

**EFFECT OF EXCHANGE RATE MOVEMENTS ON FOREIGN DIRECT
INVESTMENT IN KENYA**

LYDIAH CHELAGAT CHUMBA

D63/83890/2016

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF A DEGREE IN MASTER
OF SCIENCE IN FINANCE, THE UNIVERSITY OF NAIROBI.**

DECEMBER, 2018

DECLARATION

This paper is my original work and that no one has ever presented it for a degree award in any university.

Signature_____

Date_____

Lydia Chelagat Chumba

D63/83890/2016

This paper has been presented for examination with my approval as university supervisor.

Signature_____

Date_____

Dr. Cyrus Iraya

Senior Lecturer

Department of Finance and Accounting

School of Business, University of Nairobi

DEDICATION

This work is dedicated to my beloved parents, Mr. and Mrs. Chumba. I cannot thank you enough for making me who I am today!

ACKNOWLEDGEMENT

First, I thank the almighty God for His protection and provision throughout my study. Without His tender love and mercy, this won't have happened.

Secondly, I am greatly indebted to my supervisor, Dr. Iraya for his guidance and wise counsel which made this research a big success. My sincere gratitude goes to the chairperson of Business department, Dr. Mirie, Moderator, Dr. Nyamute, and to the entire teaching fraternity who laid the intellectual foundation for this paper.

Thirdly, my heartfelt appreciation extends to my family members and friends, who have been my source of inspiration and a pillar in this journey. My father, James, my mum, Sally, and my brothers and sisters. Thank you for your support and inspiration.

Lastly, am grateful to my classmates for the good and even bumpy moments we shared in the process of acquiring education, and to my friends; Tito Tirop Ronoh, Celestine Kipchumba, Stephene Maende just to mention a few, for their contribution towards this study.

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ABBREVIATIONS

CPI	Consumer Price Index
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
OECD	Organization of Economic Corporation and Development
NER	Nominal Exchange Rate
PPP	Purchasing Power Parity
REER	Real Effective Exchange Rate
UNCTAD	United Nations Conference on Trade and Development
US	United States
USA	United States of America

ABSTRACT

Foreign direct investment plays a critical role towards economic growth and development especially in capital deficient countries like Kenya. It necessitates capital inflows which comes with spillover effects such as technology transfer, human capital specialization, expansion of international trade, job creation for the locals and an enhanced business environment. Despite all these benefits, it has remained unclear on how movements in the exchange rate affects foreign direct investment due to conflicting findings in the earlier studies and limited literature for the Kenyan case. It was based on these glaring gaps that this study sought to determine the effect of Kenya's exchange rate movements on the foreign direct investment. The study used secondary time series data for 47 years (1970-2016). This data was collected from World Development Indicators, Kenya National Bureau of Statistics, Economic Surveys, Statistical Abstracts, United Nations Conference on Trade and Development and Central bank of Kenya database. The study employed Ordinary Least squares regression with robust standard errors to address the challenge of heteroscedasticity. In addition, multicollinearity test was conducted on the estimates to ensure that the results did not suffer from endogeneity problem. The study generated both descriptive and correlation statistics. Regression statistics revealed that real effective exchange rate was negatively related to foreign direct investment. However, this was not significant. Additionally, gross domestic product was significant and positively associated with the foreign direct investment. Even though inflation was negatively related to foreign direct investment, its coefficient was not significant. The study recommended that appropriate mechanisms should be put in place by the Kenyan government to ensure stability in the exchange rate. It was also recommended that the country should effectively manage its fiscal and monetary policies to ensure a steady economic growth. A further study on the effect of real exchange rate on foreign direct investment was suggested to find out why this relationship was not significant.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

It is widely acknowledged world over that Foreign Direct Investment (FDI) is a critical factor driving growth of those economies with inadequate capital and which are technologically backward. Investors looking for a potential market, cheap labour, resource-rich economies, and growth prospects and countries which requires inflow of capital, technology spillover, job creation and employment is therefore a perfect economic match (Semere, 2012). But, this association may not always be smooth. This is because, for a foreign investor to commit long term investment in an economy, there must be an assurance of a stable macroeconomic climate and strong institutions especially with regard to enforcement of contracts. Developing countries like Kenya, with unpredictable macroeconomic environment need FDI as a growth engine (IMF, 2002).

Additionally, the failure of Breton woods pact brought in another worrisome aspect to foreign investors-the aspect of fluctuating and unpredictable exchange rates valuation because of the market force called volatility (Semere, 2012). More often, exchange rate interferes with market factors such like equating demand and supply of both currencies (domestic and foreign), and flimsy macroeconomic framework attempting to contain exchange rates. This will always result into fluctuations and unlikelihood of the exchange rate-another risk to investors.

Kenya, just like other developing economies, regards FDI as a key factor towards the growth and development of its economy. FDI is a vital source of economy's capital inflows with spillover effects such as technological transfer, human capital specialization, international trade expansion, and a conducive business environment (OECD, 2002). However, for Kenya to attract foreign investor to enjoy all these positive effects, a favorable macroeconomic climate is necessary. Since

the liberalization of the exchange rate by the Kenyan government in 1990's, there has been little success regarding foreign direct investment inflows. This has been attributed to the exchange rate fluctuations due to the free exchange rate regime (Mishkin & Eakins, 2009).

The strength of an economy's currency is measured by current account balances, where a deficit in the current account balance is an indication of a weakening local currency. Potential foreign investors have a negative perception for a country with current account deficit and this is likely to reduce FDI inflows which may result from higher levels of inflation and rapid exchange rate volatility. However, most foreign investors are likely to take an advantage of this situation by negotiating for better operating conditions which may lead to more FDI inflows and increase current account deficit (Njuguna, 2015).

1.1.1 Foreign Exchange Rate Movements

Exchange rate refers to the price of local currency in term of a foreign currency. There are two categories of exchange rates, that is, nominal and real. A nominal exchange rate (NER) excludes the effects of inflation, while on the other hand, real exchange rate (RER) is adjusted for inflationary effects (Musyoki et al., 2012). Real Exchange Rate (RER)-the focus of the study, is the rate of exchange of goods and services manufactured in an economy with those in other economies abroad. RER has received recognition as an important factor in finance and international macroeconomics.

Exchange rate movement or volatility is described as fluctuations of the real exchange rate in their long-run trends or short-run movements (hourly, daily, weekly, or monthly) (Frenkel & Goldstein, 1987). Literature shows excessive exchange rate volatility in real terms reduces the level of economic growth by occasioning uncertainties on profits and macroeconomic factors such as

unemployment, inflation and interest rates (McKinnon & Ohno, 1997). RER volatility can also interfere with the flow of international capital by reducing FDI.

In the Flexible Exchange rate regime, literature argues that exchange rates are more volatile under the influence of factors not associated to fundamental economic variables (Muema, 2013). This implies that, fluctuations in the exchange rate would be more erratic particularly in short-run. This is likely to have harmful effects to FDI and to the economic activities at large.

1.1.2 Foreign Direct Investment

FDI refers to capital flow from an economy to the other according to Muema (2013). A country receiving FDI benefits from both technology and manpower transfers which are deemed essential for economic growth. FDI basically presents long-term commitment to the recipient country. A multinational, or a country that is seeking to invest in another will always ensure that its benefits surpasses the risks which must be dealt with. There are three types of FDI's according to UNCTAD (2002). These are: reinvested earnings, equity capital and other types of capital which are mainly intercompany loans.

FDI benefits the host country through new technology adoption and transfer of technical skills as well as managerial expertise to different sectors of the economy which might prove difficult to raise domestically or through importation (Olson, 2008). FDI is thus, very crucial especially, for developing countries in availing the needed resources for development. This is due to low saving rates, low productivity, low profits and low capital development in these countries.

Several factors affect the ability of a country in attracting FDI. Prospects in the growth of an economy, taxation rates and exchange rates are some of these factors. For example, countries that

have higher prospects for growth, low tax rates on corporate profits and relatively stable exchange rates will appeal most to foreign investors than those with weaker macroeconomic environment.

1.1.3 Foreign Exchange Rates and FDI

Movements in exchange rates have some predefined implications on foreign direct investment. A decline in the value of domestic currency might lower labour and hence production costs in the destination market which will create a location advantage for foreign investor (Musyoki et al., 2012). Investors are likely to take an advantage of the relatively cheaper cost of production which might increase return on investment to the foreign investors. Nevertheless, this argument assumes that the exchange rate depreciation is not expected beforehand (Njuguna, 2015). If the movement in the rate of exchange rate is expected, this may reduce the importance of relative wage advantage because the expected depreciation in the exchange rate, is reflected in higher financing cost of investment due to equalization of risk adjusted anticipated rate of return across economies according to interest parity condition.

