

**THE EFFECT OF FOREIGN EXCHANGE RATE VOLATILITY ON
KENYAN EXPORT TRADE**

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DECLARATION

This research project is my original work and has not been presented to any other University or College for academic purposes.

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Signature..... Date.....

This research project has been submitted for examination with my approval as the University supervisor.

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Signature..... Date.....

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DEDICATION

This work is dedicated to my caring husband, who taught me that even the largest task can be accomplished if it is done one step at a time, and to my parents, who passed on a love of reading and respect for education.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
DEDICATION.....	iv
LIST OF TABLES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT.....	ix
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Export Trade	2
1.1.2 Exchange Rate Volatility	3
1.1.3 Effect of Exchange Rate Volatility on Export Trade.....	3
1.2 Research problem.....	4
1.3 Objectives of the study.....	6
1.4 Value of the study	6
CHAPTER TWO: LITERATURE REVIEW.....	7
2.1 Introduction.....	7
2.2 Theoretical Review	7
2.2.1 The Mundell Fleming Model	7
2.2.2 The Balassa Samuelson Model	7
2.2.3 Inflation Rate Differential/ Purchasing Power Parity Theorem.....	8
2.2.4 International Fisher Effect	9
2.3 Determinants of Export Trade	10
2.3.1 Domestic Transport Infrastructure	10
2.3.2 Foreign Exchange Rate Fluctuations	10
2.3.3 Inflation.....	11
2.3.4 Foreign Direct Investment	11
2.3.5 Macro Economic Environment	12
2.4 Empirical Review.....	12
2.4.1 International evidence on effect of exchange rate volatility on export trade	12
2.4.2 Local evidence on effect of exchange rate volatility on export trade	14

2.5 Conceptual Framework.....	15
2.6 Summary of Literature Review.....	15
CHAPTER THREE: RESEARCH METHODOLOGY	17
3.1 Introduction.....	17
3.2 Research Design.....	17
3.3 Data Collection	17
3.4 Data Analysis	18
3.4.1 Analytical Model	18
3.4.2 Test of Significance	19
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION	20
4.1 Introduction.....	20
4.2 Descriptive Statistics.....	20
4.3 Correlation and Regression Analysis	21
4.3.1 Correlation Coefficients.....	21
4.3.2 Goodness of Fit Statistic	22
4.3.3 Regression Model	22
4.4 Interpretation of the findings	24
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	26
5.1 Introduction.....	26
5.2 Summary	26
5.3 Conclusions.....	26
5.4 Policy Recommendations.....	27
5.5 Limitations of the Study.....	28
5.6 Recommendations for further Research.....	28
References.....	29-31
Appendix 1.....	32

LIST OF TABLES

4.1 Descriptive Statistics.....	20
4.2 Pearson Correlation Matrix.....	21
4.3 Goodness of Fit.....	22
4.4. Regression Coefficients	23

LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
CBS	Central bureau of Statistics
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IFE	International Fisher Effect
IS-LM	Investment Savings - Liquidity Preference Money supply Model
MASD	Moving Average Standard Deviation
PPP	Purchasing Power Parity
UNCTAD	United Nations Conference on Trade and Development
US	United States

ABSTRACT

The Kenyan export sector is a key contributor to the country's economic performance. The markets for Kenya's exports are majorly the United States of America and Europe. The currencies for these countries are the dollar and the Euro respectively. These being different currencies therefore, the issue of foreign exchange rate present itself since exports from Kenya are given a value in-terms of the market to which the products are destined. Kenya operates a floating exchange rate system where the exchange rate is determined by forces of demand and supply for the local currency (Kshs). With this in mind therefore, the value of the Kenyan shilling is never constant against the currencies of its export market. The exchange rate and the export market cannot be looked at independently and therefore the researcher is keen to establish the role of inflation and foreign direct investments as a percentage of GDP in the export trade and their relationship to the exchange rate. The objective of this study was to determine the effect of exchange rate volatility on Kenyan export trade. To achieve this objective, monthly export earnings were obtained from the central bank and analyzed together with monthly exchange rate movements (Kshs Vs USD) that were obtained from the central bank for the period January 2011 to December 2015. The model adopted for this study included monthly inflation indices and Monthly foreign direct investment as a percentage of GDP statistics to derive a wholesome idea of how these factors affect or relate to Kenyan export trade. Multiple Linear regression was employed to determine the relationship between the export trade earnings and foreign exchange rates, inflation indices and FDI as a percentage of GDP for the period 2011-2015. From the findings of this study, it is concluded that the exchange rate is associated to export trade in Kenya with a Pearson correlation of 73%. This means that the movements in foreign exchange rates affect largely export trade in Kenya. The government of Kenya needs to come up with mechanisms to cushion the export sector from these shocks amidst other factors that affect the export industry. The central Bank and particularly its policy makers should create an enabling environment to sustain a stable exchange rate system that is resistant to external shocks occasioned by movements in foreign currencies. It's also important for the government to diversify its exports to these foreign markets besides boosting the export sector by offering tax incentives and subsidies that will reduce production and export costs. As relates to further research, other studies should be carried out to establish the effect of other factors such as domestic transport infrastructure, institutions among others. Also a longer period of time say 10 years can be considered in another study to capture more seasons of economic significance such as booms and recessions to establish if the findings will be consistent or not with those of this study.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Kenya is largely dependent on the agricultural sector as a basis for its growth economically, employment creation and generation of exchange rate. It is also a participant in the international markets through its export trade where it exports horticultural crops, tea, and coffee among others. The objective of the researcher was to apprehend how the volatility in foreign exchange rate affects exports trade in the Kenyan market. Volatility is described as the extent of change in a variable over time, Exchange rate volatility can be defined as the situation in which the value of the country's currency keeps changing when compared to other currencies (Steven Suranovic, 1997) This is contributed to by a number of factors which are linked to the demand and supply for a currency Vis a Vis the comparable currency in question. Volatility in exchange rates mainly occurs in a floating rate exchange rate system. In this system the worth of the money is established at an equilibrium point of demand and supply for the money.

