

**THE EFFECT OF EXCHANGE RATE FLUCTUATIONS ON GROSS
DOMESTIC PRODUCT IN KENYA**

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DECLARATION

This research project is my original work and has not been presented for a degree in any other institution.

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DEDICATION

I dedicate this work to my dad and mom James Oude and Joyce Oude for the support they gave me. God bless you all.

ABSTRACT

This study examines the Effect of Exchange Rate fluctuations on Gross Domestic Product in Kenya from 2008 to 2012. Two theoretical views have been put forward; first view states that, a real appreciation of domestic currency lowers the cost of imported raw materials leading to an expansion of output while the traditional view states that a real appreciation lowers international competitiveness, which, in turn, causes net exports to fall and hence a reduction in the aggregate demand.

The model of this study did decompose GDP as a function of exchange rate, inflation, exports, imports and government expenditure. Regression was conducted to test the impact of the variables on GDP and showed that government expenditure impacted highly on GDP.

Findings indicated that, exchange rate fluctuations has significant adverse effects on GDP, contracting the growth of real output and the demand for investment and exports, while raising inflation. Monetary policies should be put in place to ensure inflation persistence are minimized and to ensure stability of exchange rates in Kenya.

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LIST OF ABBREVIATIONS

CBK-Central Bank of Kenya

FDI-Foreign Direct investments

GDP- Gross Domestic Product

KNBS- Kenya National Bureau of Statistics

MENA-Middle East and Northern Africa

OCA-Optimum Currency Area

PPP-Purchasing power parity

RER-Real exchange rate

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

During the era of the fixed exchange rate regime, that covered the period of 1966- 1992, Kenya, like many developing countries, had to frequently devalue its currency in an attempt to reduce the negative effects that RER volatility had on its economy. The adoption of a floating exchange rate system in 1993 marked the climax of efforts to make the RER more aligned to the market determined equilibrium RER, and thus eliminate RER volatility. There is, however, no available evidence that success has since been achieved in realizing the objective for which the foreign exchange market was liberalized. Large volatilities in nominal exchange rates have since characterized Kenya financial market (Kiptoo 2007).

In 1990 a dual exchange rate system was then adopted that lasted until October 1993, when due to further devaluations the official exchange rate was matched with the interbank rate and the shilling was allowed to float. This was preceded with the abolition of all controls in imports and foreign exchange transactions. The Liberalization stimulated foreign demand and brought about an increase in foreign exchange proceeds from exports. Though the liberalization has brought about positive effects on Kenyan trade, it has left the country vulnerable to the effects of exchange rate variability on import, producer and consumer prices (Ndung'u, 2002).

The shift from a fixed to a flexible exchange rate regime has been one that many developing countries in recent years have been adopting. According to Were (2001), exchange rate regimes determine the ability of an economy to effectively respond and adjust to exogenous shocks. In developed countries the shift in exchange rate regimes occurred in the 1970's after the collapse of the Bretton Woods System which had been in existence since the end of World War II.

According to Nandi (2008), one of the objectives of the Bretton Woods System was to maintain a fixed exchange rate. This was essential at the time as there was an urgent need to take care of the international payments system that was vital for world trade and commerce.

Exchange rate policies in developing countries such as Kenya are often sensitive and controversial, mainly because of the kind of structural transformation required, such as reducing imports or expanding exports, which invariably imply a depreciation of the nominal exchange rate. Such domestic adjustments, due to their short- run impact on prices and demand, are perceived as damaging to the economy. Ironically, the distortions inherent in an overvalued exchange rate regime are hardly a subject of debate in developing economies that are dependent on imports for production and consumption.

These suggest that exchange rates move slowly towards their long-term equilibrium which is their purchasing power parity – the exchange rate that equalizes the price of a basket of identical traded goods and services in two different countries. PPP aims to measure the true value of a currency in terms of the goods and services it will buy.

In the short-term however, exchange rate fluctuations are mainly due to speculation. Spectators will react to news about economic performance and buy and sell currencies expecting them to change. Such changes can bring about the changes in the exchange rate as expected. If spectators expect the value of a currency to fall, they will sell the currency increasing its supply and depreciating the value of it. Confidence therefore plays a large part in exchange rate fluctuations.