However, the interest parity suggestion is always rebutted by empirical studies and there appears to be a positive insinuation of the exchange rate decline (Nayak & Choudhury, 2014). Additionally, the decline of the value of domestic currency increases the income of an investing multinational company in the host market by reducing the investment cost if capital which is in domestic currency and increasing wealth which is in terms of appreciated foreign currency. Even though empirical studies leading to positive effect of foreign exchange rate decline on foreign direct investment seems to be settled, there exists a wide-ranging disagreement over likely impact of exchange rate movement on FDI (Njuguna, 2015).

1.1.4 Foreign Exchange Rates and FDI in Kenya

FDI is a key source of Kenya's foreign exchange. In Kenya, FDI's have never been consistent over the years. Some periods have recorded high inflows while in other periods, the country has experienced low FDI inflows. For example, FDI inflows were very low in 1980's and 1990's due to low economic performances coupled with poor infrastructure and prohibitively high cost of living (Ernst & Young, 2014) (see Figure 1.1). Kenya hosts more than 200 multinational firms from Britain, United States, Germany, South Africa, Switzerland, China, Netherlands and India as its major sources of FDI inflows across all sectors (UNCTAD, 2016).

According to UNCTAD (2016) report, the average growth rate of Kenya's FDI between 2007 to 2015 was at 40% with majority of the inflows going into retail and consumer products, technology, telecommunications, media, minerals, oil and natural gas industries. The main sources of these inflows were: United Kingdom, United States, and India. In the year 2015, Kenya received level of USD 600million. This was partly attributed to investor confidences and their renewed interest in the Kenyan economy due to improved business climate and blossoming domestic consumer market (UNCTAD, 2016). Oil, gas and the manufacturing sector were the main beneficiaries of this capital.

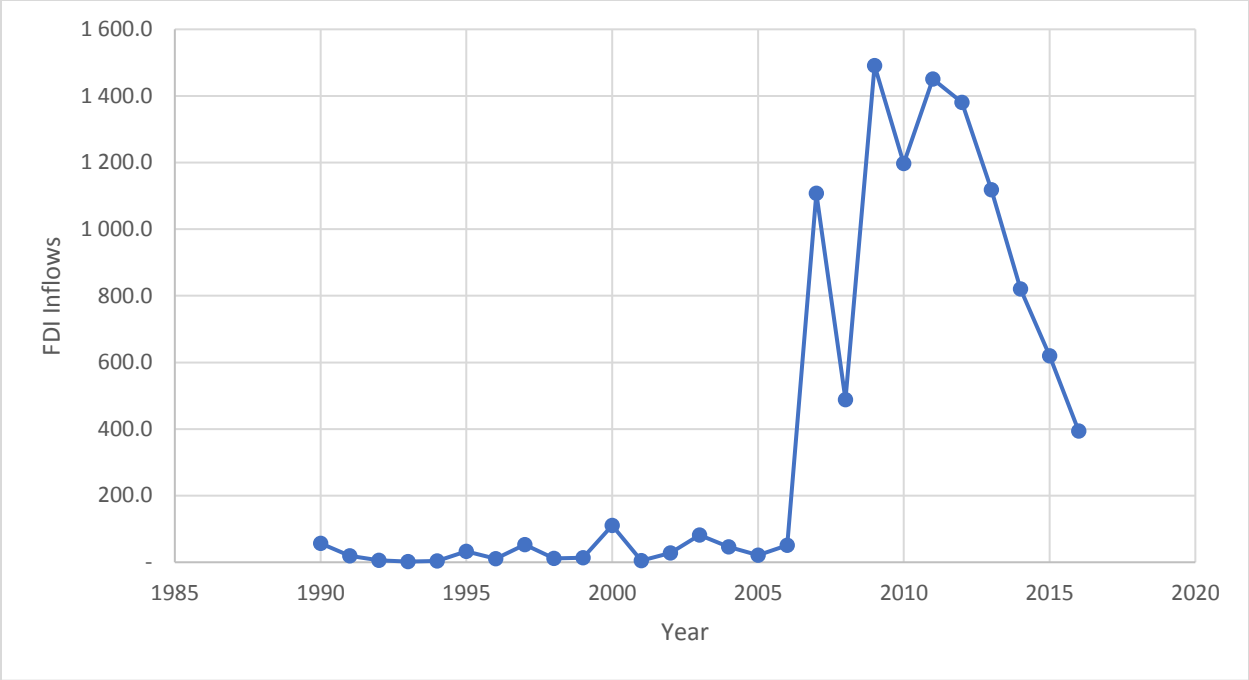


Figure 1.1 Kenya’s FDI Inflows in Million USD

Source: Computations from UNCTAD World Investment Report (2017)

For the last three decades, Kenya’s RER against United States Dollar (USD) has been volatile (see Figure 1.2), a situation that has created uncertainty in investment, especially FDI (Otieno, 2012).

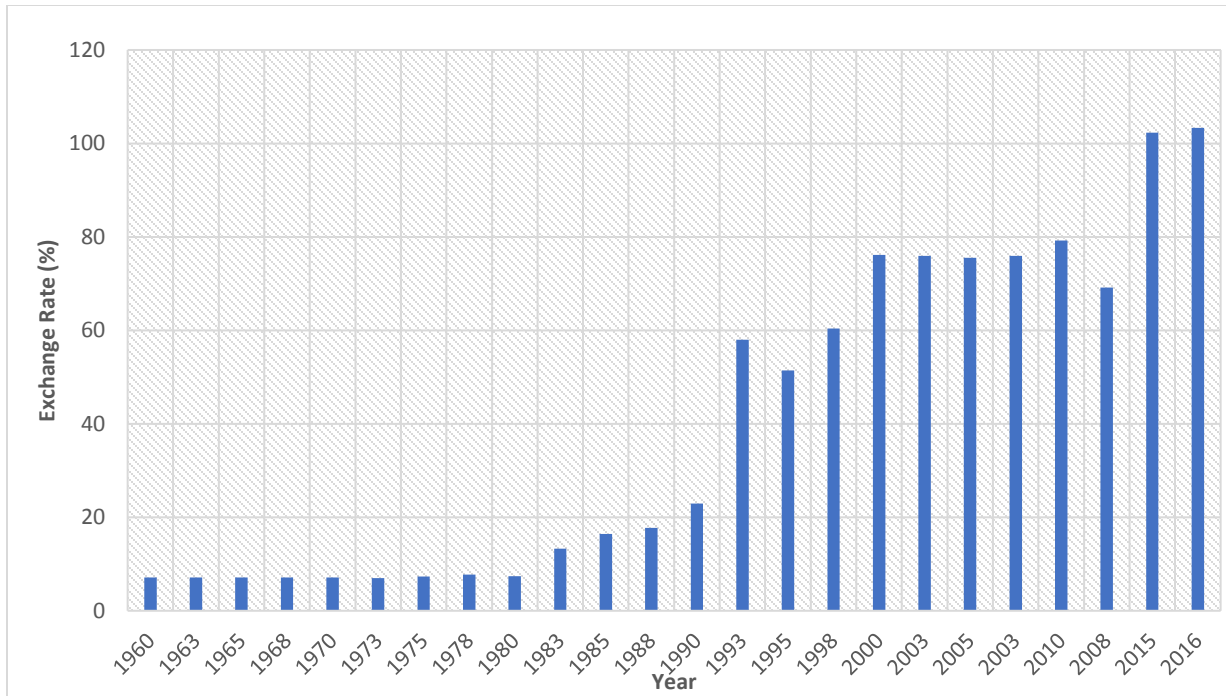


Figure 1.2 Kenya’s Exchange Rate Movement

Source: Computations from Statistical abstracts (various issues)

Figure 1.2 indicates that the Kenya’s exchange rate was relatively stable in the first two decades after independence. However, from 1990 up to present, the exchange rate has been very volatile.

1.2 Research Problem

The role of FDI towards economic growth and development especially for capital deficient countries like Kenya cannot be gainsaid. This is an important source of economy’s capital inflows with spillover effects which includes: transfer of technology, human capital specialization, international trade expansion, and favorable business environment. Existing literature on the link between fluctuations in the exchange rate and FDI is still inconclusive. While some studies have found negative relationship between exchange rate movements and FDI (Semere, 2012; Parajuli, 2012; Goldberg, 2006), others have argued that the two variables are positively related (Osinubi & Amaghionyeodiwe, 2010; Sifunjo & Mwasaru, 2012; Juthathip & Archanun, 2013; Cooper, 2014).

In addition, this relationship has never been always smooth due to exchange rate movements, unpredictable macroeconomic environment and weak institutions framework. Exchange rate movements can bring about a shift in prices of multinational firms, importing and exporting companies and thereby affecting their competitiveness at the global scene. In addition, exchange rate movements in an economy, may hinder foreign investor from committing their assets in different sectors.

Furthermore, studies that have been undertaken on this subject in the Kenyan case are very scanty. A few of these studies majorly dwelt on the factors explaining fluctuations in the exchange rate (Were et al., 2001; Ndungu, 1999; Kiptoo, 2007), while others have investigated how fluctuations in the exchange rate impacts growth of Kenya's economy (Musyoki et al., 2012; Njuguna, 2015). Arising from these gaps, this study sought to answer the question, what is the effect of exchange rate movements on FDI inflows in Kenya?