A relationship exists between the rate of exchange of a country's currency and its trade and industry growth this relationship remains vital from both a descriptive and policy perspective. Edwards (1994) in his study says that it is not an exaggeration to say that the behaviour of the currency conversion rate has an essential role in the strategic plan. One determinant of a nations growth in cross-border trading is its exchange rate and this shows the degree of its competitiveness globally (Bah and Amusa, 2003).

Kenya has operated in the fixed exchange rate system as well as a floating exchange rate systems Despite Kenya adopting a fixed exchange system between 1966 and 1990 followed by a floating exchange rate system from 1993 (Ndung'u, 2000), the country has been experiencing sudden movements in foreign currency rates in certain periods yet export earnings have been gradually increasing (Kevin, 2007). The export market provides revenue to the economy and also substantial employment and it has contributed to the upgrading of agricultural production skills.

1.1.1 Kenyan Export Trade

Kenya has participated in the export market for a long time for both its domestic and export market. The country has ideal tropical and temperate climatic conditions that make it favourable for the exports such as coffee, tea and horticulture among other exports. The Kenyan export industry has experienced rapid growth for a long time owing to the active involvement of the private sector in the industry and the minimal government interference experienced. Europe forms the largest market for Kenya's exports (Nyangweso et al 2004) Kenya generates high revenue in foreign exchange earnings as a result of a reliable and vibrant private sector that has been at the fore front in marketing the nation's products to markets abroad.

Total export earnings from Kenya's export trade have historically tended to have an inverse relationship with movements in the exchange rate, although the trend is obscured by changes in volumes from year to year (Kiptui, 2008). Under the floating exchange rate regime, the fluctuations in world prices of exports strongly affect export earnings therefore, a higher demand or a decrease in supply which causes appreciation of foreign currency, makes export earnings decline (Akila, 2004).

Agriculture, being the bed-rock of Kenya's exports contributes a substantial amount of its export earnings and this provides foreign exchange that is needed by the country. From the period ranging 1990 to 2001, the average contribution was 60 with a variation between 50 and 62 percent depending on the performance of the agricultural crops. This movement has since improved through the years to hit highs of 65-70 percent. The main contribution to Kenya's export earnings are coffee, tea, horticulture, pyrethrum and limited livestock products. Kenya's export earnings mainly relies on rainfall and world prices of key commodities the country engages in exporting and also the policies domestically that affect the production and marketing of these commodities (Kiptui, 2008). The researcher analyzed monthly export trade earnings to be able to determine how it has been influenced as a result of exchange rate movements.

1.1.2 Exchange Rate Volatility

According to (Côte, 1994) fluctuations in exchange have adverse consequences on trade internationally this can either be through adjustment costs and uncertainty In the case where movements in exchange rates are not fully expected the agents who shy away from risk may cut down their business dealings if the currency value fluctuations increase. The belief of the existence of an undesirable affiliation between the rate of exchange movements and export trade is often used by those who support fixed exchange rates. In the instituting of the European Monetary Union, the argument put forth that there is a negative association between exchange rates Vis a Vis international trade is reflected as part of the main reason of existence of the European Monetary Union (EC Commission, 1990).

Exchange rate is a relative price. It is the channel through which international prices pass through to domestic prices. It may be described as the nation-wide relative price. In an economy like Kenya with a policy of floating exchange rate and a capital account of B.O.P that is liberal, the exchange rate and reserves generated from foreign trade are ancillary tools of fiscal strategy. Given such a policy framework, the central bank is concerned about exchange rate volatility. This concern emanates from the fact that the nominal exchange rate moves sharply in the short-term and can impact inflation via the import prices pass-through effects (CBK, 2015).

Different researchers have come up with varying conclusions regarding effects of exchange rate movements on export performance. Thursby & Thursby (1987) concluded that these effects are negative (Frankel, 1997. Et.al.) In their later studies established that there could exist both negative and positive effects In a survey conducted by McKenzie (1999) he concluded that exchange rate movements may behave differently in different markets directs that more tests need to be done using data that is particular to the market under study. This research study wanted to analyse the Effects of foreign exchange volatility on export trade in Kenya. This volatility was measured by looking at the average monthly percentage increases or decreases in exchange rates over the period of study.

1.1.3 Effect of exchange rate volatility on export trade

There exists a wide acknowledgement of the part played by exports in development of an economy. The growth of a country is stimulated in several ways such as by the export activities such as economies of scale due to international markets that are large and diverse, demand linkages, improved efficiency, powerful technology that are found in capital goods produced in foreign countries, human resource improvement and an increase in productivity via specialization (Basu et al., 2000).

The structure of Kenya's exports is mainly primary goods such as tea, coffee and horticulture products, the structure are what are mostly used in African countries. The dependence on primary supplies has made the export sector more vulnerable to the fluctuation in the country's currency against the foreign currency. The Central bank of Kenya's primary objective is to come up with and implement policies to ensure the price levels are stable. In order to realize steadiness in prices, the CBK administers a blend of indirect fiscal policy tools and mechanisms for example open market processes and legal requirements postulated by law. The overriding goal of monetary policy is maintaining price stability. Inflation being the constant increase in prices can devalue the Kenyan shilling and this will consequently lead to a decrease in the competitiveness of exports thereby decreasing the export earnings (CBK, 2013).

The current account balance mainly made up of exports and imports is one of the major determinants of the supply and demand of foreign exchange in Kenya. Mounting shortfall in the current account indicates depreciation on the exchange rate in the future owing to condensed supply of foreign exchange in the market (CBK, 2013). Coric and Pugh (2010), state that normally, exchange rate unevenness applies undesirable effects on intercontinental trade. Exporting firms may be more sensitive to foreign exchange fluctuations than domestic firms but this sensitivity is expected to be reduced by factors such as the presence of circumventing instruments, the existence of imported inputs, the existence of firms on the universal market where upward and downward actions of various exchange rates annul the likelihood of billing in the indigenous currency and the volume to take up losses occasioned by exchange rate variations and other dynamics in return precincts.

