

**THE RELATIONSHIP BETWEEN FOREIGN EXCHANGE
FLUCTUATIONS AND BALANCE OF TRADE IN KENYA**

By:

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FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
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DECLARATION

I declare that this research project is my original work and it has never been submitted anywhere for any academic award.

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Signed.....Date.....

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

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DEDICATION

This research project is dedicated to my late ‘Mama’ whose dream was to see me pursue studies to the height of intelligentsia club of the world... I will forever prolong your legacy. *RIP*

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LIST OF ABBREVIATION

BOT:	Balance of Trade
CBK	Central Bank of Kenya
DRC:	Democratic Republic of Congo
EAC:	East African Community
ERPT:	Exchange Rate Pass-Through
FEBC:	Foreign Exchange Bearer Certificates
GDP:	Gross Domestic Product
GNP:	Gross National Product
IMF:	International Monetary Fund
KAM:	Kenya Association of Manufacturers
KNBS:	Kenya National Bureau of Statistics
LDC:	Least Developed Countries
NAM:	Nigerian Association of Manufacturers
PPP:	Purchasing Power Parity
SAP:	Structural Adjustment Programs
SDR:	Special Drawing Rights
WTO:	World Trade Organization

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ABSTRACT

The opening of many bilateral and multilateral trade agreements, the foreign exchange rate has become a very important factor in Kenya's economy. The country deals with international trade where it involves itself in importing of expatriates, exporting of skills, importation of essential commodities for domestic and industrial consumption and exportation of agricultural and industrial produce. Fluctuations in the exchange rate of a country currency have always had its effect on the balance of trade. Kenya's economic performance heavily relies on exports and imports both of which determine the balance of trade. The research explored the relationship between foreign exchange rate fluctuations and the balance of trade in a setting that will tend to avoid the shortcomings of earlier literature.

The researcher used descriptive research design to describe the relationship between foreign exchange. The study utilized secondary data on an annual basis between the periods of January 2007 to December 2011. Data on Foreign exchange rates was obtained from CBK reports while data on balance of trade was obtained from the Kenya Bureau of Statistics. For further analysis, regression method was used to determine the significance of the contribution of the specific variables to import and export volumes. Coded data was then be tabulated in Statistical package for Social Science (SPSS version 16.0). The value in foreign exchange terms of total export and import of goods were used to obtain the balance of trade, which is defined as ratio of import over export.

It was found out that there is a long run relationship between balance of trade, exchange rate, foreign and domestic GNP. The domestic output growth leads to increase in exports but no significant impact on imports is shown. More research is needed to determine why the impact on imports is small, the effect of exchange rate fluctuation on foreign direct investment and extent of fluctuation on inflation. The authorities should intervene on the foreign exchange policies by regulating the hybrid system, devaluing the currency when exports are on high demand. Since the impact of the exchange rate adjustment on trade balance is ambiguous given the absence of a more stable long run relationship, it is advisable to rely on currency appreciation in order to correct trade surplus.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Exchange rate between two currencies is the value which a currency of one country is traded against that of another country. This rate is also termed as the foreign exchange rate. Foreign exchange rate is divided into the buying rate and the selling rate. Currency buying and selling takes place in a forex market where buyers and sellers quote their prices. Existence of a forex market is very essential due to international dealings which include traveling abroad and international trade. This market has made it easier to facilitate global trade (De Bonis, 1999).

With opening of many bilateral and multilateral trade agreements, the foreign exchange rate has become a very important factor in Kenya's economy. The country deals with international trade where it involves itself in importing of expatriates, exporting of skills, importation of essential commodities for domestic and industrial consumption and exportation of agricultural and industrial produce. According to European Union statistics of Kenya's trade, in the 2nd quarter of 2011, Kenya's exports were valued at 1 033 000 000 euros against 3 039 000 000 euros of imports. This, in relation to the country's Gross National Product of 35.787 billion Euros shows how the foreign exchange plays an important role in the income of the Kenyan economy (EU 2012).

Fluctuations in the exchange rate of a country currency have always had its effect on the balance of trade. Kenyans major trading partners are the European Union, India, China, United Arab Emirates, South Africa and Saudi Arabia. Most of the partners trade using the dollar, the Sterling Pound and the Euro. A change in price of the rates at which the shilling trades with these currencies will therefore impact on the performance of the Kenyan economy and performance of the shilling (WTO 2000).

Changes in the rate of exchange of a countries currency against foreign currency can lead to a currency crisis. After the end of the First World War, some countries in Western Europe and the United States suffered economic problems due to the falling in the value

of their currencies on the international market. The fall in value of the sterling pound, 30 % of its initial value by 1931, led to the onset of the great depression (Allen, 2010).

Countries in Asia experienced a problem in exchange rates in the period between 1997 and 1998. According to Professor Abdur Chowdhury, the Asian financial crisis affected the four Tigers-Hong Kong, Taiwan, Singapore and South Korea- Indonesia, Malaysia and Thailand. This currency crisis caused a slump in domestic asset markets, bank failures on a widespread scale and insolvency of various business firms. The currency crisis in Asia followed two prior crises which began with the European Monetary system crisis of 1992 to 1993 and the Mexican Peso crisis of 1994 (Chowdhury, 1999).

In Africa, several countries have had challenges with the exchange rate fluctuations on their currency. Nigeria suffered a currency crisis in the early 1980s after the decline in oil revenue that had put Nigerian currency on the success path since the 1970 oil crisis. This crisis forced Nigeria to adopt the Structural Adjustment Programs (SAP) as dictated by the World Bank and the International Monetary Fund (IMF) The crisis reversed what the country had gained in its previous policy of indigenization. This crisis devalued the Naira value to the dollar by 30 %.according to the Nigerian Association of Manufacturers, the average capacity utilization was on a downward slope from 40 % in 1988 to 31 % in June 1989 and eventually 29 % December 1989. The end result was a decline in output in factories which eventually led to close down of many factories and unemployment (Nwosu, 1993).

Kenya has experienced currency crisis in different periods of times since it gained its independence in 1963. The appreciation and depreciation of the Kenyan shilling in comparison to other foreign currencies has had significant effects on Kenyan economy. In the period of 1992 to 1995, Kenya was forced to implement some reforms which were conditionality for IMF to give funds in terms of donor aid. They were mostly concerned with the exchange rates and the foreign exchange controls. The government floated the shilling and reintroduced the foreign exchange retention accounts. The government later on reversed the reforms. The poor performance of the shilling resulted in rising domestic costs, pushed the exporters into a non tradable sector mainly due to inflation and per capita income declined (Lundahl, 2001).

The floating of the shilling in 1993 removed restrictions on exchange rate and made the shilling to experience a sharp depreciation which caused macroeconomic instability, severe shortage of foreign exchange, lack of fiscal control, sharp increase in inflation and expansion in excessive money supply. The 1994 crisis occasioned a decline in economic infrastructure; it led to poor service support of business establishments which made the firms to suffer from skyrocketing utility prices and poor services. This in turn affected the competitiveness of the businesses on the free markets (Lundahl, 2001).

According to the Parliamentary Budget Office report released in 2011, the country has had serious exchange rate volatility problems in March 1994, at the height of the Goldenberg Scandal and in the year 2011 when the Kenyan shilling went down to a historic low of shs107 in October 2011. The 2011 exchange rate volatility problem in Kenya put the shilling to be the worst performing economy in the world (PSC, 2011).

1.1.1 Balance of Trade

Terms of trade is a ratio comparing the export prices to import prices and is related to current accounts and the balance of payments. If the price of a country's exports rises by a greater rate to that of its imports, its terms of trade will be seen to have improved as it shows greater demand for the country's exports. On the other hand, if the price of exports rises by a smaller rate to that of its imports, the currency's value will decrease in relation to its trading partners. Frenkel (1992) states that a higher exchange rate can be expected to lower a country's balance of trade, while declining exchange rate decreases the purchasing power of income and capital gains derived from any returns. Investors need to understand how currency values and exchange rates play an important role in the rate of return on their investments.

Frenkel (1986) opines that a larger international trade flow foster stronger economic inter relationship between countries. Foreign trade mostly concerns itself with exports and imports. The exports, according to the author, affect domestic economic activities of a state while imports bolter the economic activity that facilitate more exports. Foreign exchange rate is one of the channels that affect the international trade. International trade

calls for exchange of one country's currency for another. International trade is directly linked trading of goods and services, foreign direct investment, long term investment portfolio flows, hedge funds, mutual funds and the safe haven status of currencies.

In economies such as US and the European nations, international trade is priced in the currency of the area concerned unlike in smaller economies like Iceland where imports are priced in foreign currency since the króna is rarely used in international trade (Mishkin, 2008). Currency depreciation would therefore have less effect on the price of imported goods than it does in Iceland. Moreover, due to the small size of the economy, domestic manufacturers compete with imported goods thus making it easier to pass exchange rate movements through to retail prices. Price changes occur more often when exchange rate movements are large and inflation is on the rise.