1.3 Objective of the Study

To investigate the effect of exchange rate movements on the FDI inflows in Kenya.

1.4 Value of the Study

The results of this study are expected to benefit those mandated with developing investment policies and strategies to make Kenya an ideal country for foreign investors. In addition, these findings enable the government to understand factors occasioning poor performance of the FDI sector, especially exchange rate movements. This is instrumental in formulating strategies to market Kenya as an FDI destination of choice, while addressing factors that will hinder this important course.

Furthermore, the findings are useful to other academicians and researchers, as it would mainly inform future studies. Various scholars and academicians could base their discussions about the link between exchange rate movements and FDI on this study.

Moreover, findings of this study are expected to equip multinational corporations and potential investors with knowledge on how to manage exchange rate fluctuations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

For capital deficient countries like Kenya, Foreign Direct Investments are very instrumental towards growth of the economy. This then raises the need for stable macroeconomic environment. Exchange rate has been argued to be among key macroeconomic variables and whose movement may have some implications on FDIs. This chapter reviews related body of knowledge especially on the implications of exchange rate fluctuations on FDI. The chapter begins by an analysis of the theories, followed by empirical evidence and then conceptual framework and ends by presenting a summary of the literature.

2.2 Theoretical Literature Review

A theory comprises of a systematic body of ideas about a specific topic. Theories organize and describe a variety of specific facts or description of behavior (Newing, 2011). The study was guided by three theoretical frameworks; Capital Market, Purchasing Power Parity and Transaction Risk.

2.2.1 Capital Market Theory

This theory is among the pioneering frameworks which helps to explain determinants of Foreign Direct Investment. The theory was propounded Aliber in 1970 (Aliber, 1970). It argues that FDI comes due to imperfections in the capital markets. To be more specific, FDI arises because of the currency differences between the host and source country (Nayak& Choudhury, 2014). According to this theory, weak domestic currencies have a higher probability to attract FDI. The theory enables an economy to benefit from the differences existing between market capitalization rates of those economies with weaker currencies with market capitalization of countries with stronger currencies.

In addition, the theory asserts that Multinational Corporations in source countries and which are situated in economies with hard currencies, can obtain loans at a minimal rate of interest than host country Multinational Corporations. This is because most investors do not consider the foreign part of source economy multinationals. This implies that multinationals from source countries have an advantage for borrowing to enable them to get cheaper credit to finance their overseas associates and subsidiaries than local companies.

However, scholars have challenged this theory with the fact that it applies only to developed economy and not developing countries. For example, Lall (1979) asserted that capital market theory does not apply to developing countries with either imperfect or no capital markets, as well as those with strict regulations on foreign exchange rate. Similarly, Nayak and Choudhury (2014) observed that Aliber (1970) did not discuss FDI between two economies with similar currency strength or how multinationals in emerging economies could to commit investment in developed economies with stronger domestic currencies. The theory was used to understanding how fluctuations in the exchange rate of the Kenyan shilling against United States Dollar, affects FDI inflows in Kenya.

2.2.2 Purchasing Power Parity (PPP) Theory

This theory was coined by Gustav Cassel in 1918 at the end of the First World War mainly to propose sets of official exchange rates to allow for the resumption of normal trade relations (Shapiro, 1992). According to this theory, price level adjustments for the exchange rate differences should be the same worldwide, that is, one unit of the domestic currency should have the same purchasing power across the world. This theory depends on the prophecy of the fluctuations of the exchange rate on the changing patterns of trade because of varied rates of inflation among countries.

In their contribution to the PPP theory, Kidwell et al. (2008) states that in most occasions, exchange rates are more likely to move to levels where the cost of commodities in an economy is similar in the same currency. In addition, if PPP theory holds, then all commodities should have similar price in the same currency in all countries, implying no net saving from purchasing commodities in one place relative to another. In the absence of international trade barriers, the absolute form of the theory argues that, consumers transfer their demands to places with low prices and hence denoting that a similar basket of goods in two economies ought to have the same cost when priced on the same (Madura & Fox, 2011). The depreciation of one currency, would likely tend to reduce the price of goods in that country, then the same goods in another country and hence a rise in exports and a reduction of imports in the absence of trade barriers.

The PPP hypothesises that exchange rates are not constant but always adjust to match PPP. Any change in foreign currency should seek to maintain equality between the new adjusted price indexes of the two given countries. However, the PPP does not explain exchange rates fully due to the assumption that goods are identical and due to the fact that trade barriers and transportation costs are low is not realistic in two different countries, though the theory is very important in helping to understand the situation. In an ideal situation, FDI would not be affected by exchange rate volatility because the profits gained by multinationals operating in the country with a weaker currency would not occur. Since all costs would be the same, there will be no need to invest in another country other than your own. This theory was instrumental to this study in the sense that, it helped to understand how the changes in patterns of trade occasioned by exchange rate movements impacts FDI.

2.2.3 Transaction Risk Theory

This theory is attributable to the works of Hicks (1982), Glaum (1990) and Shoup (1998) and which argue that companies in increasingly global economies encounter risks related to exchange rate movement. One of such a risk is that of transaction which is the change in domestic currency of the flow of cash which is already contracted for (Glaum, 1990). Transaction costs measures variations in the value of outstanding financial obligations experienced before changes in the exchange rates but which are not to be settled pending exchange rate changes.

Transaction risk is the simplest type of foreign exchange rate risk and which is relevant to many firms. Lessard (2006) observed that this kind of risk bears the greatest impact on the profitability of the company and arguably the primary object of foreign exchange rate management for multinational companies. For instance, the appreciation of a company's local currency reduces both the inflows and outflows of cash. The impact of this on the net cash flows depends inflow transactions are affected less or more as compared to the outflow transactions (Madura & Fox, 2006). Therefore, this theory was useful in guiding the study to ascertain whether transaction risks associated with exchange rate volatility impact FDI, and the nature of such an impact.

2.3 Determinants of FDI Inflows

Existing literature indicate that various factors explain FDI in any economy and that these factors differ from a period to period. Through studies, researchers have been able to explain the reasons why some economies are prosperous while others are not with regard to attracting FDI. Despite the many studies on the determinants of FDI, there is still no clear agreement. Some of the widely acknowledge determinants are inflation, economic growth and exchange rates.

2.3.1 Inflation

Inflation is the persistence increase in the general price level (Chirra, 2009). It's among the most vital macroeconomic variable towards the management of the economic climate and fiscal governance. Inflation is generally determined by Consumer Price Index which is basically the average price of selected products. Higher levels of inflation reflect poor macroeconomic environment because it presents uncertainties in the economy (Kadongo, 2011). Thus, most investors especially foreign based will be reluctant to commit their assets in such environment. It therefore follows that the stability of inflation is very important towards the attraction of FDI.

Nwankwo (2006) emphasized that price instability in Africa is to blame for the deflection of FDI flows from Africa. He noted that poor policies (monetary and fiscal) bring about unsustainable budgetary deficits, and therefore, high inflationary pressures increase production costs in the local economy and hence exchange rate instability. This makes a country too risky to attract FDI. It therefore follows that high levels of inflation coupled with excess budgetary deficits constraints an economy's ability to attract Foreign Direct Investment.

2.3. 2 Economic Growth

The role of economic growth in inducing Foreign Direct Investment is contradictory. For instance, Cooper (2014) argued that rapid economic growth rate brings about many profitable opportunities than economies witnessing slower economic growth or no growth at all. Similarly, Aoki (2007) established that economic growth had a strong relationship with Foreign Direct Investment between 1983-1986. However, this relationship was found to be weaker between 1975-1978.

On the other hand, Aoki (2007) observed a very strong positive link between the growth of the economy and the FDI for the case of emerging economies, and a weak negative link between the

two variables for the case of developed countries. Similarly, Cooper (2014) established a positive relationship between the two variables for economies outside the sub-Saharan Africa, but the same study established insignificant impact of economic growth on FDI for countries within the sub-Saharan region. Ariel and Gita (2014) observed similar findings.

2.3. 2 Foreign Exchange Rates

It has been established that foreign exchange rates are very important component of FDI. Cooper (2014) pioneered the debate on the link between exchange rates and FDI where he argued that different currencies were attributable for the attraction of FDI. In his contribution, Goldberg (2006) noted that exchange rate movements determine the decisions by multinational companies to locate in different parts of the world. The risks attributed to exchange rate movements significantly determine Foreign Direct Investment (Ariel & Gita, 2014).

Studies have established that exchange rates could negatively impact on the FDI (Goldberg, 2006). Goldberg (2006) stated that the size of the market, fiscal deficits, inflation and rates of exchange significantly explained FDI. Since exchange rates contributes directly to unlikelihood of in the transaction plans of investors, they are very relevant in determining FDI in an economy (Behera, 2008).