1.2 Research Problem

According to a study by Adubi (1999) foreign exchange rate movements have negative effects on agricultural exports. A number of studies and literature that looks at this relationship conclude that exchange rate movements create an imbalance in macroeconomics of export earnings achieved by a given country. It is therefore important that stringent management policies and exchange rate devaluation mechanisms are implemented to ensure that an equilibrium state is achieved.

The Kenya shilling depreciated in value against the dollar in the period under study from Kshs 89 per dollar to Kshs 113 per dollar. Looking at the Kenyan export market, the country's export earnings have been on the increase even though they have been low as compared to the set targets under vision 2030. Kenya still functions in a flexible exchange rate regime where the exchange rate is determined by forces of demand for the currency and supply of the same. Questions however, still exist spinning about the conceivable effects of the increase and decrease of the Kenya shilling real exchange rate contrary to key currencies on export returns. Studies conducted on the Kenyan economy in relation real exchange rate movements and its impact is not many as postulated by (Kiptui and Kipyegon, 2008). A reassessment was called by Pollin and Heintz (2007) with a goal of achieving a more depreciated Kenyan Shilling. A market based reform program was designed in order to increase economic growth and improve the investment environment prevailing according to Ndung'u, (2008). An exploration was allowed by the IMF's 2004 study on fluctuation of exchange rate instability and flow of trade into the effects of exchange rate movements, trade and export earnings. The study made a conclusion that there isn't a clear adverse association between collective exchange rate fluctuations and aggregate trade flows.

Kenya has strived to implement policies that have maintained an exchange rate that is competitive internationally and that has in effect kept the level of inflation at the lowest indices. The country through the central bank has conducted strict monetary policies that have been able to achieve and maintain positive interest rates. This is however not easy because of other macro and micro economic factors affecting the economy as a whole. This research study is therefore important as it examines fluctuations in the foreign exchange rate over a five year period (2011 - 2015) and analysing the effects of these fluctuations on Kenyan export trade (Otieno and Mudaki, 2011).

Studies done on exchange rate volatility and export market are inconclusive with respect to effects of foreign exchange rate volatility and export. Empirical studies piloted by scholars and economists backing - up hypothetical deliberations leave more or less vague indication of these effects. In his study, Taglioni (2005) indicates that it's customarily presumed that there is contrary effect of exchange rate fluctuations on export earnings but it's surely not great". This deduction is shared by Ozturk (2006). In his study, he comes up with an all-inclusive justification of the experimental reviews devoted to the influence of exchange rate fluctuations. In this study he concludes on a somewhat extensive combination of evidence, some in favor of while some contrary to the premise of an undesirable relationship concerning exchange rate fluctuations, trade and export earnings.

This study is keen to answer the question what is the effect of exchange rate volatility on Kenyan export trade?

1.3 Objective of the Study

To determine the effect of foreign exchange volatility on Kenyan export trade.

1.4 Value of the study

Existing and prospective exporters in Kenya will benefit by using the findings of this study in getting to know the effects of foreign exchange fluctuations on exports in the Kenyan market. Other students will be able to get information that can help them in their research to advance their research papers and projects respectively. The results can also be utilised by other stakeholders who include the government to develop coping mechanisms for similar challenges experienced and also to be able to come up with policies that will boost the industry. The information will guide these organisations in planning and will inform their strategies when coming up with such policies.

Other stake holders including export companies and the investors in this sector together with monetary authorities are keen on the movements of the exchange rate as it affects them and their businesses. It's important therefore that the behaviour of the exchange rate is understood since it is an important tool that can be used to indicate the performance of an economy (Otieno and Mudaki, 2011).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter an evaluation of the relevant literature pertaining to fluctuations in exchange rate on the Kenyan export trade is done. Volatility increase in the rate of has triggered theoretical studies and empirical studies which this chapter concentrate on.

2.2 Theoretical Review

The theories used in explaining foreign exchange rate movements are the Mundell-Fleming Model, Balassa-Samuelson model, Inflation Rate Differential and the International Fisher Effect

2.2.1 The Mundell-Fleming Model

The above model is also called the IS-LM-Bop model and is a model that was proposed by Robert Mundell and Marcus Fleming, it is and the IS-LM model extended. It majorly deals with autarky economies; The Mundell-Fleming Model describes a small economy that can trade with the outside world. The Model transformed the Keynesian theory from a closed economy model to an open model economy that produced policies that were. The model carries with it a lesson that is not the Keynesian lesson in regard to monetary policy being efficient and fiscal policy not being efficient (John weeks, 2009) The Mundell-Fleming model uses the output of an economy and the nominal rates of exchange to exhibit the association between them, The IS-LM model on the other hand in the short run will portray relationship between interest rate and the output. This theory has argued that an exchange rate that is fixed a monetary policy that is self-governing and a capital movement that is free cannot exist in an economy at the same time.

2.2.2 Balassa-Samuelson Model (B-S Model)

Balassa and Samuelson provided a definitive explanation as to why absolute purchasing power parity theory is flawed as a theory of rates of exchange. The theory was developed by Bela Balassa and Paul Samuelson in 1963 this theory is among the foundations of the traditional theory of real equilibrium rate of exchange. This theory put forward the notion that countries with high productivity are faced with high growth in wage hence high real

exchange. The Balassa-Samuelson Model stipulates, if wages in tradable goods sector in an economy increase it will have an effective increase in the non-tradable sector of the economy. The complementary increase in inflation will cause the rates to be higher in economies that grow fast, and lower in slower growing, economies. With time and increased productivity in the emerging economies the wages will increase in both tradable and non-tradable sectors of the economy. If the increase in wages is not commensurate to the productivity countries will end up producing more than they consume hence a current account surplus. If wage rate grows faster than productivity rate, more goods will be consumed by the workers hence the current-account surplus falls. What determines the real exchange rate and how it affects an emerging economy is the exchange rate regime of the country whether fixed or floating. If the regime is fixed there will be an increase in overall prices, while if there regime is floating there will be increase in the exchange rate (Akila, 2004).