Much of the debate about what determines movements in trade balance centers on the role of the real exchange rate. There have been countless arguments made about the effectiveness and

timing of a depreciation on trade balance. Some research has concluded that depreciation is purely a monetary issue and has no bearing on the trade balance (Miles 1979). Still, many more have concluded that it does in fact have an impact on the trade balance, but differ on the timing and size of such an impact.

On question whether a country should allow its currency to float, economists do not offer clearly persuasive answers. Even for the largest and most developed economies with most developed domestic capital markets the choice of exchange rate policy is probably the single most important policy decision that strongly influences their freedom of action and the effectiveness of other policies.

1.1.1 Exchange Rate Fluctuations

Exchange rate fluctuations are caused by changes in the demand and supply of the currency in the FOREX market. When demand exceeds supply, the exchange rate will appreciate and rise in value. If however the supply exceeds demand, the exchange rate falls in value and depreciates. In the long-run, changes in the demand and supply of a currency depend on changes in the value of imports and exports as well as long-term capital flows such as foreign direct investments (FDI). The determinants of these change over time on different economies include: rates of inflation, interest rates, rates of economic growth, labor productivity and measures of international competitiveness.

There are situations in which flexible exchange rates may be described as too volatile. That is, exchange rates can be fully consistent with fundamental economic variables, such as relative prices, and macroeconomic policies, while still responding excessively to shocks to those variables before adjusting gradually to new long-term equilibrium levels. Such exchange rate

'overshooting' may occur because international capital markets adjust almost instantaneously to shocks, while goods and services markets adjust slowly (Dornbush, 1976).

According to Solnik (2000) most currency crises have the following pattern. First, the country runs a growing current account deficit. Thus, the currency is regarded as overvalued by PPP standards. In instances where foreigners were investing in a “booming” economy and lending to local firms at attractive interest rates this capital account surplus is covered up by the current account deficit. However, once prospects for economic growth weaken and uncertainty builds, these foreign investors begin to exit the market. As investors exit, the current account deficit is revealed, and governments are forced to raise interest rates to attract capital. These high interest rates slow the economy and hurt economic prospects furthering the need for capital control measures. At this instance the IMF often steps in to provide additional reserves; and since markets begin to become highly speculative the country is forced to devalue its currency or let the exchange rate float. This process can create a vicious cycle where currency depreciation leads to increased inflation which leads to further depreciation of the currency.

In Kenya, the exchange rate regimes have evolved along general macroeconomic policies that have been put in place since the country gained its independence in 1964. According to Ndung'u (2000), since independence to 1974, the exchange rate for the Kenya shilling was pegged to the US dollar, but after discrete devaluations the peg was changed to the special drawing rate (SDR). However, during the period of 1974 and 1981 the movement of the nominal exchange rate relative to the dollar was very volatile. This resulted in the shilling depreciating even further when the shilling was devalued again in 1982.

However according to Pollin and Heintz (2007) the exchange rate regime was changed to a crawling peg in real terms at the end of 1982. This regime was in place until 1990 when a dual exchange rate system was implemented. This lasted until October 1993, when, after further devaluations, the official exchange rate was merged with the market rate and the shilling was allowed to float.

The theoretical literature on exchange rate fluctuations suggests reasons why changes in exchange rate could affect import, producer and consumer prices. According to Khundrakpam (2007) these include trade distortions, volatility of exchange rate, and the share of imports in the consumption basket and the composition of the imports in the domestic economy. These factors affect the magnitude and speed at which exchange rate movements are passed through to domestic prices

Increased exchange rate fluctuations would, for instance, increase the uncertainty of profits on contracts denominated in a foreign currency, and would therefore reduce GDP to levels lower than would otherwise exist if uncertainty were removed (Cote, 1994). There is, however, no available evidence that success has since been achieved in realizing the objective for which the foreign exchange market was liberalized.

The exchange rate regimes in Kenya have been influenced through historical government macroeconomic policy from fixed exchange rate regimes to pegged and later floating through liberalization in the nineties. The exchange rates have been characterized by significant fluctuations with the local currency hitting historical highs in 2011 and lows in 1993.