Countries intentionally depreciate the value of their currency for reasons of international trade. When a nation's currency is weak its exports grow more enticing. For example, Euros were sold en masse during the Grecian debt crisis, which in turn caused a weakening or devaluation of the euro. However, currency depreciation is not always bad: The Wall Street Journal explains 10% euro devaluation could provide a 17% increase in the euro zone's gross domestic product. Export-heavy countries are typically able to sell more goods when they are cheaper for other nations to purchase. Several countries, such as the United States, accuse China of keeping the Yuan artificially devalued in order to sell more exports at the economic expense of countries with strong currencies

According to World Bank (2011), in its Economic Outlook on Kenya, the country has a current account deficit which means it does little exporting as compared to importing. Exporting and importing have a symbiotic relationship and are all pegged to the exchange rate of the shilling. In an explanation, the country suffers few exports because it produces goods with low prices which saturate the markets but do not fetch enough cash. Cheap exports can be attributed to the higher prices of the imported essential commodities which are required to produce quality and thus expensive goods for export. Relatively cheap products are as a result of avoidance to use the imported items which would add quality to the goods and make them highly competitive in terms of price on the

international market. In 2005 Kenya's income from exports was estimated to be US\$3.2 billion. The payment for imports estimated at US\$5.7 billion. This yielded a trade deficit of about US\$2.5 billion.

Kenya's current account deficit increased substantially since 2008. However, the overall balance remained stable -despite it recovering from a deficit of 2 percent of GDP in the early 2009- due to strong services exports and a strengthening of the capital account. The government embarked on a programme of fiscal stimulus package so as to build a strong macroeconomic foundation. The implementation of the program enabled Kenya's merchandise exports to rise as it had which been stagnant at around US\$ 4 billion since 2006 (Kenya Economic update, 2009).

The last decade has seen several European countries been overtaken by Kenya's trading partners in the EAC. Uganda has overtaken UK as Kenya's number one trading partner, Germany and France dropped while Somalia, Sudan and DRC are now Kenya's top ten exporting destinations plus the US. Kenya has increased its exports in the EAC region by taking advantage of trade preference to African countries by USA under the AGOA program. The Kenyan's exports have achieved a breakthrough in Asia which will soon become a base for future export growth beyond the confines of EAC and COMESA region (Kenya's Economy, 2011).

The fall in the Kenya shilling in 2011 to almost a quarter of its value has been said to have impacted on its trade deficit. The shilling fell in value from 82.00 shilling in January 2011 to 107 shilling in October 2011 against the dollar. The negative trade deficit further impacted on investor confidence. A waning investor confidence slows down growth, reduces the exports that a country can make and worsens the current account balance. The world bank report states that Kenya should put in place constraints to restore the stability of the exchange rate in order to make the shilling valuable for imports which are a major factor in improvement of the exported commodities (World Bank 2011).

1.1.2 Foreign Exchange Rates

The value of the currency of each country can be managed using different mechanisms. These mechanisms narrow down to the exchange rate regime which applies to the currency. The currency of a given country can either be said to be free floating, fixed or a hybrid. A free floating currency operates in a laissez faire kind of a market. Here, the currency is left to respond to the market forces. It is allowed to fluctuate against other currencies in response to the demand and supply forces. However, there are instances where the central banks have to intervene in order to regulate the appreciation and depreciation of the currencies. In such a case, these systems are called managed float and they are different to the system where no intervention is done at all. In cases where there is no intervention, it is called free float (Tauline, 2008).

Free-floating exchange rate is based on market forces and it will always change whenever the components of demand and supply change. A currency becomes more valuable if the demand for it is more than the supply that is available. Whenever the demand is less than the available supply, the currency becomes less valuable. Less demand does not necessarily mean that the currency is no longer wanted by people. It may mean that people prefer to hold their wealth in other forms of currency or even in form of gold (Stein & Allen, 1997).

The fixed exchange rate regimes are those which have a direct convertibility towards the currency of another country. The government of a given country tries to always keep the value of the currency to be constant. The country gives the currency its worth in terms of a basket of other currencies, in terms of a fixed weight of gold or a fixed amount of another currency. Here, the central bank of the country commits itself at all the times to do the buying and the selling of its currency at determined fixed rates (Evans, 2011).

Hybrid exchange rate regime consists of the crawling pegged system and horizontal pegged system. The market forces do not favor the use of a fixed exchange rate in absolute measures. At the same time, allowing the flexible free floating system may expose a country's currency to the volatility associated with exchange rates. The hybrid

system is therefore necessary for a combination of the two regimes. This allows for the currency fluctuation but is guards against exposing it to the volatile markets (Frankel, 1993).

A pegged float exchange rate regime is where the currency of a country is pegged to a given brand or a given value. This regime pegs the currency value around some band. It can either be a crawling band or horizontal band. Under crawling band, the rate is made to fluctuate in a band around a central value. This value undergoes periodic adjustment. This kind of adjustment happens in a controlled way in response to some economic indicators. As opposed to the crawling pegs, the horizontal peg allows the rate to fluctuate in a fixed band which is bigger than 1 % around a central value. The central value could a basket-of-currencies (Stein & Allen, 1997).

A basket- of- currencies is a composite currency created by different countries in their exchange rate regimes. For example, the Eurozone pegs its Euro to the US dollar. Some countries can have important trading partners or can just be cautious of some currency being volatile over a long period of time. As such, they can decide to peg their currencies to weighted average of currencies from different countries. A fixed quantity of SA dollars, euros, Japanese Yen and British Pounds is the most widely used basket-of-currencies. A country which uses this as a basket-of-currencies then has to maintain reserves of one of more of them so as to satisfy the excess demand or supply in the exchange market (Tauline, 2008).

There are the good sides and the downsides of fixed exchange rate regimes. When fixing the exchange rate of the home currency, this has a potential in minimizing instability in real economic activities. In a country which is awash which currency speculators, fixed exchange rate regime helps to stabilize the market whenever effects of speculation take place. Fixing exchange rates also curbs volatility and instability of market prices (Frankel, 1993). On the negative side, fixed exchange rate regime fails to reconcile the announced exchange rate and the market equilibrium exchange rate. This may lead to an excess in demand or in supply. More so, the chances of automatic correction of

imbalances of the balance of payment of a given country become very minimal in a fixed exchange regime. The currency is not allowed to appreciate or depreciate as dictated by the forces of the market (Frankel, 1993).

Isard (1995) sought to explain the mechanism under which exchange rates work whereby the central bank of a given country starts by announcing an exchange rate for the currency and agrees to buy and sell it at the announced value. For a market equilibrium exchange rate to be arrived at, the supply and demand should be equal. This is known as the spot rate in a flexible exchange rate system. In case the exchange rate regime is fixed, the exchange rate may not coincide with the market equilibrium. A foreign exchange market can be intervened by the central banks. The central banks hold gold reserves and foreign exchange currencies which they can sell or releases in order to intervene in the market deficit or excesses.

There are two reasons why the demand of a currency can go high. First, when there is increased transaction demand for money. Secondly, the demand may go high because of speculation. There is a positive correlation between the transactional demand and the level of business activity in a given country. The gross domestic product and the level of employment are also important factors in demand for the currency of a country. When fewer people are doing business or are employed, they will be less money spending in the market. This lowers the demand for the currency. This will then respond to the forces of the market and lower the value of the currency (Evans, 2011).

The central banks can easily accommodate the changes in demand for the currency occasioned by transactional demand. For speculative demand, it is a bit complicated for the central banks top control. Here, the banks have to adjust the interest rates. When the banks adjust the interest rates to go high, the supply of the currency becomes limited. This will in turn strengthen the value of the currency. When the banks adjust the interest rates to become low, the supply of the currency is high. This makes the currency to be less valuable. Speculators may create pressure on a given currency and force the central bank to release more currency at lower rates. They can then buy the currency and make

profits later. This undermines real economic growth (Tauline, 2008).

Central banks can intervene in the exchange rates of the home currency using different means. This could either be through sterilized or non-sterilized intervention. In a sterilized intervention, the country formulates a policy which influences the exchange rate without changing the monetary base. First, the central bank of the country may buy or sell the foreign currency bonds by use of the domestic currency. The effects of the monetary base are then sterilized by buying or selling a corresponding quantity of the domestic currency denominated bonds. This then helps to soak up the initial decrease or increase in the home currency (Frankel, 1993).

Non sterilized intervention has been said to be effective by some economists. Here, this policy influences the interest rates by induction of changes in the monetary base stock. This then changes the monetary aggregates in a broad sense, shifts the interest rates, the market expectations and ultimately the rate of exchange. A case in point is the purchase of the foreign –currency bonds. This leads to the increase in home-currency money supply which decreases the rate of exchange (Evans, 2011).

1.1.3 Relationship between Balance of Trade and Foreign Exchange Rates

According to (Branson 1990), a shift in exchange rates can lead to manipulation of foreign trade. In a case of five of the major economies in 1987, the author gives the results of manipulation of the exchange rate of the dollar by the major five economies. The American current account deficit was 3.4% of the GNP, the Germany current account surplus was 3.6% of their GNP whereas Japan had 4.0 % surplus of the GNP. In order to realign the imbalance in current accounts between USA and the major economies, the countries (Germany, USA, Japan, UK and France) met and agreed to manipulate the exchange rate. These countries sold 18 million dollars simultaneously thus creating a surplus in the market and lowered the value of the dollar in the range of 10% to 12 % within six weeks of the intervention. The lowered value of the dollar resulted in a boost in USA exports hence assisting to offset the imbalance in the current account.