2.4 Empirical Literature Review

Existing literature show that exchange rate movements have predefined effect on Foreign Direct Investment. For instance, Juthathip and Archanun (2013) observed that depreciation of the local currency in relation to foreign currencies reduces costs of production and therefore creating advantage to foreign investors. These investors take an opportunity due to cheap production costs. However, this argument relies on unexpected depreciation in the exchange rate postulation. On the other hand, if the movements in the exchange rates is expected, this may reduce vitality the of the

associated advantage to wages because the expected weaker currency may be manifested through an increase in the cost of financing investments which occurs as a result of equalization of the risk attuned to anticipated return on investment based on the interest parity predictions (Ariel & Gita, 2014).

There is unlimited literature which shows that movements in the rates of exchange movements have direct, harmful consequences on the inflows of FDI (Semere, 2012). Movements in the exchange rates creates a situation of unlikelihood as the variation of anticipated revenues increases while its present value declines. This could occasion reluctance on the side of investors to commit more of their resources in foreign direct investment.

Parajuli (2012) investigated the link between trade, FDI and exchange rate movements in some countries of South East Asia, Latin America, United States of America (USA) and Japan. This study established that local currency depreciation increases the returns to Japanese investing in South East Asia as compared to the returns in Japan. The study further concluded that weakening of currencies in South East Asia economies when compared to Japanese Yen was responsible for increases in FDI to these states from Japan and responsible for a decrease in FDI to the United States (US) economies and at the same time shifting upwards the import levels in terms of production inputs from Japan.

In Nigeria, Osinubi and Amaghionyeodiwe (2010) established a positive link between FDI inflows and the movements in the exchange rates. This study employed secondary data from 1970 to 2004. These discoveries implied that depreciation of Naira increased real FDI inflows. They further found that private investment by foreign companies, increased net exports and thus leading to higher Gross Domestic Product (GDP) between 1970 and 2007.

The link between the exchange rates and FDI inflows in Mexico was conducted by the Organization of Economic Corporation and Development countries (OECD) using data from 1994 to 2008 and concluded that exchange rates are positively correlated with FDI (Parajuli, 2012). The results indicate that valuation of domestic currencies encourages FDI inflows from the OECD countries to Mexico.

Kibe (2015) for the case of sub-Saharan Africa (SSA), pointed out that exchange rate volatility was one of the main barriers to FDI in Mozambique, Botswana and Zimbabwe. In a similar study conducted in south African countries, Jenkins and Otieno (2015) established that 25% of companies identified exchange rate risk as a key determining factor of Foreign Direct Investment in SSA countries. Nevertheless, their analysis ignored the extent to which exchange rate volatility constrains FDI.

A study by Cooper (2014), stated that exchange rate movements are responsible for rapid changes in the capital flows. According to this study, a depreciation in the local currency leads to an increase in capital inflows which takes advantage of weakening local currency. In addition, exchange rate appreciation leads to differences in the interest rate rise. Furthermore, the study concluded that risk premium related to volatility of private capital flows is attributed to exchange rate volatility. In his investigation on how exchange rate fluctuations impact on the inflows of FDI in Kenya between 1981 and 2010, Otieno (2012) argued that exchange rate movements had less impact on the flow of FDI in the country. However, the study established that exchange rate volatility and FDI inflows are positively correlated such that increases in exchange rate volatility of the Kenyan shilling, led to higher FDI inflows. On the contrary, Chirra (2009) while investigating the impact of exchange rate movement to FDI, observed a strong and negative effect of exchange rate fluctuations on FDI inflows.

A study into the link between stock market prices and the rates of exchange in Kenya found that changes in the nominal Kenya shilling against US Dollar led to increased cost of capital which ultimately led to a decrease in supply for capital (Sifunjo & Mwasaru, 2012). This study consisted of data sets of monthly observations of the then Nairobi Stock exchange between November 1993 and May 1999. The study attributed the increase in capital cost to the decline in the investor confidence in both the financial and the stock markets as well as the financial capacity of investors. During his study on the factors determining Foreign Direct Investment, Mwema (2013) observed a strong and positive link between exchange rate movements and FDI rate, implying that weakening Kenyan shilling was associated with higher FDI inflows. This study therefore concluded that the exchange rate of the Kenyan shilling against the USD, was the main factor explaining FDI in Kenya.

2.5 Conceptual Framework

A conceptual framework is an analysis of how likely dependent and independent variables of the study are related to each other from theoretical point of view (Cooper and Schindler, 2011). The framework guides the researcher to know what variables or elements to observe or collect data on and during data analysis. Based on the theory as well as empirical literature, Figure 2.1 presents a conceptual framework for the study.

Independent variables

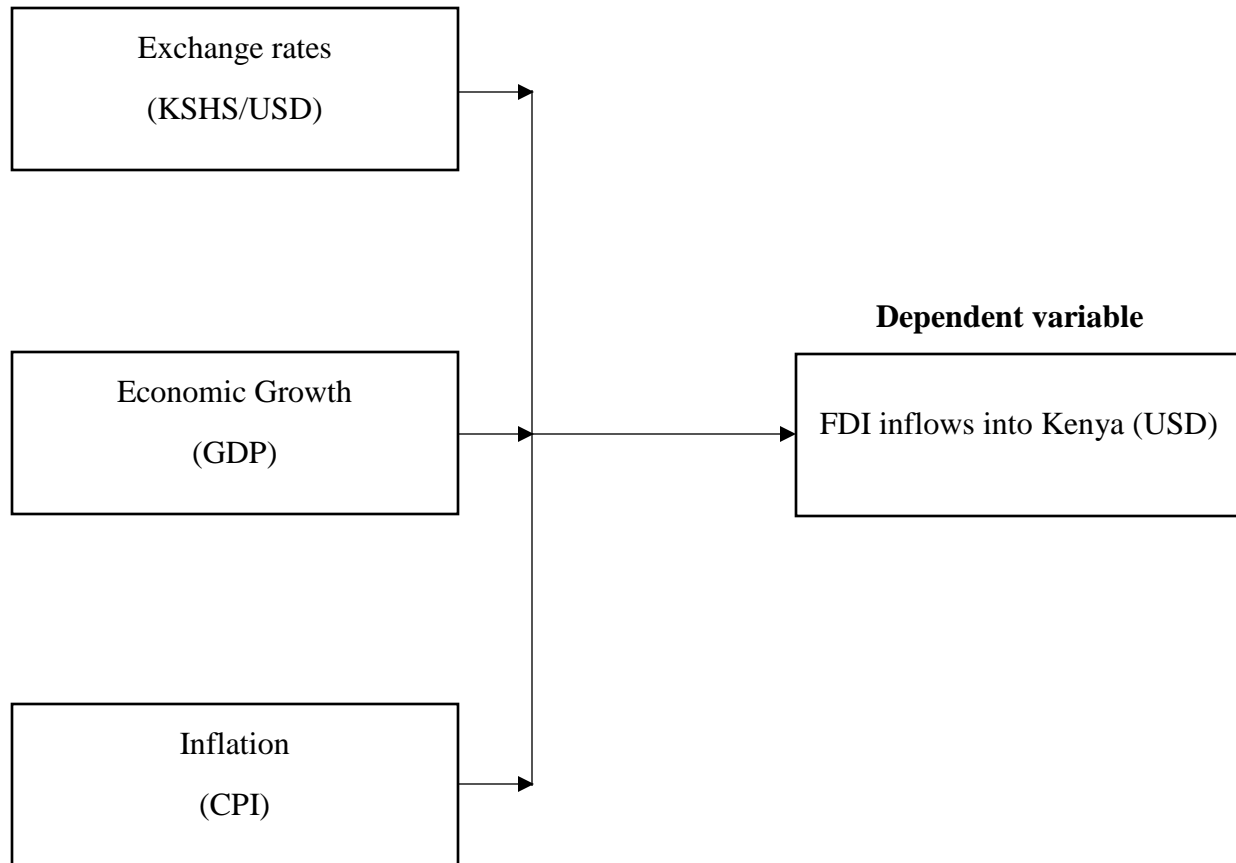


Figure 2.1: Conceptual Framework

Based on the conceptual framework (Figure 2.1) presents FDI remittances into Kenya as the dependent variable, while exchange rate, economic growth proxied by GDP and inflation are independent variables. While literature indicates that movement in exchange rates could have an impact on FDI inflows, the study considered the inclusion of economic growth (GDP), and inflation which according to literature, may also influence FDI. For example, Lim (2001) hypothesized that a rapid economic growth rate provides expanded profitable opportunities than economies experiencing lower economic growth. Mishkin and Eakins (2009) observed similar results where they argued that GDP was positively related to FDI. Similarly, Kadongo (2011) argued that a high level of inflation is a manifestation of tensions in the macroeconomic climate

of an economy and hence risk averse foreign investors may be reluctant to commit their investment in such an environment.