2.2.3 Inflation Rate Differential / Purchasing Power Parity Theorem

This theory tries to measure the relationship of inflation and exchange rate. The theory was developed by Gustav Cassel in 1918. This theory is rooted on the law of one price which postulates, if transaction costs are not there goods that are identical should have the same price in different markets. Under the PPP theory there are two forms i.e. Absolute and relative PPP. The absolute PPP stipulates, without barriers in international trade demand for products shifts to where they can be achieved at the lowest price. If there's an inconsistency in prices measured by a mutual currency, the demand should move to allow for convergence of the price, otherwise arbitrageurs will take advantage of the price difference to make profits.

Prices will not be the same for the same basket of basket of products in dissimilar countries will not be the same even if measured in similar currency due to the possibility of imperfections in the market; the imperfections are things such as quota restrictions, costs of transportation, tariffs of different countries etc. But all in all it posits that the changing rate of the prices of the baskets should be almost alike when determined using the same currency only if the trade restrictions and the costs of transportation remain unchanged (Jeff Madura, 2011).

The PPP formula is expressed as the rate of inflation in the home market less the rate of Inflation in the foreign market divided by the inflation rate in the foreign market plus 1 and this expressed as percentage (Madura, 2011) i.e.

$$\text{Percentage change in the direct Quote} = \frac{(A-B)*100}{(B+1)}$$

Where: A is the inflation rate in the home market

B is the inflation rate in the foreign market

2.2.4 International Fisher Effect

In this theory interest rates as opposed to inflation rate differentials is used to explain the changes in exchange rate over a period of time. This theory has a close relation to the PPP theory because of the high correlation interest rates have with inflation. The theory is by Irving Fisher in the year 1930. This theory takes into account the different inflations in countries and argues that the nominal interest rates will differ due to this factor. It is the use of the fisher effect in two countries to come up with the expected change in the rate of exchange.

The difference in the nominal rate of two countries is caused by the change in exchange rates among the two countries if the real interest rate is the same in the two countries in. The theory suggests that differentials in interest rate can only exist if the exchange rate was to be altered in a manner that the loss occasioned by foreign exchange rate transactions is offset by the higher interest rate advantage

This theory suggests that where a currency has a high interest rate it is probable that it shall consequently have a high level of inflation. Investors in the home country will not therefore be interested in investing in interest bearing instruments in foreign countries as the effect of the rate of exchange could offset the advantage presented by the interest rates.

Even if the differential in nominal interest rates accurately reflects the differential in expected inflation rates, an exchange rate is influenced by other factors and not just inflation. The IFE formula is explained as the interest rate in the home market less the rate of interest in the foreign market expressed as a percentage divided by the interest rate in the foreign market plus 1 (Madura, 2011)

$$\text{Percentage change in the value of the direct Quote} = \frac{(A-B)*100}{(B+1)}$$

Where: A is the interest rate in the home market

B is the interest rate in the foreign market

2.3 Determinants of Export Earnings

There has been major research in the past decades into export earnings as this is regarded as one of the key indicators of economic performance, however there is no generally accepted concept. Some of the factors cited as the determinants of export earnings are as below.

2.3.1 Domestic transport infrastructure

The availability of roads, ports energy and telecommunication determine the size and growth of the supply capacity. The facilitation of transport internally plays a central role in all regions as it eases movement of the goods being exported and reduces the costs of doing so. The significance of this determinant is mostly seen within the exporters performing well. Therefore from the analysis the suggestion is that internal transport infrastructures are expected to play a crucial role in the early phase of the development of the export sector. It's important to note therefore that since most African countries export primary products such as coffee, tea, pyrethrum, horticultural products etc., these countries are in a position to better their export performance by investing more in their transport infrastructure

2.3.2 Foreign Exchange Rate Fluctuations

Kenya has faced massive blows like the terms of trade becoming worse mainly due to fluctuation in internal product prices, oil prices and fluctuation in flow of capital which have led to challenges in micro-economic management policy. According to the conclusions made by Otieno and Mudaki (2011) in his study, movements in the exchange rate account for the results attained as export earnings of the country in question. In the recent past, volatility in exchange rates have been on the rise and the volatility poses a challenges for macro management.

Kenya having concentrated on the agricultural exports has made itself vulnerable to external shocks which expose the economy to fluctuation in the prices of global commodities. To curb the external shocks the country requires the appropriate policies both fiscal and monetary, it also requires implementation of an exchange rate system that is flexible to curb surfacing

deficits in current account that cannot be sustained debt that is ever growing, current account deficits that cannot be sustained, increasing burden of foreign debt and constant losses of competitive advantage internationally (Mudaki, 2011). The appreciation of exchange rates has got policy makers and exporters often busy. There is need for a shift in the focus from these movements in exchange rates to measures that shield exporters against risks occasioned by these movements. For example policy makers should focus towards developing futures and forward markets. As a short term measure on the other hand appropriate monetary and fiscal policies geared towards smoothening short term capital inflows should be able to reduce the effects of the movements of the local currency.

2.3.3 Inflation

When prices are constant within a period of time or when they are appreciating at a rate that is knowable they are known to be stable. Inflation is said to exist when the prices go beyond the knowable rate. A deflation is said to be there when the prices are declining either way inflation or deflation are both detrimental to the performance of a country and the national's wellbeing. Since these effects are severe it therefore means price stability is a very important objective for any economy.

When a country faces inflation there's decline a country's Balance of payment due to the fact that inflation domestically brings about import spending, because imports tend to be comparatively cheaper, and reduces export sales, as exports appear more expensive abroad. High inflation that is not commensurate with nominal exchange rate creates a problem the result becomes real overvaluation of the exchange rate which hinders growth in exports and brings about ambiguity of movements in future in the exchange rate (Malcolm et al., 2000).

2.3.4 Foreign Direct Investment

Foreign direct investment stimulates a country's economic growth by opening the country to advanced foreign technology, employment of nationals domestically and also facilitates the host country's international trade. FDI comes with foreign interventions and therefore a country has to abide by good corporate governance follow the laid accounting policies and rules and legal regulations it also ensures governments do not pursue policies that are detrimental to the country (Feldstein, 2000).