An increase in exchange rate can lead to a trade deficit. Exchange rates directly determine the price of commodities both for foreign and domestic use. High exchange rate makes it expensive to import products which are used for industrial production purposes. This in turn raises the production cost whose effects are passed onto the consumers in form of costly prices. Costly priced goods cannot compete favorably in foreign markets. This highly discourages marketability of domestic products on foreign markets. In the 2011 shilling crisis where the exchange rate stumbled to a record low of 107 against the dollar, KAM cited cost of domestic production as one of the major affected sectors of the economy due to the hiked exchange rate (Kenyan London News, 2012).

Changes in exchange rates between two countries have an effect on performance of their local currencies with regards to direct foreign investment. Depreciation of the local currency against other currencies will weaken local currency which discourages direct foreign investment because it becomes expensive to acquire the currency of the foreign state into which investment can be done. When the exchange rate appreciates in favor of the local currency, the local currency becomes stronger and gains an upper hand in direct foreign investment. Direct foreign investment affects balance of trade. A stronger local currency therefore will foster a positive balance of trade between two countries because of the increased and favorable conditions of doing the direct foreign investment (Herberger, 1950).

A rise in exchange rate of the local currency against foreign currencies is attractive to portfolio investment from a countries trading partner. This situation is referred to as domestic money growth. A favorable exchange rate therefore results in domestic money growth which considered the main pull factor for the portfolio flows. A stable exchange rate of the local currency is an attraction to foreign investors. This follows the argument that the return on foreign investment is directly linked to the local currency fluctuation. Asset portfolio risk exposure is hedged on the currency risk. A stable currency therefore heavily determines whether the citizens of a given country will invest in a foreign land as well as determining whether foreign investors will invest into the country through an increased portfolio flow (Vita, 2008).

Santis (2006) links the effects of exchange rate, stock prices, asset prices and portfolio flow. Strengthening of the local currencies value, he argues, creates a divergence in the financial market on international level. This improves the foreign output of the country thus boosting its domestic stocks and bond markets while at the same time devaluing stocks and bonds in the foreign market. The rising value of stocks on the domestic market attracts foreign investment which increases the inward portfolio flow. A stronger local currency therefore will help to boost investment from foreign investors. Which large capital inflows due to foreign investment in portfolio, the interest rates go down thus strengthening the local currency further. Such a scenario is reported in the USA in the 1990 when there was a high portfolio inflow which boosted the capital inflow which strengthened the dollar.

Pavlova (2003) manages to explain exchange rate and local currency in terms of debit and credit phenomenon. The exchange rates affect the local currency on the credit side in terms of; Exports of goods and services; Investment income on foreign assets owned by domestic residents; Transfers to domestic residents; Net purchases of domestic assets by foreign residents. On this line of explanation, it is preferable for the local currency to be in a depreciation mode. A weak falling exchange rate therefore makes the local currency to work well in terms of foreign investments where the locals who had invested in the foreign country will get good returns. A weak local currency will again foster investment from foreigners because of the domestic purchases of assets. A weak currency means it is easier for a foreigner to buy it and do the local purchase of the countries assets. A strong local currency makes the products and services being exported to become expensive and may lose competition with products from other countries.

A drop in value of the exchange rate of local currency has a negative impact on importation of goods and services. This is through the exchange-rate pass-through. An exchange rate pass through is considered to be complete when a unit change in exchange rate results in a unit change of the import prices. Krugman is credited as one of the economists to first relate exchange rate and price of goods. He explained that exchange rate changes could be passed to traded goods prices or absorbed in producer profit margins. In an example, he explains that if the local currency of an importing country

depreciates, the price of imported goods will be costly. In order to stabilize the price, the country that is exporting the goods may make cuts on its exporting prices. Some studies however show that the import prices can be de-linked from the exchange rate fluctuations (Jabara, 2009).

1.2 Research Problem

The Kenyan government moved from a market controlled economy to a free market in the early 1990s after the Bretton Woods institutions forced it to adopt some structural adjustment programs as a merit to get loans and grants. This saw the country open its borders for more trade and shifted from a fixed foreign exchange rate policy to a fluctuating exchange rate policy. This shift in international trade policy opened up the shilling to an exchange rate fluctuation which in turn affects the performance of the economy.

Kenya's economic performance heavily relies on exports and imports both of which determine the balance of trade. The country trades mostly with Britain, India, USA, China and Uganda which is the major importer of Kenyan products. Trade with the Kenyan partners involves use of foreign currency. In order to acquire the foreign currency, forex market has been very important where currencies are exchanged at different values to the Kenyan shilling.

Performance of the Kenyan shilling as compared to other currencies of its trading partners directly affects the trade on imports and exports in the Kenyan economy. The country has had fluctuations in performance of the shilling on the forex market and each has had an impact on the balance of trade of Kenya. According to Kagai (2009), in his study on the 'survey of foreign risk management practices by textile firms in export processing zones in Kenya', the Kenyan shilling was found to have suffered a reduction in its value compared to other trading partners. This had an impact on the economy where imports became expensive and it was difficult for the manufacturing sector to produce goods which would be exported.

A lot of interest since the floating of exchange rates has been on the impact of exchange rate fluctuations on international trades since its common knowledge that increase in exchange rate decreases trade. On a larger scale, trade contracts are usually designed for future or forward delivery of commodities and are stipulated either in the importer's or exporter's currency. Therefore, unexpected exchange rate fluctuations tend to impact negatively on the risk associated with international transactions thus making risk-averse traders to cut down on trade activities.

A number of theoretical and empirical evidence have failed to conclusively support the view that fluctuations in exchange rate impacts on trade. A good number of theoretical studies support that exchange rate fluctuations decreases trade (Baron 1976, in his study on "Fluctuating Exchange Rates and the Pricing of Exports", Clark 1973, in his review of "Uncertainty, Exchange Risk, and the Level of International Trade" and Hooper and Kohlhagen 1978, in their paper on "The Effect of Exchange Rate Uncertainty on Prices and Volume of International Trade"). Yet, on other hand different models argue positively on the hypothesis that exchange rate fluctuations increases trade (De Grauwe 1988, in one of his IMF staff papers about "Exchange Rate Variability and the Slowdown in the Growth of International Trade", Franke 1991, in his review on "Exchange Rate Volatility and International Trade" and Viaene and de Vries 1992 in their economic review on the "International Trade and Exchange Rate Volatility").

The empirical studies have also been contradictory. For example, Cushman (1983) on "The Effects of Real Exchange Rate Risk on International Trade" and (1986) on "Has Exchange Rate Risk Depressed International Trade?", finds a significant negative effect of exchange rate fluctuations on international trade but on the other hand, Hooper and Kohlhagen (1978) do not find a significant negative impact. On the contrary, Asseery and Peel (1991), in their letters as pertains "The Effects of Exchange Rate Volatility on Exports," reports a significant positive impact of exchange rate fluctuations on total export volumes. The positive assumption, however, has been rejected since it is believed not to be at par with the general knowledge that exchange rate fluctuations decreases international trade. In recent study by Nyamwange (2009) on the 'relationship between

exchange rate and International trade in Kenya', suggested that there was need to further examine the nature of the relationship and also to establish the significance of the role played by the real exchange rate in determining International trade volume.

The research paper explores the relationship between foreign exchange rate fluctuations and the balance of trade in a setting that will tend to avoid the shortcomings of earlier literature. As the exchange rate of the Kenyan shilling fluctuates, there is a shift in its pattern of international trade which in turn alters its economic measures in terms of balance of trade. This research project purposes to study the relationship between foreign exchange rate fluctuations and balance of trade in Kenya.

1.3 Objective of the Study

To establish the relationship between foreign exchange rate fluctuations and balance of trade in Kenya

1.4 Value of the Study

This study will help financial institutions by striving to provide unbiased, transparent and relevant information about the economic performance and condition of businesses. Effective financial reporting depends on high quality accounting standards as well as the consistent and faithful application of the said standards. The government will stand to benefit from the study's recommendations as regards policy measures that could alleviate the effects of depreciation and to ensure commercial banks continue to flourish and improve living standards of Kenyans.

Academic institutions are bestowed with the duty of creating and disseminating knowledge. The findings of this study will provide an informed basis for further research by academicians to shed more light on currency depreciation problems and to develop improved ways to successfully combat future crises. The study will be of great importance to investors and other financial market participants in their resource allocation decisions and to other users. The confidence of all these users in the transparency and integrity of financial reporting is critically important to global financial stability and sound economic growth.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter entails a thorough review on literature about the subject under study presented by various researchers, authors, analyst and scholars. It begins with the theoretical review and further highlights the theories on exchange rate and balance of trade that have been put forward by various scholars. It also elaborates on foreign exchange market. This chapter will also discuss a number of studies that have been done in Kenya and other parts of the world with a focus on the relationship between exchange rate and balance of trade. A summary will be made so as to provide the general background and rationale for the present day.

2.2 Theoretical Review

The main aim of theoretical review is to review the critical points of current knowledge including finding as well as theoretical and methodological contributions to a certain topic. It entails a collection of related concepts which will guide the researcher in determining what will be measured and in drawing relationships between the variables. Theoretical review establishes the importance of the topic by providing information needed to understand the study.