2.6 Summary of Literature and Knowledge Gaps

The link between exchange rate fluctuations and Foreign Direct Investment across the World has been examined extensively. Both theoretical and empirical evidence argue that exchange rate movements have an impact on FDI. However, literature is inconclusive on the nature of this impact. For example, some studies indicate strong positive associations (Vernon, 2006; Goldberg, 2006; Osinubi & Amaghionyeodiwe, 2010; Parajuli, 2012; Mwema, 2013) while other studies argue that exchange rates and FDI have insignificant positive correlation (Ndung'u, 2001; Otieno, 2012). Still, other authors have found that the two variables are negatively correlated (Ariel & Gita, 2014; Chirra, 2009; Sifunjo & Mwasaru, 2012; Kibe, 2015).

Furthermore, the findings from limited studies conducted in the Kenyan are inconsistent. For instance, while Cooper (2014) and Otieno (2012) established a positive correlation, Chirra (2009), Sifunjo and Mwasaru (2012) found a strong and negative correlation between the two variables. Arising from these inconsistencies, is this study which sought to fill these gaps. Apart from examining the inconsistencies, the study went further to add to the growing literature in this study area.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The third chapter explains procedures to be adopted to investigate the research problem “the impact of exchange rate movements on the Foreign Direct Investment in Kenya.” This comprises of research design, data type (s) and sources, analytical model and data analysis.

3.2 Research Design

This is a strategy adopted by the study to respond to research question (Orodho, 2009). A correlation research will be adopted to explain the effect of exchange rate movements on FDI. Kothari (2004) noted that this design seeks to explain the situation being studied. Hence, the design will be instrumental in describing the correlation between the two variables in focus (exchange rates and FDI).

3.3 Data Type and Data Collection Instruments

The study used secondary data on real effective exchange rates (REERs), FDI, GDP and Inflation. This was annual data for a period of 47 years (1970-2016). Data was obtained from the Central Bank database, Kenya National Bureau of Statistics, economic surveys, statistical abstracts, UNCTAD reports and World bank data base.

3.4 Data analysis

The analysis of data was aided by MS Excel and Stata computer software. MS Excel was used to analyse descriptive statistics, while the impact of exchange rate on FDI was analysed through regression analysis of equation 1 using Stata 2014. To predict the nature and the significance of the link between exchange rates and FDI, coefficients of the regression and p-values were interpreted.

3.5 Diagnostic tests

Various diagnostic tests were employed to ascertain the validity of results. First, Variable inflation factors (VIF) will be used to check for multicollinearity. Secondly, the study carried out ordinary least square regression with robust standard errors to correct for heteroscedasticity (problem of unequal error variance)

3.6 Analytical model

With reference to the conceptual model, the study analysed the following regression equation:

$$(FDI)_t = \alpha_0 + \beta_1(REER)_t + \beta_2(GDP)_t + \beta_3(INF)_t + \varepsilon_t \dots\dots\dots (1)$$

Where;

- | | |
|--|-----------------------------------|
| α_0 – y intercept (constant) | INF-Inflation |
| β 's -Coefficients to be estimated | REER-Real Effective Exchange Rate |
| GDP-Gross Domestic Product | ε_t -Error term |
| FDI-Foreign Direct Investment | t-time if years |

3.6.1 Measurement and Parameterization

Table 3.1 presents measurements and parameterization of variables.

Table 3.1: Description of Variables

Variable	Description /measurement	Expected sign of the coefficient
FDI	Annual Foreign Direct Investment inflows into Kenya in USD was used	Dependent variable
GDP	Annual Gross Domestic Product will be employed	A positive sign
INF	Inflation =General increase in price level which is measured annually using Consumer Price Index (CPI).	Negative sign
REER	Real Effective Exchange Rate = this is Kenya's weighted average exchange rate of Kshs/USD adjusted for inflation. REER was given	Negative sign

Source: Researcher

3.6.2 Test of Significance

The study employed some tests to ensure that the results are not biased. Correlation coefficient (r) was used to ascertain the strength of the link between the dependent and independent variables. In addition, coefficient of determination, R^2 , was used to explain the percentage of variation in the exchange rate fluctuations explained by independent variables. Furthermore, F-test was used to test statistical significance at 1%, 5% and 10%.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter four of the report details findings and discussions of the study. The first part of the chapter presents descriptive statistics of the study, while the second part, presents findings and discussion of the regression analyses.

4.2 Descriptive Statistics

Various descriptive statistics are presented in this section of the report. These includes time plots for all variables, summary statistics, and variable correlation statistics. Time plot graphs show the trend of variables for selected years within the study period (1970-2016). Summary statistics on the other hand includes: means, standard deviations, minimum and maximum values of the variables. Finally, correlation results predict the likely relationship between the dependent variables (FDI) and the independent variables (REER, GDP and INF).

4.2.1 Time Plot for Foreign Direct Investment

Figure 4.1 presents the time plot for FDI

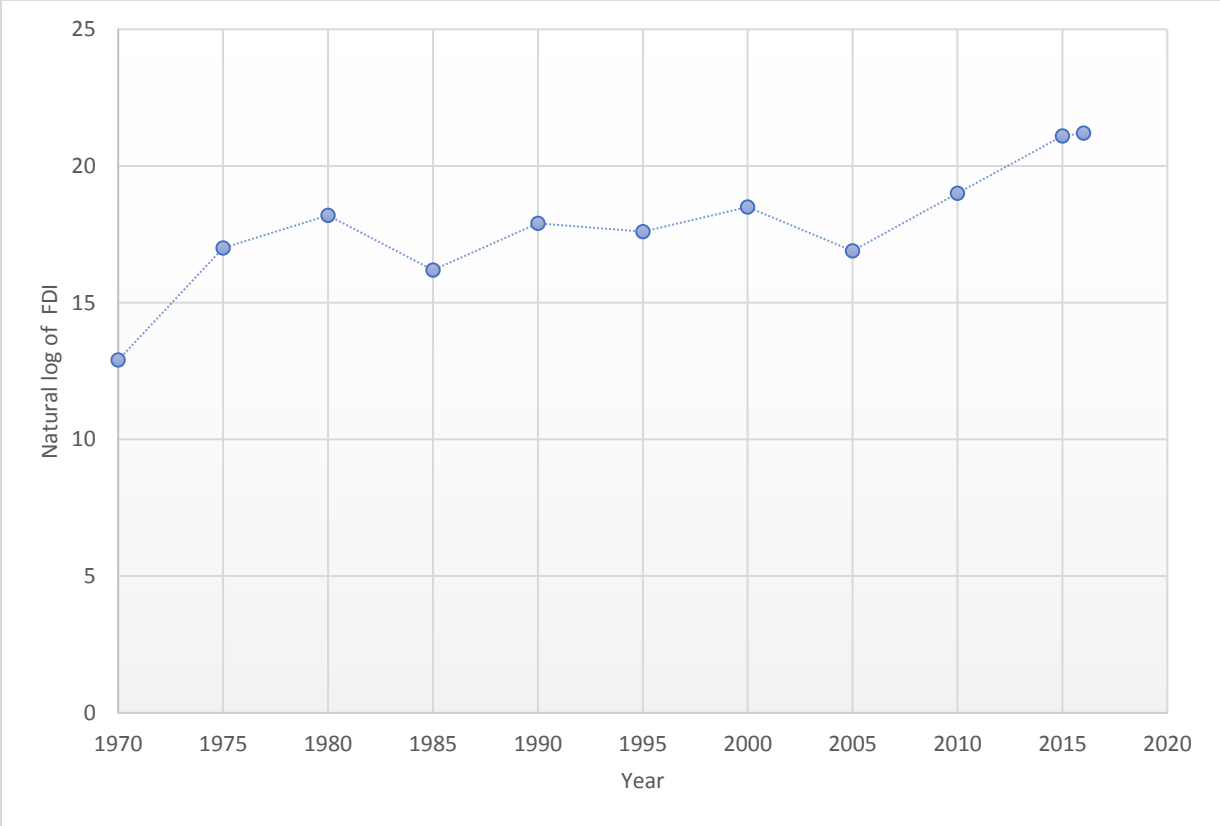


Figure 4.1: Natural logarithm of FDI for Selected Years

Source: Author computation from Research data

Figure 4.1 show that FDI inflows for Kenya have been fluctuating throughout the study period. Even though there has been periods of highs and lows, the general view is that there has been an improvement in FDI throughout. Despite the challenges that Kenya faced between 2007 and 2010, FDI inflows were not affected. In fact, there was a steady increase in FDI during this period.

4.2.2 Time Plot Real Effective Exchange Rate

With regard to REER in Figure 4.2, presents its time plot. According to these findings, real exchange rate has experienced a steady increase through the study period. The lowest REER was witnessed in 1970, while the highest was seen in the year 2016. Between 1970 and 1980, there was constant REER. In addition, between the year 2000 and 2005, Kenya's exchange rate remained constant. This could be attributed to stability in other macroeconomic variables due to investor confidence when National Rainbow Coalition government took power.