FDI is a strong contributor to the change in the composition of exports; what a number of countries have experienced suggests that FDI is a strong contributor to the change of what makes up exports. A relationship that is positive and significant between performance of export and FDI contribution to the formation of capital is found at every levels of export performance. The performance of exports is affected positively by intersectoral diversifications within poor performers and intra-sectoral diversification between better performers

2.3.5 Macro-economic Environment

A real exchange rate that is overvalued is harmful to export performance thus a currency that is over-valued, occasionally due exchange rates that are fixed are used as nominal anchors in order to regulate inflationary pressures, leads to into a direct loss of price competitiveness for exporting firms. Markets that are capital intensive or markets whose products are differentiated have a stronger position in good export performers and face lower competition as compared to Markets that are labour intensive, this competition however may consider the small real exchange rates movement, but may focus on capital and the technological aspect of their product, but as for producers dealing with low skill intensive product that can be substituted readily and their demand fluctuates and is sensitive to prices this is not likely to be the case. (Fugazza, 2004).the export performance of good performers are affected by real interest rates which is a constituent in the movement of relative prices that steers the real exchange rates, coupled with high interest rates and rising cost of production thus having a negative influence on exports.

2.4 Empirical Review

The studies on effects of exchange rate volatility are reviewed under this section under international evidence and local evidence.

2.4.1 International Evidence on effect of exchange rate volatility on export trade

Jones and Kenen (1990) did a study on the relationship between exchange rate volatility and exports in Thai textile and garment industry using the GARCH model concluded that there exists a relationship that is between volatility in foreign exchange rate and the levels of export trade. A study also conducted on the effect of volatility in exchange rate in New Zealand and concluded that exchange rate volatility negatively impacts exports. Recently

further evidence have also concluded that there are negative effects of variability in exchange rate at the firm level which is also inconclusive because it does not still show reduction in total exports,.

Batten and Belongia (1984) conducted a study to help understand how the fluctuations in the foreign exchange rates have caused decline in the country's agricultural exports. From the findings of their study they concluded that these movements have negative effects on the country's agricultural exports. Fabiosa (2002) was keen to establish the relationship existing between the fluctuations in foreign exchange rates and the country's exports of swine and pork products. Fabiosa made a conclusion that here exists a positive relationship between the exports and the foreign exchange rate movements. He noted that more pork products were exported in the periods where there was depreciation of the country's domestic currency.

Obstfeld (2009), concludes that one of the things that cannot be explained about global microeconomic is the slight influence that large and substantial movements in exchange rate have on export ,the study concluded that that there's exists a small but influential impact of large exchange rate movement and consequently there`s a large disconnect between international exports and exchange rates.

Dimitrios and Paul (2011) in their paper about Impact of volatility of exchange rate on exports concluded that their results have been able to identify a varied relationship, which over time has demonstrated to be insignificant for all the cases under examination here, in this regards we agree with the studies that posits that volatility in exchange rate does not have a big effects on the total level of exports

In a study of 8 Latin American countries Arize, Osang and Slottje (2004) carried out a study on the impact of fluctuations in exchange rate on the flow of exports. The findings from this study indicated that exchange rate fluctuations exert adverse effects on the demand for exports and hence making export earnings decrease. In Ghana, Bhattarai and Armah (2005) in their study to examine the impact of exchange rate fluctuations on exports in South African they concluded there is a steady long run relationship between exports, imports and the exchange rate. They found out also that when the domestic currency weakens, that is devaluation; there is an impact on both imports and exports that is contractionary.

Takaendesa, Tsheole and Aziakpono (2010) in the study Real exchange rate instability and its effect on trade flows established robust proof that actual exchange rate movements have an undesirable influence on South Africa exports. Their outcomes offer supplementary proof of the harmful impact of real exchange rate variability on trade flows. One inference of the discoveries originates from the substantial affirmative effects of the exchange rate on exports. This outcome adds to the view that devaluation of the Rand will kindle exports and thus economic development. With this in mind therefore there is a chance for improvement to attractiveness of South African goods abroad. It's important to note however that the exchange rate needs to be prudently managed to safeguard a stable non-volatile performance that could impede export growth.

The influence of actual exchange rate variability on Kenyan horticultural exports, coffee and tea looked at in an export demand context was investigated by Kiptui (2008) who postulated that in the long run there is a relationship between exports, external economic activity, comparative prices and exchange rate variability. He used the Moving Average Standard Deviation (MASD) as a measure of the exchange rate volatility. Co integration techniques together with error rectification formulation were applied to Kenyan monthly data over the period 1997 to 2007. His results show that exchange rate variability has substantial adverse effects on Kenya's real exports of tea and horticulture.

2.4.2 Local Evidence on effect of exchange rate volatility on export trade

Otieno and Mudaki (2011) in their study state that the effects of actual exchange rate remain more probable to be long term in nature as opposed to short term. The findings indicated that the exchange rate fluctuations have moved only in acceptable margins and have not affected growth in exports and therefore the earnings generated therefrom. Questions have however been raised regarding the determinants of a country's exports owing to the positive relationship deduced between performance of the country's exports and the depreciation of the shilling.

Ndung'u et al, (2001) studied Kenya's exchange rate movements in a slackened setting. They adopted an error rectification formulation. From the findings it was determined that spreading of the interest rate differential, enhancements in the current account balance and increases in the exterior influxes are strongly related with the rise of exchange rates. They resolved that exchange rate variabilities have undesirable effects on Kenya's returns from exports.

Were (2002) and others in their study on Kenya’s export performance attempted to examine factors that influence trends in Kenya’s horticultural exports. The factors were categorized into price and production factors. From the findings of their study they resolved that the exchange rate has a significant effect on Kenya’s horticultural export performance. They also state that the potential for export supply response is evident.

2.5 Conceptual Framework

A conceptual framework as illustrated below (Figure 2.1) shows the perceived association between independent variables and the dependent variable. As shown in the Framework, there is a set of three independent variables namely inflation, foreign direct investment, and exchange rates. Kenyan export trade is the dependent variable. It is hypothesized that the independent variables have an effect on the Kenyan export trade.