There has been an ongoing debate on the appropriate exchange rate policy in developing countries. The debate focuses on the degree of fluctuations in the exchange rate in the face of

internal and external shocks. Exchange rate fluctuations are likely, in turn, to determine economic performance. In judging the desirability of exchange rate fluctuations, it becomes, therefore, necessary to evaluate their effects on output growth and price inflation. Demand and supply channels determine these effects.

1.1.2 Gross Domestic Product

Gross domestic product is defined as the monetary value of all the finished goods and services produced within the country borders in a specific time period. This includes value of production of monetary and non-monetary goods and services within a country. An alternative concept, gross national product, or GNP, counts all the output of the residents of a country.

After independence, Kenya promoted rapid growth through public investments, encouragement of smaller holder agricultural production, and incentives for private (often foreign) industrial investment. Gross domestic product (GDP) grew at an annual average of 6.6% from 1963 to 1973. Agricultural production grew by 4.7% annually during the same period, stimulated by redistributing estates, diffusing new crop strains, and opening new areas to cultivation. Between 1974 and 1990, however, Kenya's economic performance declined. Kenya's inward-looking policy of import substitution and rising oil prices made Kenya's manufacturing sector uncompetitive. The government began a massive intrusion in the private sector. Lack of export incentives, tight import controls, and foreign exchange controls made the domestic environment for investment even less attractive (KNBS, 2013).

From 1991 to 1993, Kenya had its worst economic performance since independence. Growth in GDP stagnated, and agricultural production shrank at an annual rate of 3.9%. Inflation reached a record 100% in August 1993, and the government's budget deficit was over 10% of GDP. As a

result of these combined problems, bilateral and multilateral donors suspended program aid to Kenya in 1991. The first quarter of 2013 experienced improvement in GDP. The Gross Domestic Product (GDP) in Kenya was worth 37.23 billion US dollars in 2012. The GDP value of Kenya represents 0.06 percent of the world economy (KNBS, 2013).

According to World Bank, Kenya entered 2013 from an improving economic position with low inflation and stable interest rates. By end-February, inflation was down to 4.5%, from a high of 18% in early 2012, and the shilling remained stable (at Sh85=US\$1) against major trading currencies. This enabled the Central Bank to lower interest rates to 9.5%, compared to a peak of 20% in mid-2012. Peaceful national elections in March 2013 and a smooth transition of power renewed business confidence, strengthening prospects for the economy to achieve a growth rate of five percent in 2013, compared to 4.3% in 2012. GDP of Kenya was at all-time high of 37.23 USD Billion in December of 2012 and a record low of 0.90 USD Billion in December of 1962.

Recent KNBS report on Kenya GDP did state that, Kenya economy remains vulnerable to external shocks, as the current account deficit is above 10% of gross domestic product (GDP), despite global fuel prices moderating in recent months. Service exports have increased but goods exports remain weak. Short-term capital inflows have helped stabilize the exchange rate, but heightened vulnerability to external shocks. Moreover, the real exchange rate is 34% stronger than a decade ago, constraining economic competitiveness.

Kenya is one the most developed countries in East Africa. Agriculture and Fishery (including coffee and tea cultivation) is the largest sector of the economy and accounts for about 25 percent. The fastest growing segments are Wholesale and Retail Trade and Transport and Communication. Together they account for almost 27 percent of total output. Manufacturing is

the third largest sector and represents 11 percent of the GDP. Other sectors include: Real Estate, Renting and Business Services and Financial Intermediation (10.8 percent), Education (6.7 percent), Other Services (7 percent), Construction (4 percent), Public Administration (3.7 percent), Electricity and Water (2.6 percent), Hotels and Restaurants (1.5 percent). Fishing and Mining and Quarrying account for the remaining 1 percent (KNBS 2012).

1.1.3 Exchange rate Fluctuations and GDP in Kenya

Understanding the impact exchange rate fluctuations on a nation's GDP is crucial to the implementation of successful trade policy. In an economic climate where countries are focused on improving their output, often by permitting their currencies to lose value, this topic has become increasingly important.