A substantial amount of research has already been carried out on the relationship pertaining exchange rates and Gross Domestic Product. This research focuses on the exchange rate variability, terms and balance of trade both in developed and in developing nations. This literature review entails a number of theories put forward to explain and provide an explorative view of the relationships. The theories are as follows;

2.2.1 Law of One Price

This law states that in absence of shipping costs, tariffs and other frictions of international trade, homogeneous goods should be traded for the same real price in different nations. This law is also another way of stating the concept of purchasing power

parity. Since the exact price of identical goods is rarely known in two different countries, price indexes are used in empirical work. Different countries use different commodities to determine price level hence difficulty in measuring purchasing power parity which are normally constructed from price indexes. Hence, even if the law of one price holds in each good, it may not hold overall for dissimilar consumption basket (Amin et al, 2004). The law of one price is in existence due to arbitrage opportunities. If the prices of a commodity in two different markets are not the same, then the arbitrageur will buy the commodity in the cheaper market and resell it markets where prices are higher.

A formula explaining the ‘law of one price ’is as below. According to the strong absolute formula, suppose there is are a large number (N) of individual commodities produced and consumed in Kenya and Uganda; the sub-index (*i*) will denote the type of commodity and (*t*) will denote time. The formula will be as follows;

$$P_{Bi,t} = S_t P_{Ai,t}$$

where $i = 1, \dots, N$.

Where $P_{Ai,t}$ is the price of commodity *i* in Kenya at time *t* , $P_{Bi,t}$ is the price of the same commodity in Uganda at the same time, and S_t and is the nominal exchange rate.

2.2.2 Real Effective Exchange Rate

Real effective exchange rate is the weighted average of the bilateral real exchange rates. It is the ratio of foreign to domestic price level expressed in the common currency through nominal bilateral exchange rate. Kipici and Kesriyeli (1997), states that real exchange rate corresponding to the trading partners of a country are used by some weighting criteria which may include; share of currencies used in foreign trade transactions or the share of foreign countries in a country’s total foreign trade volume.

IMF uses foreign trade data of goods and services in the agricultural and manufacturing sector to determine a country’s weight. These weights are used in the calculation of the nominal exchange rate of a given country and in order to render possible comparison between many countries, the real effective exchange rates are calculated after correcting the nominal rate with the consumer price indices of each country.

It is computed as follows;

$$\log(\text{REER}) = \log(\text{foreign price index}) - \log(\text{domestic price index}) + \log(\text{effective nominal exchange rate index})$$

2.2.3 Purchasing Power Parity

According to this theory, a currency must have the same purchasing power in all countries and the exchange rates move to ensure that. If the purchasing power of the dollar is the same both at home and abroad, then the exchange rate cannot change. The nominal exchange rate between two countries must reflect the differentials price levels in those countries. Therefore, a unit of any given currency should be able to buy the same quantity of commodities in all countries. This theory is based on the principle called 'the law of one price' which states that a good must sell for the same price in all locations. If the law of one price were not true, unexploited profit opportunities would exist (Stonecash, 2005).

2.2.4 Elasticity Approach Theory

This approach emphasizes price changes as a determinant of a nation's balance of payments and exchange rate. Price elasticity of demand is a measure of the responsiveness of quantity demanded to a change in price. If quantity demanded is highly responsive to a change in price, then demand is said to be relatively inelastic and vis-a-vis. This elasticity model of the balance of trade focuses on the relative price effects on the current account balance and has shown existence of a relationship between exchange rate and balance of trade (Krueger, 1983). The nominal depreciation or appreciation of exchange rate is assumed to change the real exchange rate hence having a direct effect on the balance of trade.

When a nation's currency depreciates, domestic goods become relatively cheaper and foreign goods more expensive in global market. In other words, devaluation of a currency encourages exports and discourages imports thus improving balance of trade. The elasticity approach, therefore, considers the responsiveness of imports and exports to a change in the value of a nation's currency.

2.2.5 Marshall- Lerner Condition

The above theory is also known as Marshall-Lerner-Robinson condition and it is at the center of the elasticity approach to the balance of payments. This condition seeks to answer the question: ‘when does a real devaluation or depreciation of the currency improve the current account balance of a country?’ The MLR condition states that a real devaluation of the currency will improve the trade balance if the sum of the elasticity of the demand for imports and exports with respect to the real exchange rate is greater than one (Frankel and Jones, 2002).

Suppose that the balance of trade is expressed in domestic currency. On one end, if the demand for imports has zero elasticity, then the value of domestic imports will rise and for the balance of trade to improve, the value of exports in domestic currency has to rise by more than the full percentage of the real devaluation. On the other hand, if the elasticity of demand for exports is zero. Then following a real devaluation, the value of exports in domestic currency will remain the same. In order for the balance of trade to improve, the value of imports in domestic currency has to decrease and this is the case when the elasticity of demand for imports is greater than one.

In the event of a real devaluation, if each of the elasticity is less than one, but the sum is greater than one, then the increase in exports will be more than offset by the increase in imports both valued in domestic currency thusly improving the balance of trade. Empirical studies have shown that the Marshall- Lerner condition has been fulfilled in most countries but only after a sufficiently long period of time to allow export and import volumes adjust to changes in relative prices (Marrewijk, 2005).

2.2.6 General Equilibrium Theory

This theory is based on simple market where the price of any commodity is determined by market forces. When the nation's BOP is in deficits, the exchange rate depreciates, and when BOP is in surplus, there will be healthy foreign exchange reserves, leading to the appreciation of the home currency. Thus according to this theory the exchange rate is basically determined by the demand for and the supply of foreign currency in concerned nations. The BOP theory of exchange rate determination is more satisfactory than the

PPP theory of exchange rate determination since it recognizes the significance of all items in the BOP. However, it's based on the unrealistic assumption such as perfect competition in foreign exchange market and ignores the link between domestic price level and exchange rate determination

2.3 Foreign Exchange Market

Foreign exchange is the process by which the currency of one country is exchanged into currencies of other countries. Exchange rate is the price of domestic currency in terms of a foreign currency (Exchange Control Act, 1967). Foreign exchange market provides the physical and institutional structure through which the money of one country is exchanged for that of another country. The market is an over-the-counter market and does not denote a particular place or floor where dealers converge and transact foreign currencies (Sharan, 2001).

Melvin (1989) explains three reasons why foreign exchange market exist: Firstly, they provide power from individuals who normally deal in one currency to other people who generally conduct business –importation and exportation- using other monetary units, secondly, is that they provide means for passing the risks associated with changes in exchange rate to professional risk takers and thirdly, is for the provision of credit for international trade transactions.

Since independence, Kenya has had its local currency (Shilling) pegged to the SDR. The shift from fixed to flexible exchange had been gradual in many developing countries including those in Africa. Such shifts are attributed to the collapse of Bretton Woods System in the early 1970s but most LDC used to peg their exchange rates either to a single key currency or to a basket of currencies. The increase in flexibility in the exchange rates have associated with a shift towards increased openness, increase in international capital flows to developing nations and more outward looking policies of trade (IMF, 2000).

Kenya's economy during the 1960s and 1970s was predominantly characterized by controls in all key sectors i.e. on domestic prices, interest rates, foreign exchange transactions and import licensing. However, with a series of external shocks, this approach to macroeconomic management became inadequate. As was the case in

1973/1974 oil price increase which the economy was hard hit until the government liberalized the economy following the structural adjustment policies (SAPs). As a result, the exchange rate policy was changed to a crawling one (Ndung'u, 1997).

In 1990s, liberalization was intensified and this made prices in markets to be decontrolled, foreign exchange controls relaxed and interest rates liberalized. The Shilling was depreciated against the dollar by 22% by CBK in 1992 and this saw the exchange regime change to a dual system which included the 'official exchange rate' and the 'market rate'. The 'market rate' operated on the basis of the Foreign Exchange Bearer Certificates (FEBC) which were purchased at the official exchange rate from CBK in foreign exchange and then marketed as any other paper asset (Ndung'u and Ngugi 1999). This was seen as a relief in the foreign exchange market as it entitled the bearer to some amount of foreign exchange without going through the time-consuming foreign exchange licensing process.

In January 1993, the FEBC were suspended allowing exporter to retain portions of their foreign exchange earnings while importers were forced to purchase their foreign exchange from commercial banks. The essence was to raise rate of inflation and inflationary expectations however, speculation became prevalent as the market was characterized by uncertainty as regards future foreign exchange rate on the balance of trade. In an attempt to avert the crisis, the exchange rate was devalued three times in the first half of the year (Were, et al., 2001). By November 1993, the government had done away with 'official exchange rate' and allowed the public to hold foreign exchange.

Kenya like most other countries has experimented with virtually all types of exchange rate regimes ranging from fixed to crawling peg to floating rates. The exchange rates are now a 'managed floating' system which is a condition of IMF. This designation allows the monetary authority to intervene to control the exchange rate, but no specific level is set as a target rate unlike the fixed systems. If a country's currency is depreciating, the country's central bank may decide to intervene in the foreign exchange market by creating artificial demand for its currency.