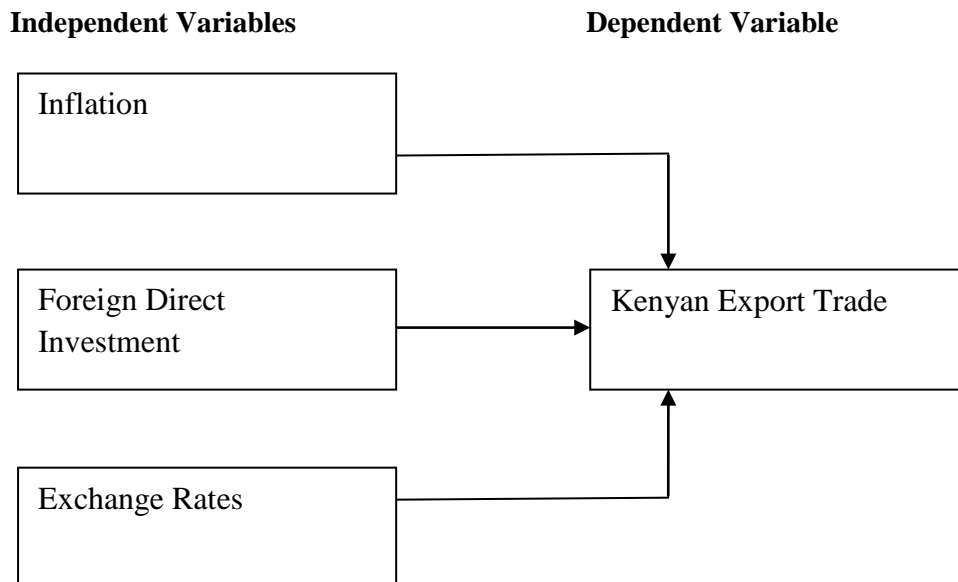


Figure 2.1 conceptual framework

2.6 Summary of Literature Review

While some researcher’s overall conclusion is that an upturn in foreign exchange rate movements result into negative effects on a country’s export performance and the economy at large we cannot draw definitive conclusions from theoretical nor empirical models. This therefore leaves the obtained results from any such study inconsistent (Baum and Caglayan, 2006). From the Economic Report of Africa (2010) it can be concluded that most countries operating under a floating foreign exchange rate regimes have performed poorly in the export

sector, in terms of export earnings and volumes, especially those with a comparative advantage in the horticultural export sector. This is however not the case for Kenya as the country's horticultural export sector has recorded continuous annual increments in export earnings and volumes under the floating rate system.

Kiptui (2008) and Mwangi et al, (2014) from their findings conclude that movements in exchange rates have adverse effects on a country's returns from exports. Others such as Fabiosa (2002) and Otieno and Mudaki (2011) concluded from the findings of their studies that the relationship between export performance and fluctuations in exchange rates was positive. It's important to note that some studies conclude that the relationships established are statistically insignificant. From the studies conducted relating to export performance, a number of factors have been put forth as the factors that affect returns of exports; some studies however look deep into factors related to price variables. It's important to appreciate that there exist difficulties in quantifying non-price variables making it almost impossible to gauge their contribution towards export performance (Alemayehu, 1999).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the overall approach taken in conducting the study. It was organised in three sections: Research Design, Data collection and Data analysis. This study focused on the export market as a whole and therefore did not consider a specific population nor sample. The unit of analysis was the aggregate export trade and this therefore was a census study.

3.2 Research Design

This study employed descriptive research method, which is one where no information is manipulated and the information collected does not involve any change of environment. A descriptive study is a study that is not experimental. Bickman and Rog (1998), proposed that descriptive studies are studies that can respond to queries of “what is” or “what was.” Under descriptive studies, a report on summary data is expressed for example measures of central tendency such as the mean, median, and mode, deviance from the mean, variation, percentage, and correlation between variables. It encompasses congregation of statistics that define events and then systematizes, tabularizes, portrays, and pronounces the data collection (Glass & Hopkins, 1984). It regularly uses graphic aids such as graphs and charts to aid the reader in understanding the data distribution, with this type of research therefore numerical analysis will be possible to enable the researcher come up with comparative analysis.

3.3 Data Collection

The study used secondary data gained from, Central Bank of Kenya (CBK) detailing the period of five years under study (2011 - 2015), to try and derive a wholesome understanding that helped to achieve the research objective stated. Monthly Export trade statistics were acquired from the Central bank of Kenya, rates and statistics, macroeconomic statistics under balance of payments statistics-foreign trade summary. Monthly average data on exchange rates was attained from the central bank of Kenya under rates and statistics, macroeconomic statistics- exchange rates and monthly average data on inflation was obtained from the Central bank of Kenya, rates and statistics, macroeconomic statistics-inflation rates while data on average monthly foreign direct investment was got from the central bank of Kenya, under rates and statistics, diaspora remittances (See Appendix 1 attached).

3.4 Analysis of Data

The statistics was examined by means of Statistical package for social sciences (SPSS Version 16) following its collection. Correlation and regression examination was used in the study to identify the nature and extent of the relationships and to find out the effect of foreign exchange rate volatility on the Kenyan export trade. Quantitative research approach was employed to arrive at the findings of the study.

3.4.1 Analytical Model

The data collected was then expressed as a multiple linear regression model i.e.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

The variables in this model are illustrated as below:

Y = Kenya's export Market (Macro/aggregate for Kenya)

X_1 = Average Monthly Foreign exchange rate volatility (dollar Vs Kshs)

X_2 = Monthly Foreign direct investment expressed as a % of Gross domestic product

X_3 = Monthly Inflation

ε = Fault term

β_1 = This represents coefficient of Average Monthly foreign exchange rate for the Kenyan export market.

β_2 = This represents coefficient of Monthly foreign direct investment expressed as a % of Gross domestic product

β_3 = This represents coefficient of Monthly inflation for the Kenyan export market.

3.4.2 Test of Significance

In this study, tests of significance particularly the t statistic, the coefficient of determination (R^2) and the coefficient of correlation (R) were generated to better understand the different associations among the variables. Tests of significance were carried out for all variables using t-test at 95% level of significance. To examine the relationship among the variables under study, Pearson correlation coefficients were calculated. These coefficients indicate the bearing and strength of linear relationships between the variables used in this study i.e. foreign direct investment, Exchange rate and Inflation. The R^2 calculated was used to illustrate in what way the regression model fit data in the study. In examining how close the data used for this study fits onto the regression line, the results of the R^2 calculated were used. The higher the percentage of the R^2 , the more reliable the model results are.