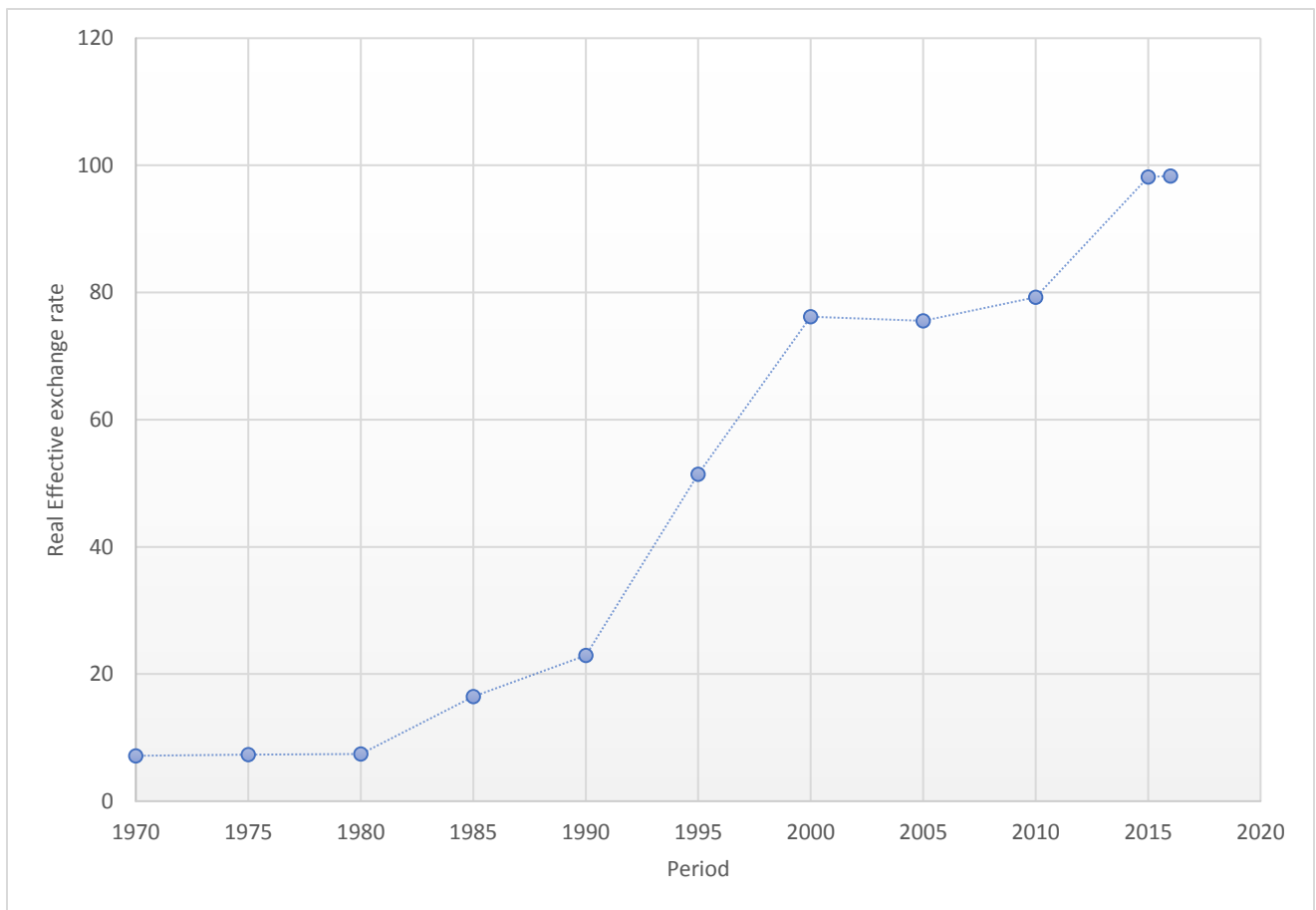


Figure 4.2: Real Effective Exchange Rate for Selected Years

Source: Author computation from Research data

4.2.3 Time Plot for Gross Domestic Product

Figure 4.3, presents a graph of Kenya's GDP movement since 1970's up to the year 2016. This graph indicate that GDP for Kenya has been increasing over time, with an increase in the level of economic activities. There was dismal performance in 1970's which could be attributed to the world oil crises of that time.

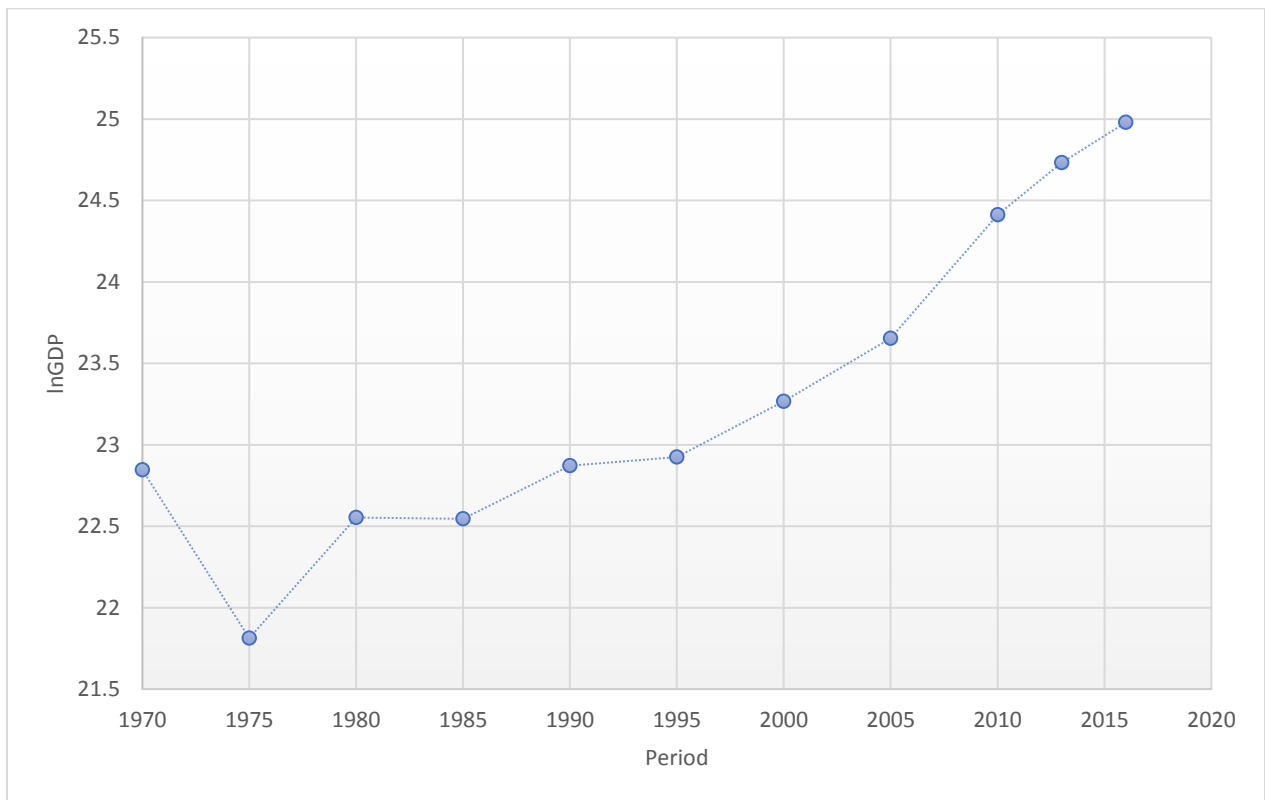


Figure 4.3: Natural logarithm of GDP for Selected Years

Source: Author computation from Research data

4.2.4 Time Plot Inflation

Regarding the time plot for inflation, Figure 4.4 indicate that Kenya's level of inflation has largely been fluctuating throughout the study period. Inflation was highest in 1993, a situation which could be attributed to Kenya's financial crisis following IMF and World Bank suspension of funding due to corruption. The lowest level of inflation was recorded in the year 1970 according to these findings. In addition, inflation remained largely constant between the years 2000 to 2005.