The resulting demand stops the currency's depreciation but also acts to reduce the domestic money supply in two ways. First the bank is directly removing some of the nation's currency from circulation as it buys it up. Secondly the intervention can create or worsen a current account deficit due to the propped-up exchange rate being more favorable for importers than for exporters. This deficit sends money out of the economy, further decreasing liquidity. The resultant lowering of the money supply will likely have a deflationary effect which can be undesirable especially if the country already has substantial unemployment. A sterilized intervention against depreciation can only be effective in the medium term if the underlying cause behind the currency's loss of value can be addressed.

A country's exchange rate is a key determinant to its Gross Domestic Product as was evidenced in the deterioration of the Kenyan's economy in terms of key macroeconomic variables. The shilling depreciated to 32% against the Dollar from July to October 2011. Kenyan exporters gained a lot from the depreciation of the shilling against other world currencies while importers suffered as domestic value added prevailed over the increase in the cost of imported goods in the country. With the depreciation of the shilling against hard currencies, Kenyans suffered the brunt as commodity prices hiked to unimaginable levels, while exports such as tea and horticultural products saw traders smile all the way to the bank as they gain from the falling state of the shilling.

2.4 Empirical Studies

Different studies have been carried out in the past to establish the relationship between fluctuations in foreign exchange rate and balance of trade especially after the collapse of Bretton Woods in which foreign exchange rate became highly volatile. The studies carried out have reported mixed results; Njuguna (2001) in his study of foreign exchange market in Kenya during 1990s, found out that exchange rate had been volatile. Studies explaining the relationship between foreign exchange rate and other variables in the floating era are scant in Kenya and this is because the existing studies have concentrated on application of traditional models based on the interest rates and purchasing power parity.

Traditional models explaining relationship of exchange rate and international trade in the view of exchange rate volatility based on producer theory where profitability is related to exchange rate fluctuations point to a positive relationship. Cushman (1988) in his theoretical study on the effects of real exchange rate on international trade showed that an increase in exchange rate volatility had an adverse effect on the volume of international trade. Baum (1996) in his study on the effects of exchange rate volatility on the volume of bilateral exports found out that an increase in the exchange rate volatility may not necessarily lead to an adverse effect on the level of trade when hedging opportunities exist.

Ndung'u and Ngugi (1999) in their study on adjustments and liberalization of foreign and financial markets found out that growth in imports was positively related to exchange rate fluctuations in the short run. They opined that the immediate impact has been a flooding of imports and concluded in their finding that the error correction term, which was normalized with real exchange rate indicated that any imbalance in exchange rate would discourage imports since GDP spurs imports. In recent study by Nyamwange (2009) on the 'relationship between exchange rate and International trade in Kenya', found out that price of imports is negatively related to the quantity imported of which is in line with expectations.

Sowa and Acquaye (1999) indicated in their study pertaining liberalization of financial and foreign markets in Ghana that the quantity of exports of any country depends on the exchange rate and the GDP of its trading partners. They concluded that exchange rate had a weak impact on exports while depreciation increased imports which are contrary to the accepted wisdom. Similar study by Cornia and Lipumba (1999) in the Sub-Saharan Africa found out that effect of liberalization lead to positive but low interest rates, greater savings and credit allocation to projects with high returns, increase in exports and more rational allocation of foreign exchange. Despite considerable efforts on liberalization in Developing countries, neither traditional nor non-traditional exports have increased significantly.

Pozo (1992) while conducting a study on conditional exchange rate volatility and volume of International trade suggested that exchange rate volatility lead to insignificant

reductions in its relationship with trade volumes. On the other hand, De Grauwe (1987) in the study of exchange rate fluctuations and growth of international trade showed an increase in exchange rate volatility may be beneficial for trade. When exporters are risk-averse, a positive relationship may still arise risk-averse because the risk-averse firms will worry about worst possible scenario. As risk increases, the only way to deal with decline in export revenues is by increasing export volumes.

Uwazurike (1990), in his study to analyze redemocratisation process in Nigeria during the late 1980's when it experienced devaluation in its national currency (naira) to a level never witnessed in the history of Nigeria. The naira depreciated against the US dollar by 30% from \$1= N5.3530 at the end of the fourth quarter of 1988 to \$1=N7.6500 at the end of the fourth quarter of 1989. This affected its economic development as capacity utilization dropped to 31% in June 1989 and again to 29% during July-December 1989 from 40% in period of 1988 (FBN, 1990). The decrease in capacity utilization reduced inflow of foreign currency into the Nigerian economy since the low exchange rate made it difficult for domestic industries to purchase raw materials.

As Johnson (1987) asserts, production and investment in developing countries rely heavily on foreign raw materials and capital goods therefore, currency depreciation affects importation. Its debt stock amounted to US \$36M and was attributed to the low exchange rate and under capacity utilization because the foreign inflow from oil was not enough to pay for raw materials. According to Kagai (2009), in his study on the 'survey of foreign risk management practices by textile firms in export processing zones in Kenya', the Kenyan shilling was found to have suffered a reduction in its value compared to other trading partners. This had an impact on the economy where imports became expensive and it was difficult for the manufacturing sector to produce goods which would be exported.

Warr (1999), in his review of the 1996 global glut in the semiconductor industries and decrease of trade in East Asia when Thailand experienced a decline in its export found out that; there were increased financial worries due to overproduction in real estates, collapse of Bangkok bank of commerce that downgraded Thailand's notes and deposits from Prime 1 to 2. The baht was attacked in early 1997 as revealed by the banks; the

inflows fell to \$ 320 M from \$2B and were accompanied by erosion of international reserves. Thailand's current account deficit failed to rise as a result of import stagnation.

A report by Cline and Barnes, 1997 showed that on July 1997, the Thai government succumbed to the pressure and allowed the exchange rate to float making the baht to lose one-fifth of its value against the dollar. Kaminsky (1999) refers to Thailand as constituting 'the perfect picture of the typical financial crisis' and finds that the probability of a currency crisis rose from 20% in 1995 to 100% in mid 1997. Overvalued exchange rate, rising wages, decrease in output and large current account deficit contribute to the devaluation of the baht.

The weakened fiscal policy resulted in a deficit following the fourth quarter of 1996, after nine consecutive quarters of fiscal surpluses. Failure to incorporate the implicit liabilities of the government since companies were faced with insolvency as a result of real estate and stock market bust also contributed to the currency crisis. The crisis was consistent with a classic KFG style monetary disequilibrium induced by an expansion of credit by the bank of Thailand to domestic financial institutions (Calvo, 1996).

According Mallick and Marques (2007), in their study on impact of policy reforms in India; found out that a move to a flexible exchange rate allowed gradual exchange rate depreciation to offset the effects of import liberalisation and tariff reduction Ahluwalia (2006) suggests that significant currency depreciation is needed to reduce import demand following import liberalisation and more flexible exchange rate may neutralize the impact of any terms of trade shocks on the current account. Existing empirical evidence shows that the deviations from the law of one price are large and persistent, and the phenomenon of ERPT is country- and even product-specific (Koch and Rosensweig, 1992).

2.5 Conclusion

In recent years, the growing global external imbalances have motivated renewed interest to investigate the link between changes in a country's exchange rate and the prices of traded goods. This becomes even more important in emerging market economies undergoing trade liberalisation and adopting floating exchange rate systems, which seem

to have revitalised the potential impacts of exchange rate movements on traded goods prices. Given its implications for a country's terms of trade, the evidence on pass-through allows an understanding of trade imbalances between developed and emerging market economies. Besides, the degree of ERPT is also critical for the assessment of monetary rules. Devereux *et al.* (2006), as changes in exchange rate can lead to a rise in import prices and thus spur overall inflation. Furthermore, the response of local-currency prices of imported products to changes in exchange rate may not be one-for-one, as has been debated in the case of many advanced markets.

Studies that have been carried out within Kenya (Ndung'u and Ngugi, 1999) and outside Kenya (Pozo, 1992 and Baum, 1996) have not shown clear relationship between foreign exchange fluctuations and balance of trade. Exchange rates seem not to be emerging in many studies as being significant since GDP is also a key factor in determining growth of trade. The exchange rate is good for exports but bad for imports; exporters can benefit from a weaker currency only if the domestic prices are stable.

Most of the existing studies have looked at the behaviour of firms in larger high-income countries, either US, Japanese and German exporters practicing pricing-to-market. It has been concluded that Japanese and German exporters tend to accommodate exchange rate changes, whereas US exporters keep margins constant and pass-through any exchange rate changes. Empirical studies have provided substantial evidence of incomplete relationship between balance of trade and exchange rate fluctuations and or based on the theories.

This study not only challenges the view that exchange rate fluctuations unambiguously deters trade but also provides a theoretical explanation for the mixed empirical evidence by pointing out the key relationship between foreign exchange rate volatility and balance of trade, an aspect that has been ignored in the literature so far.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter entails the description of selected research design in the plan structure and strategy of investigation conserved so as to obtain answers to research question. This includes the research design, population, data collection and data analysis and the model.

3.2 Research Design

The researcher used descriptive research design to describe the relationship between foreign exchange fluctuations and balance of trade. A descriptive research design was used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to the variables in a situation. According to Glass & Hopkins (1984), descriptive research involves gathering data that describe events and then organizes, tabulates and describes the data collected. The design was appropriate as it allowed the researcher to gather in-depth information used to answer research question in the study. This method further gave an in-depth understanding on balance of trade that is, it gave intensively the background of the current status and environmental interaction thus portraying the actual picture of the situation (Mugenda, 1999).