CHAPTER FOUR

ANALYSIS OF DATA, RESULTS AND DISCUSSIONS

4.1 Introduction

The findings from analysis of secondary data are presented in this chapter. The results from the regression and disruptive statistics are also presented. The summary of the findings the results of the model and the interpretations are also in this chapter.

4.2. Descriptive Statistics

It presents the mean of the variables and the standard deviations in this study.

Table 4.1 Descriptive Statistics

	Mean of variables	Standard deviation	N
Export Trade	10.172	.2951	60
Monthly Average Exchange Rate	1.94469955415641E0	.037517633872899	60
Monthly Average Inflation	-1.11711494015534E0	.202861011002030	60
Monthly FDI as a percentage of GDP	1.01507748957709E0	.196544730877284	60

The table above table 4.1 summarizes the outcome of the study using the descriptive statistics method. These results were obtained using SPSS run from 2011-2015 a five year period for the aggregate export trade in Kenya. The mean of the export trade was 10.172 while the standard deviation was 0.2951. A mean of 1.945 was obtained for Monthly average exchange rate with a variance squared of 0.0375. The inflation rate averaged monthly gave 1.117 as its mean with 0.2028 as its standard deviation, lastly the Monthly FDI put as a percentage of GDP reported a 1.015 mean and 0.1965 as the standard deviation.

4.3 Coefficients of correlation and Regression Analysis.

4.3.1 Coefficient of correlation

The study employed the coefficient of correlation in analysing the impact of rates of exchange, Monthly inflation together with FDI percentage using GDP on Kenyan trade exports. The Pearson correlation was used in the study in order to establish if there exists a relationship that is linear among the independent and the variable that is dependent as is always assumed in the regression model.

Table 4.2 Pearson Correlation of coefficient (Matrix)

		Export Trade	Monthly Average Exchange Rate	Monthly Average Inflation	Monthly FDI as a percentage of GDP
Pearson Correlation	Export Trade	1.000	.730	-.361	.237
	Monthly Average Exchange Rate	.730	1.000	.204	.668
	Monthly Average Inflation	-.361	.204	1.000	.198
	Monthly FDI as a percentage of GDP	.237	-.668	-.198	1.000
Sig. (1-tailed)	Export Trade	.	.000	.002	.034
	Monthly Average Exchange Rate	.000	.	.059	.000
	Monthly Average Inflation	.002	.059	.	.065
	Monthly FDI as a percentage of GDP	.034	.000	.065	.

From the analysis presented on the table 4.2 there exists a correlation between all the independent variables against the variables that are dependent. The coefficient of correlation of exchange rate was 73% with Export trade. The coefficient of correlation between inflation and export trade was -36.1 % whereas that of FDI as a percentage of GDP was 23.72 % to export trade from the information above

4.3.2 Goodness-of-Fit -Statistics

The magnitude of the relationship of export trade and the independent variables will be indicated by the goodness of fit statistic as shown in figure 4.3, the R squared obtained from the results was 70.5% and the R square adjusted was 68.9%, with his results it is correct to indicate the model is reliable.

Table 4.3 Goodness-of- Fit Test

Model	R	R ²	R-square Adjusted	SE of Estimate
1	.840 ^a	.705	.689	.1645

a. Predictors: (Constant), Monthly FDI as a percentage of GDP, Monthly Average Inflation, Monthly Average Exchange Rate

b. Dependent Variable: Export Trade

The results in the table 4.3 which showed the adjusted R square as 0.689, this means that 68.9% of the changes in the Kenyan export trade are triggered by exchange rate changes, inflation and FDI at confidence levels of 95% .Adjusted R squared represents adjusted coefficient of determination that shows disparities in the dependent variable caused by changes in the independent variables. Of these factors 31.1% are not stated in the model but they also cause variations in Kenyan export trade. The coefficient of correlation R of 84% indicating there's a strong positive relationship between the variables of study.

4.3.3 Regression Model

To measure statistical significance that exists between the dependent and the independent variable multiple linear regression test was employed. A regression analysis is a measure of the affiliation between the variable that is independent and the variable that is dependent. The

model was used to examine the effect of the independent variable on Kenyan export trade.

Below is an equation for the model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Table 4.4 Regression Coefficients

Coefficients

Variables in the model	Coefficients (Unstandardized)		Coefficients (Standardized)	T-static	Significance	Confidence interval at 95% for Beta	
	Beta	SE	Beta			Lower Boundary	Upper Boundary
1 (Constant)	-6.225	1.594		-3.904	.000	-9.419	-3.031
Monthly Average Exchange Rate	7.846	.771	.997	10.181	.000	6.302	9.390
Monthly Average Inflation	-.366	.108	-.252	-3.386	.001	-.583	-.150
Monthly FDI as a percentage of GDP	.718	.147	.478	4.889	.000	.424	1.012

a. Dependent Variable: Export Trade

The Beta is interpreted in figure 4.4, Beta is the standardized regression coefficients. In assessing the impact the independent variable have on the study it was noted that all the independent variables significantly affected the dependent variables at a significance level of 0.05. The variations of the importance was however different as is illustrated in table 4.4 above.

After the approximation the below was the regression equation obtained;

$$Y = -6.225 + 0.997 X_1 - 0.252 X_2 + 0.478 X_3 + \varepsilon$$

From the above equation, the export trade would be -6.225 holding all other variables which are, rate of exchange represented by X_1 , inflation rate by X_2 and FDI as a percentage of GDP represented by X_3 at a Constance of 0.

4.4 Interpretation of the Findings

The findings of the study recognized that a relationship exists between Foreign exchange rate fluctuations and export trade in Kenya. As shown in the table 4.2 exchange rate had a correlation co-efficient of 73% to export trade The correlation coefficient of inflation was inflation -36.1% while that of FDI as a percentage of GDP was 23.7%. It is therefore logical to conclude the higher the foreign exchange rate, the higher the export trade realized in the country based on the results of the correlation coefficients, this results also reveals strong relationships between export trade and the foreign exchange rate.