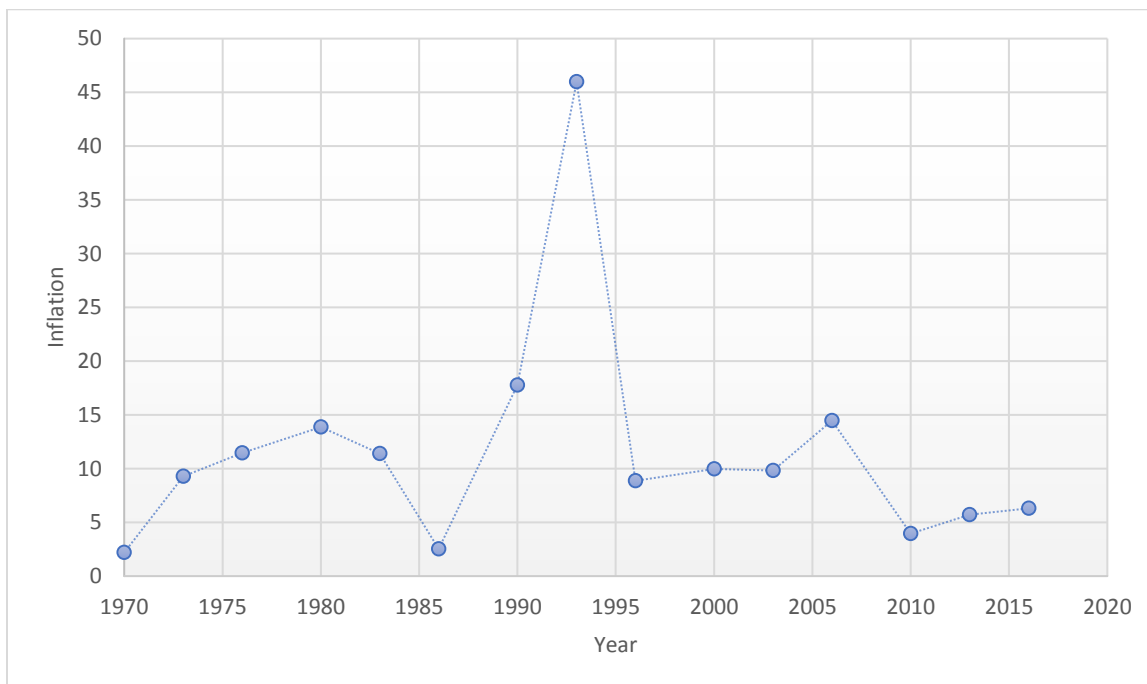


Figure 4.4: Inflation for Selected Years

Source: Author computation from Research data

4.2.5 Summary Statistics

Table 4.1 shows means, standard deviation, minimum and maximum values of the variables used in the study.

Table 4.1 Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI	47	1.53	3.34	0.394	15.5
REER	47	44.36	32.70	7.020	98.34
GDP	47	171	182	16.00	705.00
INF	47	11.98	8.16	1.55	45.978

Source: Author computation from Research data

According to the statistics presented in Table 4.1, the mean of FDI inflows was 1.53 US\$ in millions and it oscillated between a maximum of 15.5 US\$ and a minimum of 0.394US\$millions with a standard deviation of 3.34 US\$ in millions throughout the study period. The highest REER for this period was 98.34 while the lowest was 7.020384 with the mean of 44.36634 and standard deviation of 32.7006. The mean GDP during the period under study was 171 US\$ in millions with standard deviation of 182 US\$ in millions. Accordingly, GDP oscillated between 705 US\$ and 16 US\$ in millions during this period. Finally, the mean INF was 11.98783 with standard deviation of 8.16 and ranged between a maximum of 45.97and a minimum of 1.55.

4.2. 6 Correlation Statistics

Concerning correlation results, Table 4.2 presents a correlation matrix.

Table 4.2: Correlation Matrix

	lnFDI	REER	lnGDP	INF
lnFDI	1.0000			
REER	0.5891	1.0000		
lnGDP	0.6846	0.8760	1.0000	
INF	-0.1117	-0.1304	-0.1410	1.0000

Source: Author computation from Research data

Table 4.2 shows correlation coefficients of the four study variables. These statistics indicates that FDI is highly and positively correlated with REER and GDP. In addition, these statistics indicate a weak and negative correlation between FDI and INF. Furthermore, REER is highly and positively correlated with GDP, and negatively correlated with INF. Moreover, these findings indicate that INF has a weak and negative relationship with REER and GDP.

4.3 Regression Analysis

The aim of this study was to establish the effect of exchange rate movements on Kenya's FDI.

The study used FDI inflows as dependent variable and REER as the independent variable. Apart from FDI and REER, INF and GDP were incorporated as control variables in the study.

therefore, to measure the effect of REER on FDI inflows, the study regressed in equation 1:

$$(FDI)_t = \alpha_0 + \beta_1(ER)_t + \beta_2(GDP)_t + \beta_3(INF)_t + \varepsilon_t$$

Ordinary Least Square (OLS) regression was employed in this study. Before running the regression, the study investigated whether variables had normal distribution using Skewness and Kurtosis tests. The results for this test are presented in Table 4.3

Table 1.3: Skewness and Kurtosis

Variable	Skewness	Kurtosis
FDI	1.23	2.57
REER	0.12	1.35
lnGDP	1.57	4.3
INF	1.85	7.94

Source: Author computation from Research data

For a variable to be normally distributed, the test value for Skewness must be within the range of -2 and +2, and for Kurtosis -3+3. Based on this criterion, the results presented in Table 4.3 indicates that all variables passed Skewness normality test. However, GDP and INF variables failed Kurtosis test for normality.

In OLS regression, the study considered two key challenges likely to affect the estimates. These were: multicollinearity or correlation of explanatory variables and the problem of unequal variances (Heteroscedasticity). The study applied robust standard errors to OLS regression to overcome the challenge of heteroscedasticity following Williams (2015). With regard to multicollinearity, Variable Inflation Factors (VIF) were computed post the regression to ascertain whether the regression suffered from this challenge. VIF values greater than 10 and 1/VIF values less than 0.10 is an indication of the presence of multicollinearity. Summary of findings for VIF are presented in Table 4.4.

Table 4.4: Variable Inflation factors

Variable	VIF	1/VIF
lnGDP	4.31	0.231905
REER	4.30	0.232587
INF	1.02	0.979918
Mean VIF	3.21	

Source: Author computation from Research data

According to these findings, VIF values for all variables are less than 10, and 1/VIF values are greater than 0.10. This therefore confirms that OLS estimates did not suffer from multicollinearity problem.

Regarding regression results, Table 4.5 presents a summary of the findings. The regression equation was well fitted as indicated by Prob > F statistic which is 0.000, less than 0.05 confidence level. In addition, the R-squared statistic of 0.4694 means that a unit change in either REER, GDP or INF leads to a change in FDI by 46.94 percent. This imply that, the predictive power of explanatory variables was high.

Table 4.5: Ordinary Least Squares (OLS) results

FDI (inflows)	Robust			[95%		
	Coef.	Std. Err.	T	P>t	Conf	. Interval]
REER	-.002161	0.0133	-0.16	0.872	-.029100	.0247787
lnGDP	1.132048**	0.395	2.86	0.007	3339188	1.930177
INF	-.0029831	.0273684	-0.11	0.914	-.058176	.0522106
_cons	-8.380294	8.453962	-0.99	0.327	-25.4293	8.668745
Number of obs	47					
Prob > F	0.0000					
R-squared	0.4694					
F (3, 43)	20.57					

**Significant at $P < .05$

Source: Author computation from Research data

4.4 Discussion of Findings

Estimated results of the effect of exchange rate movements on FDI presented in Table 4.5 show that the two variables are negatively correlated. However, this relationship is not significant at the three levels of significance (1%, 5% and 10%). Furthermore, the impact of REER on FDI is very weak. This is indicated by the size of REER coefficient (0.002161) which imply that a unit change in the real effective exchange rate leads to a 2.161 percent reduction in the FDI inflows into Kenya. Exchange rates can sometimes create uncertain conditions which could make foreign investors reluctant to commit their investments in an economy. This is not a situation in Kenya, at least going by these findings, since the results are not significant. Several studies have found a significant relationship (Semere, 2012; Parajuli, 2012; Goldberg, 2006). These studies argue that

changes in the exchange rate leads to uncertainty in the business environment, a situation which is not ideal for investment. Thus, most investments could decline or reduce their amount of investment in the country like Kenya where exchange rates are not predictable. Nevertheless, other studies have established that exchange rate movements are good for the economy (Osinubi & Amaghionyeodiwe, 2010; Sifunjo & Mwasaru, 2012; Juthathip & Archanun, 2013; Cooper, 2014). These authors have stated that depreciation of the domestic currency leads to massive inflow for foreign assets as a result of decline in the cost of doing business and hence implying that the movements in exchange rate is healthy to economy. The limitation of these studies was that, they based their argument on domestic currency depreciation and not fluctuations in exchange rate.

A part from REER, the study incorporated GDP, and INF as control variables. According to the estimates, GDP is positively related to FDI. Just like REER, GDP is also significant at 95 percent confidence level. However, unlike REER, GDP-a proxy for economic growth has a strong effect of FDI inflows into Kenya, given the size of its coefficient (1.132048), which means that a unit increase in GDP leads to 113.048 percentage increase in FDI. These findings could imply that increase in economic growth attracts foreign investors into Kenya. This occurrence could be attributed to improved business climate which occasions more business activities. Similar findings have been observed by several studies. For example, Aoki (2007) and Cooper (2014) argued that enhanced economic activities comes with profitable business opportunities to investors as opposed to those economies experiencing lower economic growth. Ariel and Gita (2014) in their study for sub-Saharan African countries found the same results.