Ngechu, (2002) states that a descriptive study brings about several advantages, these are; it helps give testable hypotheses, it educates conjecture, brings out correlation relationship e.g. young machinists who are under 35years of age are less productive than those who are 35 years of age or older. It also brings out an explanation based on cause and effect "help make happen" where the dependent variable being the causal agent on dependent variable e.g. an increase in family income leads to an increase on the percentage of income saved.

3.3 Population

A population is a well defined set of people, services, elements, events and group of things or households that are being investigated (Ngechu, 2004). Target population in

statistics is the specific population about which information is desired since; in most cases it is not possible to study the entire population. A census was done on all commercial banks in Kenya because banks are well organized and file their returns to CBK regularly. Commercial banks control a significant proportion of the entire foreign exchange market thus form the basis upon which CBK compute both daily and monthly indicative exchange rates. The investigation was carried out with an aggregate annual data between the years 2007 to 2011.

3.5. Data Collection

The study utilized secondary data on an annual basis between the periods of January 2007 to December 2011. Data on Foreign exchange rates was obtained from CBK reports while data on balance of trade was obtained from the Kenya Bureau of Statistics.

3.6. Data Analysis

The collected data was properly analyzed Coppers and Schindler, (2000) to detect errors and omission so as to ensure it was accurate and consistent with intent of the question and other information in the study. In order to investigate the relationship between exchange rate fluctuations and balance of trade, the Pearson's product moment method of correlation was used to estimate the parameters. For further analysis, regression method was used to determine the significance of the contribution of the specific variables to import and export volumes. Coded data was then tabulated in Statistical package for Social Science (SPSS version 16.0).

3.6.1 Analytical Model

The independent variable was the exchange rate and was computed through a weighting process. The importance of using a trade weighted exchange rate is that it's a reflection of international competitiveness. The dependent variable on the other hand was the balance of trade (exports and imports) and GDP. The GDP was an indicator of economic growth and signaled the direction of overall economic activity. Exports are responsible for cash inflow which increases the nation's GDP while imports decreases nation's GDP. A higher GDP growth rate than expected will tend to appreciate the exchange rate.

A model used by Singh (2002) and Rose (1991) explains that trade balance is a function of real exchange rate and the domestic and foreign real income. The model is expressed as follows:

$$TB = \alpha + \beta_1 REER + \beta_2 GDP_d + e$$

Where:

α = constant

TB = logarithm of balance of trade.

$\beta_1 REER$ = logarithm of real effective exchange rate

$\beta_2 GDP_d$ = logarithm of gross national product

e = error term

The trade balance (TB) is expected to depend on the real exchange rate (REER) and a measure of domestic and foreign income (GDP) respectively, that is, on the main determinants of import and export. As explained above all variables are expressed as logarithms. The main interest is to explore whether in the long run real depreciation of currency will improve trade balance, and the other way round in case of appreciation. For this to hold the coefficient on real exchange rate should be positive: $\delta > 0$.

The above model suggests that exports and imports increases as real income of the trade partners and domestic income increases respectively and vice versa. We expect that $\beta_1 < 0$ and $\beta_2 > 0$. However, imports may decline as income increases if the real income rises due to an increase in the production of import-substitute goods, and in that case we would expect that $\beta_1 > 0$ and $\beta_2 < 0$. In order to estimate the effect of exchange rate on trade balance, we should control for the effect of domestic income, hence inclusion of gross domestic product (GDP_d) in relation. However the impact of GDP_d on TB , and hence the sign of coefficient β , is ambiguous and could take any sign, positive or negative.

The REER is defined as the weighted average of the currency of a country relative to an index of other major currencies adjusted to factor in inflation effects. These weights are determined by doing a comparison of the relative trade balances in terms of one country currency with other country in the same index.

The error term (e) is used in calculating the trace test to ascertain whether the null hypothesis of no co-integration is rejected or accepted. If the trace statistic is larger than the 5 % critical value, then the null hypothesis of no integration is rejected. However, the null stating that there is at most one co-integrating vector cannot be rejected as the t value is less than 0.05. Generally, if depreciation takes place, which causes the real effective exchange rate to increase, the exports increase and the imports decline as a consequence and it improves the trade balance.

The error component (e) is comprised of factors that are unobservable or at least unobserved and the parameters α and β are also unobservable. The task of regression analysis is to produce an estimate of these two parameters, based upon the information contained in the data set. Regression analysis assumes, however, that the error term has no systematic property, but is on average equal to zero. This assumption suggests that an estimate of the line that lies roughly in the midst of the data. Regression analysis does so by embracing a criterion that relates to the “error” for each observation.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of data collected from secondary sources on an annual basis between the periods of January 2007 to December 2011. The data was divided into two sections that covered the objective of the study. Foreign exchange rates data was obtained from CBK report while data on balance of trade was obtained from the Kenya National Bureau of Statistics. The findings were later discussed as per the analyzed data from the above sources.

4.2 Regression Analysis

Regression analysis is a statistical tool that is normally used to investigate relationship between variables. Usually the researcher seeks to ascertain the casual effect of one variable upon another. The trade weighted indices computations were based on a basket of currencies with 2009 being the base year. The Kenyan Shilling weakened against most of the selected trading currencies of which is attributed to the rapid rise in prices of imported manufactured goods and oil coupled with economic showdown in Europe (Euro crisis).

Table 4.20 Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.973 ^a	.947	.893	5.91964E10

Source: Research Findings

The research findings indicated that there was a strong positive relationship ($R= 0.973$) between the variables. The study also revealed that 94.7% of Kenya's balance of payment can be explained by the independent variables. From this study, it is evident that at 95% confidence level, the variables produce statistically significant values for this study when combined hence can be relied on to explain Kenya's balance of payment.

Table 4.21 Coefficients

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	3.024E10	5.582E11		.054	.962
	Overall Weighted Index	6.458F9	9.059F9	.305	.713	.550
	Gross Domestic Product	-500109.733	171392.101	-1.248	-2.918	.100

Source: Research Findings

The research study wanted to establish the significance of the variables to balance of payment. From the research findings, it was evident that at 95% confidence level, the variables together produce statistically significant values for this study (high t-values, $p < 0.05$). Positive effect was reported on the overall weighted foreign exchange index ($\beta_1=0.305$). However, a negative effect was reported for gross domestic product where ($\beta_2=-1.248$).

Table 4.22 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.243E23	2	6.217E22	17.743	.053 ^a
	Residual	7.008E21	2	3.504E21		
	Total	1.314E23	4			

Source: Research Findings

The results of the regression equation above shows that for a 1- point increase in the independent variables, Kenya's balance of payment is predicted to increase by 3.024E10, given that all the other factors are held constant.

From the research findings above, the equation for the regression model is as expressed;

$$TB = \alpha + \beta_1 REER + \beta_2 GDP_d + e$$

$$TB = 3.024E10 + 0.305 REER - 1.248 GDP_d + e$$

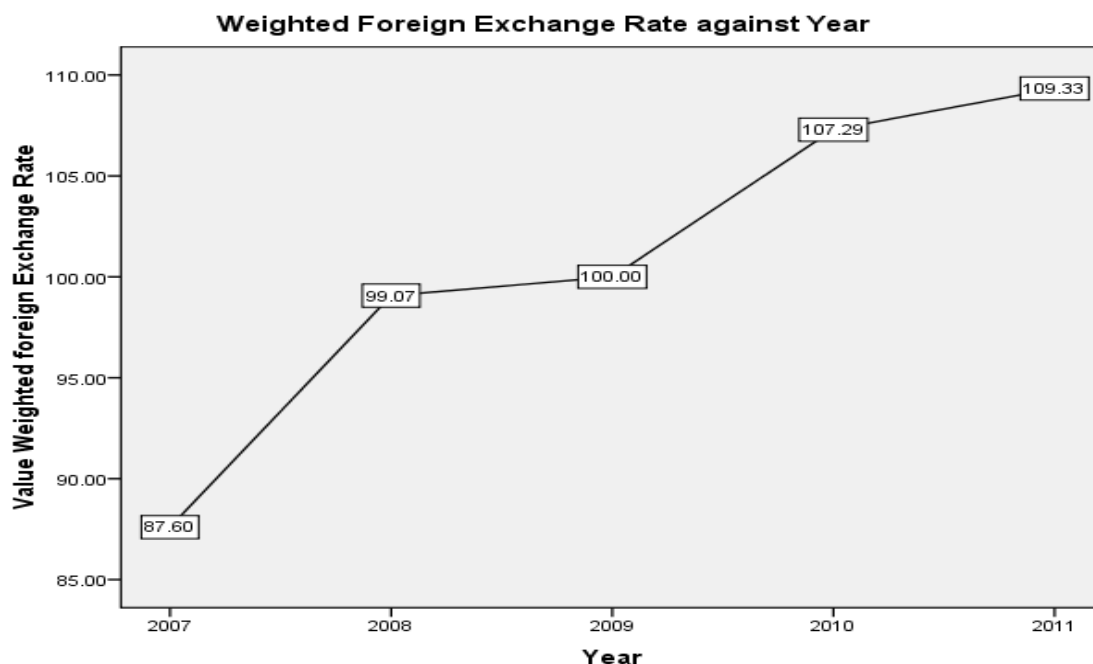
TB = logarithm of balance of trade.