The history of exchange rates in Kenya as captured by trading economies source. The USDKES spot exchange rate has depreciated by 0.1750 or 0.20 percent during the last 10 years. From 1993 until 2013, the USDKES averaged 75.9900 reaching an all-time high of 105.7500 in October of 2011 and a record low of 36.2300 in January of 1993. The USDKES spot exchange rate specifies how much one currency, the USD, is currently worth in terms of the other, the KES. While the USDKES spot exchange rate is quoted and exchanged in the same day, the USDKES forward rate is quoted today but for delivery and payment on a specific future date.

According to Kenya National Bureau of Statistics (2013), The Gross Domestic Product (GDP) in Kenya expanded 0.50 percent in the first quarter of 2013 over the previous quarter. Kenya GDP growth rate averaged 1.15 Percent from 2005 until 2013, reaching an all-time high of 3.50 Percent in March of 2010 and a record low of -2.40 Percent in March of 2008.

Analyzing the Kenyan shilling further, the policy of a market determined shilling and the relaxation of exchange controls has exposed the currency to domestic and external shocks consequently increasing its volatility (Monetary Policy Statement, 2012). However, Kenya maintains a flexible exchange-rate system to complement its trade reforms and to ensure appropriate economic incentives for producers. The implications of the exchange rate fluctuations on GDP from importers view point is that the greater the volatility the more importers become wary of changing prices and the more willing they become to adjust profit margins accordingly to either an appreciation or depreciation.

Theoretically, the significant growth in the volume of imports relative to exports would suggest that Kenya is vulnerable to the effects of exchange rate movements. According to Akofio-Sowah (2009), the very definition of trade openness is the sum of exports and imports of goods and services measured as a share of GDP. Thus the more a country is open (i.e. a large presence of imports and exports) the more movements in the exchange rate are transmitted via import prices into domestic prices.

GDP is viewed in three approaches, the production approach sums the “value added” at each stage of production, where value added is defined as total sales minus the value of intermediate inputs into the production process. The expenditure approach adds up the value of purchases made by final users—for example, the consumption of food, televisions, and medical services by households; the investments in machinery by companies; and the purchases of goods and services by the government and foreigners. The income approach sums the incomes generated by production—for example, the compensation employees receive and the operating surplus of companies.

1.2 Research Problem

Economists and policy makers often refer to the exchange rate as a key macroeconomic variable. As a relative price, the exchange rate plays a critical role in transactions between open economies. However, the link between the theoretical concept of the exchange rate and its empirical application is not a straight forward one. Two different theoretical views have been put forward about how Exchange Rate fluctuations affects output. The first view states that, a real appreciation of domestic currency lowers the cost of imported raw materials and thus leads to an expansion of real output (Papazoglou, 1999). While the traditional view states that a real appreciation lowers international competitiveness, which, in turn, causes net exports to fall and a fall in net exports, in turn, lowers the aggregate demand. These two conflicting theoretical views pose an empirical issue and call for an empirical test growing economies like Kenya.

Exchange rate movement in Kenya has been variable with periods of rapid depreciation of the domestic currency Kenya shillings, which adversely affect the Kenya economy. Macroeconomic theoretical models faces uncertainty that enters the model in the form of disturbances to both aggregate demand and aggregate supply. Within this framework, currency depreciation determines aggregate demand through exports and determines aggregate supply through the cost of imported intermediate goods. The model demonstrates theoretically that the effects of currency fluctuations is contractionary via the effect of the supply side. However, the effects on aggregate demand make the final outcome inconclusive.

Various studies, particularly, in the developed and middle-income countries, have also explored the impact of exchange rate volatility and associated uncertainty on trade, investment, and economic growth. Majority of these studies have found that exchange rate volatility can affect trade directly, through uncertainty and adjustment costs, and indirectly through its effect on the

structure of output and investment (Cote, 1994; Serven, 2002; Pickard, 2003; Cheong, 2004; Kikuchi 2004).

In spite of the abundant literature on the effects of exchange fluctuations on economic growth, studies that specifically focus on Kenyan economy are scanty. Locally, Musyoki and Pundo (2012) study on the impact of real exchange rate volatility on economic growth: Kenyan evidence for the period of 1993-2009. Found that Kenya's *RER* generally exhibited an appreciating and volatility trend, implying that in general, the country's international competitiveness deteriorated over the study period, hence, impacting negatively on the economic growth of Kenya.