With regard to inflation, the study has established that this variable was negatively correlated to FDI. This implies that high inflation rates would discourage foreign investors into the country and

hence lowering the level of FDI inflows. However, INF was not significant in the model. In addition, despite inflation not being significant, the size of its coefficient (-.0029831) indicated a weak relationship with FDI. These revelations could be a departure from the economic theory which holds that high inflation rates are an indication of poor economic environment and hence, inflation is expected to have a significant effect on FDI as asserted by Kadongo (2011).

CHAPTER FIVE: SUMMARY, CONCUSSION AND RECOMMENDATION

5.1 Introduction

This study sought to investigate the effects exchange rate movements on the Kenya's foreign direct investment. Therefore, this chapter presents the findings and conclusions made regarding observations of the study. In addition, recommendations based on the results of the study are also discussed. Finally, limitations of the study and suggestion for further studies are explained.

5.2 Summary

The aim of this study was to investigate the effect of exchange rate movements on the foreign direct investments, focusing on Kenya. FDI inflows was measured in US dollars, and US\$ against Kenya shillings was the measure of REER. In addition, GDP-a measure for economic growth and inflation were incorporated into the model as control variables. GDP and inflation are important macroeconomic variables which could affect FDI.

The study employed ordinary least square method on a time series data for 47 years (1970-2016). This data was obtained from World Development Indicators (WDI) on Kenya, Kenya National Bureau of Statistics, Economic surveys, Statistical abstracts, UNCTAD reports and Central Bank database. In full view of the challenges associated with OLS which include endogeneity (multicollinearity) and heteroscedasticity (unequal error variances across observations), the study conducted various diagnostic tests to ascertain that the estimated coefficients are not biased. To control for heteroscedasticity, the study incorporated robust standard errors. On the other hand, Variable Inflation Factors test was conducted to check for the presence of multicollinearity. This test confirmed absence of multicollinearity.

The regression analysis results show that REER is negatively correlated with FDI, implying that movements in the exchange rate has harmful repercussions on FDI inflows into Kenya. However, this relationship was not significant. In addition, the impact of REER on FDI was found to be weak. This imply that an appreciation of the local currency could lead to decline in capital inflows. This scenario appears to be true for Kenya during the period under this study. These findings were inconsistent with several other studies which have found significant relationship. Several studies have found similar results. For instance, Goldberg (2006) observed that foreign exchange rates had a negative influence on the FDI. In addition, a study by Behera (2008) argued that exchange rates are very key in determining FDI since they contribute directly to unlikelihood of in the transaction plans of investors. However, a study by Cooper (2014) reports that, a depreciation in the local currency leads to an increase in capital inflows which takes advantage of weakening local currency.

Regarding GDP, the study established a positive linkage with FDI. The coefficient of GDP was also found to be significant at 95 percent confidence level. Economic growth as measured by GDP reflects a healthy business environment and thus, enhancement of this environment seem to resonate well with FDI inflows. Studies in both developing and developed countries have adduced similar evidence. For example, Cooper (2014) argued that, expansion of economic activities creates many economic activities which leads to attraction of foreign investors. In addition, s study by Aokin (2007) found that growth in economic growth was strongly related with foreign direct investment.

Finally, the study observed a negative relationship between inflation and FDI inflows in Kenya. This imply that high inflation rates lead to the decline in FDI inflows. However, this relationship was insignificant, and therefore, it contradicted the commonly held knowledge that inflation is a

key determinant of other macroeconomic factors. These findings are contrary to other findings. For instance, a study by Kadongo (2011) reported that inflation was negative and significant determinant of FDI. While noting that high inflation levels reflect poorly on the macroeconomic environment and therefore, less attractive to the foreign investors. Most investors will therefore be hesitant to commit their investments in a country where the levels of inflation are either high or uncertain. In another findings, Nwankwo (2006) underscored that instability in prices in the entire continent of Africa, blame for the deflection of FDI flows from Africa. He noted that poor policies (monetary and fiscal) bring about unsustainable budgetary deficits, and therefore, high inflationary pressures increase production costs in the local economy and hence exchange rate instability.

5.3 Conclusion

This study had sought to examine the effect of exchange rate fluctuations on the Kenya's foreign direct investment inflows. Based on the findings, subsequent discussion and summary, the study makes the following conclusions. First, movements in the exchange rates are not harmful to the FDI inflows into Kenya. This means that real effective exchange rate is not a key determinant of foreign direct investment. Secondly, the study concludes that economic growth explains FDI positively. This implies that good economic performance creates a conducive environment for FDI inflows in Kenya. Finally, even though the study established a negative relationship between inflation and FDI inflows, this variable was insignificant. This means that inflation may not be a threat to FDI in Kenya.

5.4 Recommendations

The role of FDI towards economic growth and development is not in doubt. There is evidence of the fluctuations in FDI inflows into Kenya which could be explained by other macroeconomic variables such as employment, inflation, GDP and interest rate. Based on the findings of the study,

this paper makes two recommendations. First, since there is a negative relationship between exchange rate fluctuations and FDI, it will be prudent for Kenya to ensure exchange rate stability through the management of both fiscal and monetary instruments despite the fact that REER was not significant.

Secondly, the study established a strong and positive relationship between FDI and GDP. It is therefore important for Kenya's economic machinery to ensure a steady growth in the economy so as to reap the fruits of FDI. This can be achieved by creating a conducive business environment to encourage investment through fiscal and monetary tools. The government could also stimulate consumption and promote export trade as a way of realizing this goal.

5.5 Limitations

This study had one key limitation, lack of data on important key control variables such as legal framework, data on wages, security and measures of political instability. These are very critical factors when it comes to business climate and investor confidence. Had these variables been included, maybe the results could have been different. For instance, stable political climate and good regulated business environment, could encourage foreign investment inflows despite exchange rate fluctuations.

5.6 Suggestion for Further Studies

Contrary to several studies which found a negative and significant relationship between FDI and REER, this study could not establish this significance. A further study is therefore necessary to delve deep into the challenges which could have led to these findings. This study should also control for more variables such as interest rate, cost of human capital, legal framework, and political stability which are likely to have an impact on the Kenya's investment climate.

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Appendix I: Data

Year	REER	GDP (USD)	INF	FDI (million Kshs)
1970	17.7471	8.36E+09	12.264963	
1971	7.14286	1.60E+09	2.188527	13.8
1972	7.14286	1.78E+09	3.7802061	7.4
1973	7.14286	2.11E+09	5.8316447	6.3
1974	7.0203837	2.50E+09	9.2811942	17.26
1975	7.1348111	2.97E+09	17.809948	23.42
1976	7.3431933	3.26E+09	19.120184	17.16
1977	8.367145	3.48E+09	11.44903	46.37
1978	8.2765608	4.49E+09	14.820964	56.55
1979	7.7293833	5.30E+09	16.931782	34.41
1980	7.4753092	6.23E+09	7.9793526	84.01
1981	7.4201875	7.27E+09	13.858181	78.97
1982	9.0474983	6.85E+09	11.603053	14.15
1983	10.922325	6.43E+09	20.666715	13
1984	13.311517	5.98E+09	11.397783	23.74
1985	14.413875	6.19E+09	10.284098	10.75
1986	16.432117	6.14E+09	13.006566	28.85
1987	16.225742	7.24E+09	2.534276	32.73
1989	16.454492	7.97E+09	8.6376732	39.38
1990	20.572467	8.28E+09	13.789317	0.39
1991	22.914767	8.57E+09	17.781814	62.19
1992	27.507867	8.15E+09	20.084496	57.1
1993	32.216833	8.21E+09	27.332364	18.8
1994	58.001333	5.75E+09	45.978881	6
1995	56.050575	7.15E+09	28.814389	2
1996	51.429833	9.05E+09	1.5543282	4.3
1997	57.114867	1.21E+10	8.8640874	33
1998	58.731842	1.31E+10	11.361845	10.54714173
1999	60.3667	1.41E+10	6.7224365	53
2000	70.326217	1.29E+10	5.7420011	11.41357735
2001	76.175542	1.27E+10	9.9800252	13.82186242
2002	78.563195	1.30E+10	5.7385981	110.9046111
2003	78.749142	1.32E+10	1.9613082	5.302622602
2004	75.935569	1.49E+10	9.8156906	27.61846167
2005	79.173876	1.61E+10	11.624036	81.73820975
2006	75.554109	1.87E+10	10.312778	46.06391753
2007	72.100835	2.58E+10	14.453734	21.21162187
2008	67.317638	3.20E+10	9.7588802	50.67465271
2009	69.17532	3.59E+10	26.239817	1107.518985
2010	77.352012	3.70E+10	9.2341259	488.0400952
2011	79.233152	4.00E+10	3.9613889	1491.27689

2012	88.81077	4.20E+10	14.02155	1197.553425
2013	84.529602	5.04E+10	9.3783959	1450.474222
2014	86.122879	5.51E+10	5.7182741	1380.173691
2015	87.922164	6.15E+10	6.8774981	1118.824782
2016	98.178453	6.38E+10	6.5824109	820.9372987