$\beta_1 REER$ = logarithm of real effective exchange rate

$\beta_2 GDP_d$ = logarithm of gross national product

Real depreciation of currency will improve trade balance, and the other way round in case of appreciation. The coefficient on real exchange rate should be positive $\delta > 0$ i.e. 0.305. However the impact of *GDPd* on *balance of trade*, and hence the sign of coefficient β is ambiguous.

Graph 4.1: Weighted Foreign Exchange Rate against Year



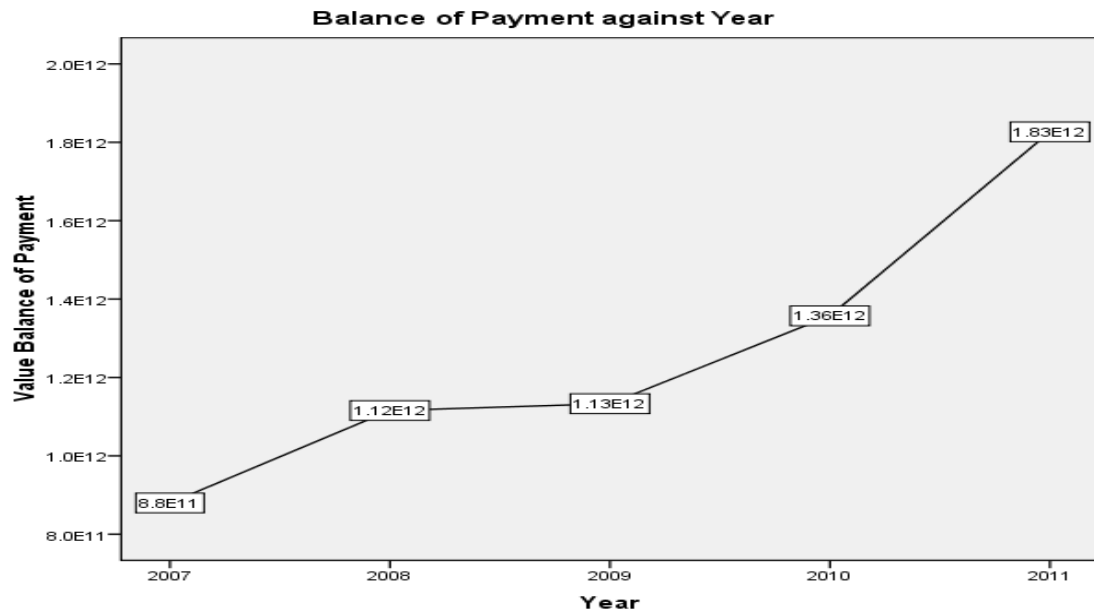
Source: Research Findings

The trade weighted indices computations were based on a basket of currencies with 2009 being the base year. The mean exchange rate is computed as a simple average of the mean buying and selling exchange rate prevailing at any trading day. The Kenyan Shilling weakened against most of the selected trading currencies as reflected in the trade weighted exchange rate index, which rose by 1.9 per cent from 107.3 to 109.3 in 2011.

The depreciation was attributed to the rapid rise in prices of imported manufactured goods and oil coupled with economic showdown in Europe. In addition to that, a 38.9 per cent increase in the import bill vis-à-vis a relatively slow growth of 24.7 per cent of export earnings contributed to a higher trade deficit, which in turn contributed to the

depreciation of the Kenyan shilling.

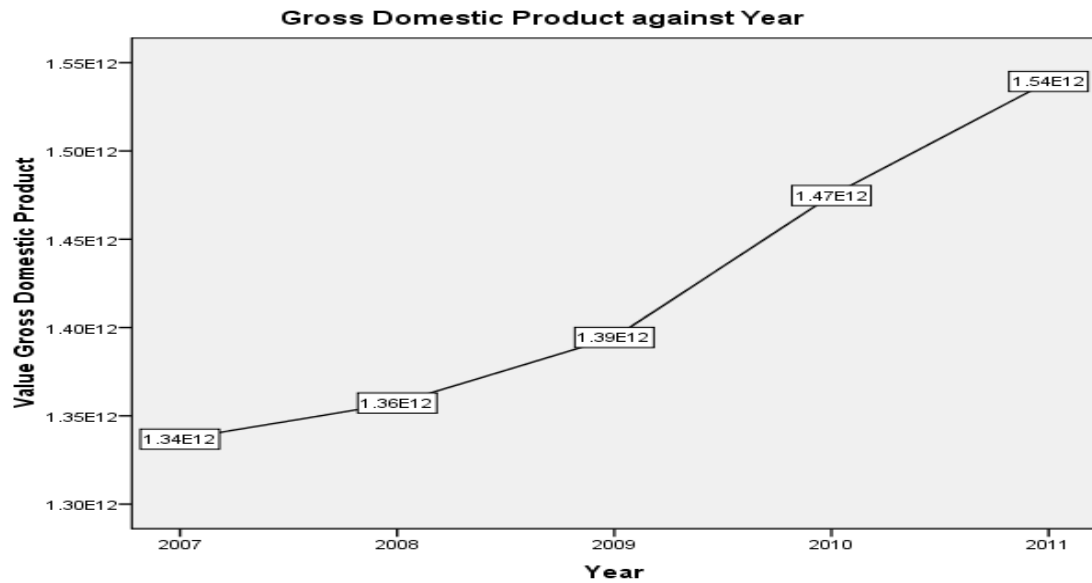
Graph 4.2: Balance of Payment against Year



Source: Research Findings

The volume of international trade increased by 34.6 per cent due to increase in both total exports and imports from 2007 to 2010. Total exports and imports rose by 24/7 per cent and 38.9 per cent from 2010 to 2011 respectively. Trade balance widened further from a deficit reflecting a deterioration of 49.7 per cent and this was attributed to high import bill on machinery and transport equipment, mineral fuels and manufactured goods.

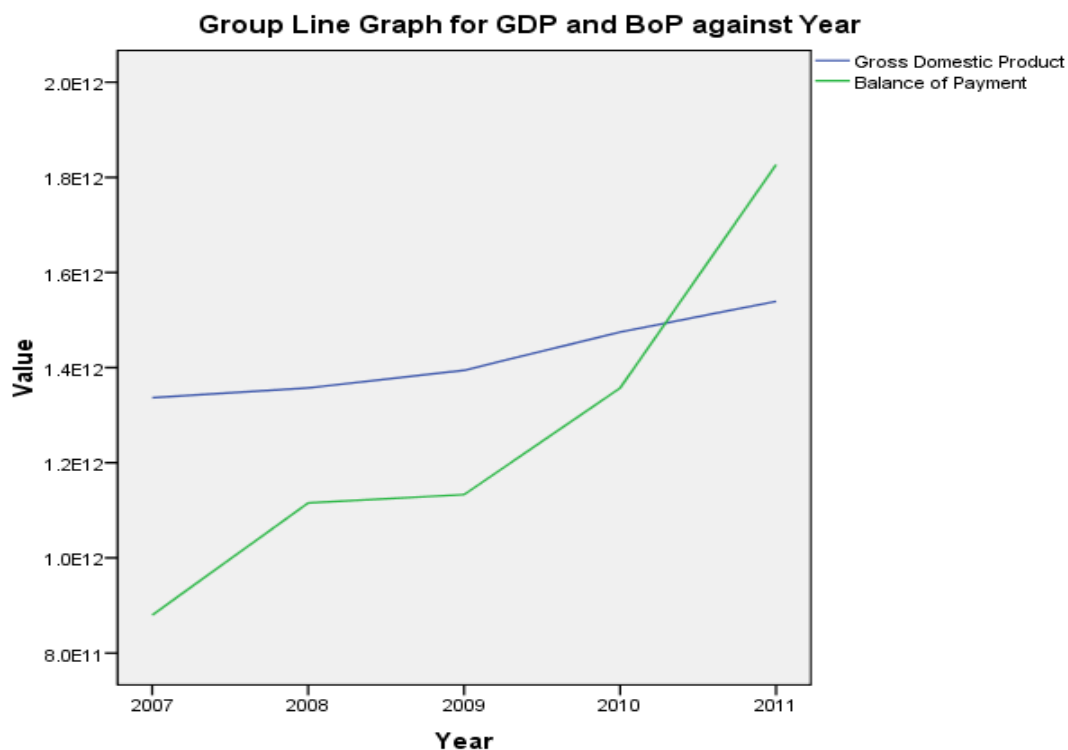
Graph 4.3: Gross domestic Product against Year



Source: Research Findings

Disposable income is a measure of the amount available for final consumption and gross saving in the economy after receiving and remitting both primary incomes and current transfers. The graph shows that about two thirds of investments in Kenya were financed through gross savings while external borrowing and capital transfers from abroad provided the rest of capital financing. Gross savings as a ratio of GDP and GNDI improved from 11.3 percent in 2010 to 13.2 and 12.2 per cent in 2011.