Otieno (2012) study found that the impact of exchange rate fluctuations in attracting FDI is insignificant. Kiptui and Kipyegon (2008) found that that though external shocks have major effects on the real exchange rate, domestic shocks also play a role.

As alludes to the foregoing, the problem of exchange fluctuations has given rise to a broad debate in the economics, and finance professions in many parts of the world. In Kenya, the subject has been at the center of current economic policy debate, involving policymakers, the business community, academic researchers, and the business press. All point out the potential deleterious effects of "excessive" volatility observed in the country's currency market since the adoption of a floating exchange rate in 1993. There is, however, no consensus yet on whether such volatilities in the exchange rates have influenced the Kenyan GDP. It is in this context that this research will be carried out.

1.3 Research Objective

To assess the effect of exchange rate fluctuation on Gross Domestic Product in Kenya.

1.4 Value of Study

The effect of exchange rates fluctuations on Gross domestic product is critical in developing countries like Kenya, as it play a major role in determining the imports and exports of such economies which results in economies growth. This study will be of importance to various stakeholders either directly or indirectly. Some of these stakeholders include the government, investors and academicians.

The Kenyan government will be concerned with successful and effective conduct of monetary policy. The monetary policies such as the supply of money in an economy, stable prices and low unemployment rates. Monetary theory provides insight into how to craft optimal monetary policy. It is referred to as either being expansionary or contractionary, where an expansionary policy increases the total supply of money in the economy more rapidly than usual, and contractionary policy expands the money supply more slowly than usual or even shrinks it. Expansionary policy is traditionally used to try to combat unemployment in a recession by lowering interest rates in the hope that easy credit will entice businesses into expanding. Contractionary policy is intended to slow inflation in order to avoid the resulting distortions and deterioration of asset values.

The results of the study will aid policy makers to design appropriate policies to improve and sustain economic growth. This include four basic polies: The use of the price system to encourage individual agents to take the full costs of environmental degradation into account in their decisions, The reform of governments' decision-making processes to allow more integrative

approaches to the full range of consequences of their policies, The use of technology policies to help de-couple environmental degradation from economic growth, The strengthening of the contribution of the international trade and investment systems to sustainable development world-wide.

The study will also add to the stock of knowledge especially students who would want to know the effect of exchange rate fluctuations on GDP in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter looks at research previously done on the effect of exchange rate fluctuations on GDP. As such the chapter will review the relevant theories with regard to exchange rate fluctuations, review of empirical studies and chapter summary.

2.2 Review of Theories

There are three theoretical model that have been used to analyze the impact of exchange rate fluctuations on the Gross Domestic Product.

2.2.1 Keynesian Absorption Approach

The Keynesian based absorption approach and the monetary approach focus on the macroeconomic linkages and identities, rather than the microeconomic relationships of the elasticity approach. In the absorption approach, the national income accounting identity is maintained, i.e.

$$\Delta(X-M) = \Delta Y - \Delta(C+I+G).$$

This implies that the trade account can only improve if domestic output growth exceeds domestic absorption. A devaluation improves the trade balance if the substitution towards domestic goods in response to the relative price shift boosts output more than absorption. This is more likely in an economy characterized by excess capacity where the Keynesian multiplier effect works. In an economy near full employment, or one facing severe bottlenecks in production, output is unlikely to increase and the trade balance can only improve if absorption declines. Inflationary

pressures also undermine the relative price shifts that induce an increase in export production and a decline in consumption of imported goods (Dunn and Mutti, 2000).

2.2.2 Monetary Approach

In the monetarist approach, a balance of payments deficit is entirely a monetary phenomenon caused by excessively expansionary monetary policy. A devaluation only has an effect on the balance of payments through its impact on the real money supply. Thus, a devaluation improves the balance of payment by raising domestic prices and thereby reducing the real money supply. Devaluations fail if they are followed by further increases in the nominal (Dunn and Mutt, 2000).