From the research findings, the greatest predictor of the Kenyan export trade is the rate of exchange which is also reliant on the strength of beta coefficients at 0.997 with a t of 10.181 and a 0.000 significance level, this is followed by FDI as a percentage of GDP at 0.478 at a t of 4.889 with a significance of 0.000 and finally inflation rate at -2.52 with a t of 3.386 and a 0.001 significance. Ceteris paribus if exchange rate was increased by a unit it would lead to a 0.997 unit increase Kenya's export trade earnings. The coefficient of determination R^2 at 68.9% shows that the independent variables explains 68.9% of the disparities in Kenyan export trade at confidence levels of 95%

At significance levels of less than 0.05 in our regression model it indicates that the coefficients are significant. The conclusions of this study show that a unit increase in FDI will lead to 0.478 increase in Kenyan export trade, hence FDI is an important element in the earnings of export trade in Kenya. With FDI there's more money flow and therefore development is high this will lead to low cost of production hence the exports returns will be high. As for inflation it will cause general price increase in goods and services thereby consumers will not be able to afford hence low purchasing power and this definitely will decrease earning from the country's exports. Hence the negative relationship in the

correlations interpreted as an increase in a unit of inflation will bring about -.252 unit decrease in Kenyan Export trade earnings.

Generally there's statistical significance in the findings at close to 0.000 significance levels and less than 0.05.this indicates the findings were accurate and a representation of effects of the independent variables on Kenyan export trade

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECCOMENDATIONS

5.1 Introduction

Chapter five summarizes the study's results and a conclusion drawn from the findings of the study it has recommendations for policy change, restrictions of the study and commendations for additional research. The chapter will present other researcher's findings and conclusions in comparison with the findings and conclusions from this study as was seen in review of literature.

5.2 Summary

This research set to find out how foreign exchange rate fluctuations effect on export trade in Kenya. This study used secondary data that was collected from central bank of Kenya. The research findings showed that a there exists a positive relationship between fluctuations in exchange and export trade in Kenya. Which therefore implies that by increasing exchange rate fluctuations trade will be affected positively.

The results of the regression demonstrate that when the inflation index, FDI as a percentage of GDP and fluctuations in exchange rates are zero in value the space allocation will becomes -6.225. It is noted also that if exchange rate increases by a unit export trade increases also by 0.997. If inflation increases by a unit export trade earnings decline by 0.252 while if FDI increases by one unit export trade increases by 0.478. These findings are in consistency with Fabiosa (2002), and Otieno and Mudaki (2011) who concluded that there is a relationship between trade export earnings and fluctuations in foreign exchange rate and this relationship is a positive one. The study also did make a conclusion that the rate of exchange is an important factor in a countries export trade earnings, conclusions that are same as the findings of this study.

5.3 Conclusion

The variables for this study were, dependent variable, export trade and the independent variables foreign fluctuations in exchange rate, inflation and FDI percentaged on GDP. The study observed foreign exchange rate fluctuations effect on export trade in Kenya using monthly time series data from 2011-2015. The study found out that the independent variables

were significant statistically factors in the Kenya`s export trade. Kenya is politically unstable It has underdeveloped infrastructure and poor macroeconomic environments this factors have continued to slog export trade performance and this in return reduces export earnings. There was a conclusion that the rate of exchange is a major element in determining export trade in Kenya. The conclusion made is in tandem with that of Were et al (2002) in his research of effects of exchange rates, which revealed that exchange rate affects greatly the Kenyan export performance.

5.4 Policy Recommendations

The Kenyan government should consider coming up with measures to support export trade. If these measures are implemented, there is a chance of more job opportunities being created which could lead to increased levels of production due to job creation and job security leading to improvement in export performance.

The performance of an economy is fully dependant on the political stability of the country in question. Export performance is no exception and therefore it`s the government`s responsibility to ensure that a conducive political environment exists that supports export trade.

The government is required to form policies, measures and structures to ensure that the exports from the country are boosted and maintained at an increasing level. The government could do this by establishing special economic zones in collaboration with private investors to support the export sector of the country.

It`s important for the country to move away from the export of primary products such as coffee, tea, horticulture and move towards export of secondary products. Primary products are subject to external shocks in international markets to a large extent as compared to secondary products. It`s important that the supply of products in the export sector is boosted especially through incentives and subsidies which will lead to a lower cost of production.

It`s also of great importance that policy makers create and maintain an enabling environment that will be able to withstand a steady system of foreign exchange rate that will be able to resist exterior influences and blows. To achieve the objective, the central bank needs to be very independent particularly the committee n monetary policy.

5.5 Limitations of the Study

Time was a limitation considering previous studies have covered much more e.g. Otieno and Mudaki 2011 covered time series data period ranging from 1960 to 2010 which gave a wider range to work with. Given an extended time, more robust tests and analysis would be undertaken to find out whether the same conclusions could have been arrived at with other variables also taken into consideration in the research model.

Data also was a limiting factor since all factors that can likely affect export trade earnings were not included in the study

Periods of significance economically like troughs and booms may not have been captured in this study given more time these factors can be considered the results would have relayed a broader outlook to the problem in the research.

5.6 Recommendations for Further Research

The research consisted independent variables, three in total namely foreign rate of exchange inflation rate and FDI given as a percentage of GDP. The recommendation given is that the number of variables that affect Kenyan export trade to be increased such as transport infrastructure domestically and the wider environment as these factors may influence the outcomes achieved from such other comparable studies.

A recommendation to further use other currencies other than USD against Ksh which was what was used for this research. This is to include other currencies that form part of the Kenyan Export market this can be the Euro, or the sterling pound.

This study was carried out on Kenyan export trade, further research could be carried out on the larger region of the East Africa to find out the foreign exchange rate fluctuations effect on export trade earnings across the region of East Africa.

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Appendix 1

Data Collection Form

Year	Monthly average exchange rate	Monthly Export (Kshs)	Monthly inflation (Kshs)	Monthly foreign direct investment
2011				
2012				
2013				
2014				
2015				