Graph 4.4: GDP and BOP against Year



Source: Research Findings

Exports and imports are derived from Goods account. A positive entry indicates a change that improves the balance of payments outcome and a negative indicates a change worsening the GOP outcome. Thus, an increase in imports or reduction in exports is marked as negative.

4.3 Interpretation of Findings

The trade balance is expected to depend on the RER and a measure of domestic and foreign income respectively, i.e. on the main determinants of import and export. It is found that in the long run real depreciation of the currency leads to an improvement in the trade balance. The estimated elasticity of 0.305 shows that a one percent real depreciation invokes almost the same improvement in trade balance, and the other way round when currency appreciates. Upon preliminary testing, it turned out that foreign income was not statistically significant. An increase in domestic output raises imports but

could also boost exports, and the net effect on the trade balance could either be an improvement or a worsening. On the other hand, the demand for an increase would lead to trade balance deteriorations.

It was clearly found out that variations on domestic GDP has a small but permanent positive effect on the trade balance while foreign GDP has a larger positive effect on the trade balance; this is associated with greater demand in foreign exchange on export goods. An additional result that emerged from the estimates of the trade balance equation showed that an increase in domestic output (*GDPd*) improves the trade balance. Thus the estimates (1.301E12 and 1.248) suggest that a one percent increase in *GDPd* leads to a two percent improvement in the trade balance. This implies that supply side factors have been important in driving output growth in Kenya, and consequently enhancing its export.

A closer look at the impact of *GDPd* on import and export respectively showed that it is significant in the former case while somewhat inconclusive in the latter. Granger causality tests It was confirmed that import was the dependent variable as it turned out to be an endogenous variable, whereas *GDPd* and real effective exchange rate (*REER*) were weakly exogenous variables. As expected, import increases with *GDPd* growth and a real appreciation of the currency with a corresponding long run.

A long term trend showed that additional factors might drive an increase in imports while on the other hand, clear cut effects of *GDPd* on exports have not been found for the whole period. Preliminary estimates indicated that the co-integration between exports and *GDPd* might be present with *GDPd* being weakly exogenous. This implied that domestic output (*GDPd*) growth accounted for the increasing exports. Moreover, an estimate of *GDPd* impact on exports was far above the one on the import.

It was found out that there is a long run relationship between balance of trade, exchange rate, foreign and domestic GNP, showing that depreciation leads to trade balance improvement. However, terms of trade explains the largest proportion of the variation in

the real exchange. The value in foreign exchange terms of total export and import of goods are used to obtain the balance of trade, which is defined as ratio of import over export. Thus a decrease in the trade balance variables implies its improvement.

The main findings of the paper showed that real exchange rate depreciation has a significant positive long run impact on the trade balance in Kenya and that in the short run trade balance first deteriorates before it later improves. The corresponding error of trade balance captured its short run movements and indicated the existence of the J-curve effect. In other words, it showed that exchange rate depreciation has a negative impact on the trade balance in the first few months. Combining this result with the one in the long run (i.e. an improvement of trade balance), one obtains the J-curve effect of depreciation on the trade balance. Thus the results obtained for Kenya add to evidence found in other countries that currency depreciation improves trade balance in long run, and does so with the Jcurve effect.

A side result of this paper is that domestic output growth (*GDPd*) leads to an improvement of the trade balance. This implies that output growth boosts export more than it increases import. Some estimates of export and import functions tentatively support the result above, but additional research is necessary to conclusively resolve this issue. The findings concluded that although there was a relationship between the RER, exports and imports, the relationship was insignificant. This calls for a rethinking of the strategies practiced in a number of countries for manipulating RER in an effort to enhance the International trade. The study suggests that GDP is a much more important indicator in the determination of international trade.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter was to discuss the summary, conclusion of the study and to suggest recommendations. This chapter contains four major sections; the first part contains the summary and conclusion of the major findings of the study. The second part suggests policy recommendations, the fourth part explains the limitation of the study and lastly the fourth part gives areas for further research as pertains the study.

5.2 Summary

This study addressed the question of whether there is a relationship between foreign exchange and balance of trade in Kenya during the exchange fluctuation period from the year 2007 to 2011. While the elasticity model of the balance of trade (Krueger, 1983) has shown the existence of a theoretical relationship between exchange rate and the balance of trade, the empirical studies on this relationship have been minimal. By examining exports and imports in Kenya for the period 2007-2011, this study found that the relationship of the real exchange rate and balance of trade has been exaggerated.

The Kenyan Shilling's recent depreciation does not appear to have significantly influenced Kenya's export competitiveness so far as the strong demand in Africa has helped Kenya's export expand. The major findings of this study were:

There is no significant relationship between export and RER.

There is no significant relationship between import and RER.

Though it is evident that the real exchange rate does influence international trade in Kenya, other factors seem to influence international trade more, such as the GDP. From the analysis of the study, it is evident that GDP seems to have a more significant relationship with imports compared to other variables. It is thus proper to recommend from the findings of the study that Kenya should concentrate on improving its GDP. In

agreement with this, Hussein (2002) in his study of ASEAN countries stresses that the exchange rate alone should not be used in managing the external balances of these ASEAN countries as exports in Kenya have been found to relate more strongly with GDP.

5.3 Conclusion

The main findings of this paper are that real exchange rate depreciation has a significant positive long run impact on trade balance in Kenya, and that in the short run trade balance first deteriorates before it later improves. Another finding is that domestic output growth (GDPd) leads to an improvement of the trade balance. This shows that output growth boosts export more than it increases import but additional research is necessary to conclusively resolve this issue.

Terms of trade and interest rate also have long run relationship as they appreciate real exchange rate in the long run while a more open economy is associated with a real depreciation of the exchange rate. This results therefore, for the most part, collaborate both the theoretical and findings from previous research.

With the findings, it is possible for the planners of the economy to make budget forecasts by use of the exchange rate changes. The forecasts can help to determine how much the country can benefit from the positive balance of trade with its partners. As well as the balance of trade's response to the exchange rate deprecation, forecasts can also be done to determine how the balance of payment responds to the domestic output growth.

5.4 Recommendations for Policy

This research was conducted to determine whether there exists a relationship between foreign exchange fluctuations and balance of trade in Kenya. The results concluded that there was a relationship and the need for further investigation into the relationship with other variables such as inflation and interest rate.

The real exchange rate is influenced by factors that are way outside the direct control of policy makers, such as the terms of trade which explains the variation in exchange rate. The authorities may however reduce the impact of this variation in the long run by

utilizing policies to promote the diversification of traded goods. The government through the treasury should intervene in regulating the foreign exchange rate using hybrid system and not leave the entire decision to be made by the CBK as concerns exchange rate policies.

The government should also engage in measures such as devaluing the currency in order to boost exchange rate especially during high productivity when exports are on high demand. Since the impact of the exchange rate adjustment on trade balance is ambiguous given the absence of a more stable long run relationship, it is advisable to rely on currency appreciation in order to correct trade surplus. The Kenyan government could also engage in exchange services to boost export of Intellectual property through research and skills as this will create demand for foreign currency.

There is significant evidence that large foreign direct investments have led to a significant increase in exports in Kenya. The government should seek to strike a balance in the exchange rates so as to boost its exports. Even though currency manipulation may in the long run discourage fair regional trading, the government should seek ways of controlling the supply of money in order to harness the balance of trade benefits.

There should be a focus on further research on the period from 2007 to 2011. This is the period when there was initiation of serious economic reforms. There should be further studies to determine if the manipulation of currency can have net positive effect on the economy of the country and if it can help in boosting trade.

5.5 Limitation of the Study

The study concentrated on the relationship of foreign exchange fluctuations and balance of trade in Kenya. It relied on secondary data which was extracted from CBK statistics which was prepared by the management of the regulatory authorities who are prone to errors. Given that there is no any other independent data source to compare with the one from the regulatory authority; the data can be challenged because it may not be representative.

They may also be subject to manipulation in order to show favorable statistics of the economic indicators. This may lead to large errors which in turn may prevent us from accurately identifying any changes in export and import volume due to the RER. The findings therefore may risk having a valid conclusion which is based on subjective data.

Another limitation was the volatility in the export and import which made it difficult for economic estimates to fully capture the effect of the exchange rate. Volatile markets in the exchange rate and international trade denied the researcher a chance to analyze data which is based on equilibrium market conditions.

5.6 Areas for Further Research

The areas for further research that emerge from this study include covering the gap that has been left by this study as concerns the relationship between exchange rate and balance of trade. Other issues concern measurement of actual real exchange rate and the proxies represent actual real exchange rate determinants and how it may improve performance of the empirical real exchange rate models.

There should be further studies relating to exchange rate fluctuation. The effect of exchange rate fluctuation on foreign direct investment should be done. Since foreign direct investment is a major determinant of GDP and helps to boost income. It can also be used as an indicator of growth for a country in terms of cash inflow. Factors used to gauge foreign direct investment when measuring economic growth and development can also be established.

Exchange rate can also have effects on inflation of the economy. Here, there should be research to establish to what extent the fluctuation affects inflation. Floating of currency and putting controls on currency trading can have effects on the economy. This should be established by doing a research that can put comparison between the period when Kenya had currency market controls and when it floated its currency.

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