2.2.3 Elasticity Approach

Analysis using the elasticity approach is largely based on variants of the Bickerdike-Robinson-Metzler (BRM) condition, and in particular the simplified Marshall-Lerner (ML) version of this condition. The BRM condition defines a set of necessary conditions on the size of import demand, import supply, export demand and export supply elasticity that will result in an improvement in the country's balance of trade. A devaluation changes the relative prices of imports and exports in a way that encourages export growth and reduces import volumes. However, these shifts do not necessarily improve the trade balance (BRM, 1920).

2.3 Determinants of Gross Domestic Product

Economic growth is the increase in the standard of living in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy. The growth of an economy is thought of not only as an increase in productive capacity but also as an improvement in the quality of life to the people of that economy. Many countries were facing financial constraints particularly developing countries like Kenya, where bank loans are

restricted to some favorable groups of companies and personage investors. There exist models of economic growth based on reasonable looking axioms that predict the cessation of growth in a few decades, or that predict the rapid convergence of the living standards of different economies to a common level, or that otherwise produce logically possible outcomes that bear no resemblance to the outcomes produced by actual economic systems. In a weakening economy investors require a higher risk premium on firms with distress characteristics (O'Sullivan, Arthur; and Sheffrin 2003).

2.3.1 Kenya Money supply and GDP

According to Takahashi (1971), an increase in amount of money in circulation leads to inflation that always affect the money rate of interest. Under the assumption that the reserves to demand deposit ratio depends on the money rate of interest, it follows that the ratio of outside money to the money supply will be influenced by inflation and ultimately the long-run equilibrium values of the real variables in a fully employed economy. This is in contrast with the findings of Thapa (2002), in his study on the effect of REER on Nepalese economy who found out that M1 was statistically insignificance suggesting that interest rate channel was not important to boost the economic activities in Nepal.

Money Supply M2 in Kenya as reported by the Central Bank of Kenya increased to 1547.64 KES Billion in June of 2013 from 1543.47 KES Billion in May of 2013. Kenya Money Supply M2 averaged 653.17 KES Billion from 1999 until 2013, reaching an all-time high of 1547.64 KES Billion in June of 2013 and a record low of 302.72 KES Billion in October of 1999. Kenya Money Supply M2 includes M1 plus short-term time deposits in banks.

2.3.2 Population growth rate and GDP of Kenya

GDP growth rate in developed countries is found to be a sum of two terms. The first term is the reciprocal value of the duration of the period of mean income growth with work experience and the second term is inherently related to population and defined by the relative change in the number of people with a specific age (9 years in the USA). The evolution of GDP is defined by only one parameter which is the number of people of the specific age (Kitov, 2006).

Although Kenya is the biggest and most advanced economy in east and central Africa and a minority of the wealthy urban population often leaves a misleading impression of affluence, Kenya is still a poor developing country with a Human Development Index (HDI) of 0.519, putting the country at position 145 out of 186 – one of the lowest in the world and about 38% of Kenyans live in absolute poverty. The important agricultural sector is one of the least developed and largely inefficient, employing 75 percent of the workforce compared to less than 3 percent in the food secure developed countries (Kenya demographic profile, 2013).

East and Central Africa's biggest economy has posted tremendous growth in the service sector, boosted by rapid expansion in telecommunication and financial activity over the last decade, and now contributes 62 percent of GDP. Unfortunately, a massive 22 percent of GDP still comes from the unreliable agricultural sector which employs 75 percent of the labour force (a consistent characteristic of under-developed economies that have not attained food security – an important catalyst of economic growth) and a significant portion of the population regularly starves and is heavily dependent on food aid. Industry and manufacturing is the smallest sector that accounts for 16 percent of the GDP (KNBS, 2011).

2.3.3 Government Expenditure and GDP of Kenya

Government expenditure includes both recurrent and developmental expenditure. According to Valadkhani (1998) in his study on the effect of government capital expenditure on GDP in the Iranian economy using superexogeneity testing found out that, government capital expenditure has an important positive effect on GDP irrespective of structural and regime shifts in the economy.

This is in contrast with the findings of Islam and Kamrul (2006) in their study Does Government Expenditure Reduce GDP Gap? Evidence from Bangladesh who found that in the short run, government expenditure does not play any statistically significant role in eliminating the gap between actual and potential output. However, a statistically significant cointegrating relationship was found between government expenditure and long run equilibrium output.

