And Economic Growth: The Case Of Turkey," Proceedings of International Academic.

Muiriri, A. K 2015. Effect of Diaspora Remittances on Real Estate Growth In Kenya. MSc Project Submitted to University of Nairobi.

Mungai, D. K 2016. *Role Of Financing Options On The Growth Of Real Estate In Kenya: A Survey Of Real Estate Developers In Nairobi Metropolis.* A Dissertation Submitted to KCA University.

Mwangi, B. N. & Mwenda, S. N. 2015. The Effect of International Remittances on Economic Growth in Kenya, *Microeconomics and Macroeconomics*, Vol. 3 No. 1, pp. 15-24.

Mwathi, J.K. 2013. The Effect of Financing Sources on Real Estate Development in Kenya. *Master's Project.* University of Nairobi, Nairobi, Kenya.

Ngugi, N. 2015. The impact of Diaspora remittance on the Kenyan economy. *Hapa Kenya Journal.*

Njoroge, C., Muturi, W., & Oluoch, O. 2019. Exchange Rate and Performance of the Residential Property Market In Kenya. *International Journal of Finance & Banking Studies 2147-4486, 8*3, 88-100. https://doi.org/10.20525/jfbs.v8i3.507

Nyaga, N. 2013. The Impact of Foreign Direct Investment on Economic Growth in Kenya. *Research Project*, 2010-2014.

Pisit, P. 2014. Assessment of FDI impact on Thailand's production sectors: implications for investment promotion activities. *Research Project,* 2014-2015.

Puatwoe, J.T. & Piabuo, S.M. 2017 Financial sector development and economic growth: evidence from Cameroon. *Financ Innov* **3,** 25 2017. https://doi.org/10.1186/s40854-017-0073-x

Republic of Kenya 2014. *Diaspora Policy.* Nairobi: Government Printer.

Reubenson, C. K., Pokhariyal, G.P., & Obwocha, J. 2014. Determinants of Competitive Advantage in the Real Estate Industry in Kenya: A Case of Thika Greens Golf Estate in Murang'a County. *International Journal of Social Sciences and Entrepreneurship*, 1 9, 1-8.

Saunders, M. Lewis, P. and Thornhill, A. 2003. *Research methods for business students*. 3rdedition, Pearson education limited, Spain.

Suley, W., & Moranga, K. G. 2020. Indirect investment and financial performance of the real estate sector in Nairobi County Kenya. *Bussecon Review of Finance & Banking 2687-2501, 2*1, 25-34.

Tabi A, Njong A, Neba C 2011 Financial development and economic growth in Cameroon. Journal of Economics and International Finance Vol 36:367–375.

Ugherughe, J. E & Jisike, J. O 2019. Diaspora Remittances And The Nigerian Economy: An Empirical Analysis 1977–2017 Sahel Analyst: Journal of Management Sciences 172, 1-16.

World Bank 2014. *"Portfolio Investment, net BoP, current US$". World Development Indicators. World Bank. Retrieved 26 December 2014*

Yıldırım S, Ozdemir BK, Dogan B 2013 Financial development and economic growth nexus in emerging European economies: new evidence from asymmetric causality. International Journal of Economics and Financial Issues 33:710–722.

****