The General government final consumption expenditure (% of GDP) in Kenya was last reported at 13.31 in 2011, according to a World Bank report published in 2012. General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security, but excludes government military expenditures that are part of government capital formation.

2.4 Review of Empirical Studies

McKinnon (1963) furthered the theory of OCAs by considering the implications of differing sizes and structures of economies on the optimal exchange rate regime. Primarily, where economies are relatively open, variable exchange rates have a significant effect on internal price

levels since the ratio of tradables to non-tradables is high and devaluation increases the cost of tradables. Given the conflicting aims of employment maximization, external balance and internal price stability, an open economy with variable exchange rates may be able to control the former two but the rising cost of tradables will impact on the latter aim: thus open economies have less to lose from moving from variable exchange rates to a single currency.

As Mussa (1984) pointed out, the key issue of exchange rate policy is to set relative prices between tradable and non-tradable, and there are three important instruments through which government policies can affect domestic relative prices. The first method is through a system of multiple exchange rates that corresponds to a system of export and import taxes and subsidies. The second method arises from the existence of market imperfections, which cause rigidities in the nominal prices of goods entering into international trade, and of stickiness of returns to factors employed in the production of these goods. Consequently, the relative protection afforded various industries may differ depending on the nature of market imperfections. In such a case, the domestic currency costs of earning a unit of foreign exchange or of replacing a unit of foreign currency spent on imports will differ among industries as they do in a multiple exchange rate regime. The third method is government influence over the distribution of expenditures among goods or the level of spending relative to income. This amounts to the conduct of macroeconomic policies. In addition to these channels, we must add, of course, the conduct of exchange rate policy, which is self-evident.

While predictable, this type of exchange rate volatility is costly since it amplifies the domestic impact of disturbances arising in foreign markets, exacerbating fluctuations in domestic growth, and unemployment. Second, flexible exchange rates may be too volatile if they are primarily influenced by factors unrelated to fundamental economic variables. In this case, exchange rate

movements would be largely unpredictable, especially, in the short term. Furthermore, the short-term independence of exchange rates from fundamental variables can lead to long-term exchange rate misalignment volatility could also have an impact on growth. Theoretical and empirical work shows that a volatile economic environment (for example volatility of the terms of trade, exchange rates, money supply, productivity) has a harmful effect on economic performance (Frenkel and Goldsten, 1987).

Similarly, a study done by Brada and Mendez (1988) examines the effects of exchange rate fluctuations on the volume of international trade. They found that bilateral trade flows between countries with floating exchange rates are greater than those in countries with fixed exchange rates. They conclude that “while exchange-rate risk does reduce the volume of trade among countries regardless of the nature of their exchange-rate regime, the greater risk faced by traders in floating exchange-rate countries is more than offset by the trade-reducing effects of restrictive commercial policies imposed by fixed exchange rate countries.” This not only shows the direct economic impact an exchange rate regime can have on economic growth, but more specifically, the underlying problems associated with fixed exchange rate countries that also affect their trade, which is their strict policies outside of their currency regulations.

Ndung'u (1993) estimated a six variable VAR money supply, domestic price level, exchange rate index, foreign price index, real output, and the rate of interest in an attempt to explain the inflation movement in Kenya. He observed that the rate of inflation and exchange rate explained each other. A similar conclusion was also reached in the extended version of this study (Ndung'u 1997).

Increased exchange rate fluctuations would, for instance, increase the uncertainty of profits on contracts denominated in a foreign currency, and would therefore reduce economic growth to levels lower than would otherwise exist if uncertainty were removed (Cote, 1994).

Economic contraction occurs through the following channels. First, a nominal depreciation of the currency leads to a rise in general price level. This lowers aggregate demand, which, in turn, causes economic contraction. The second channel works through the income redistribution. It is argued that a real depreciation can help transfer income from individuals with a high marginal propensity to consume to those with a low marginal propensity. This lowers aggregate demand, which, in turn, causes output to fall. The aggregate supply channel, on the other hand, purports that the depreciation of the real exchange rate increases the cost of production and helps redistribute income in favor of the rich. It is contended that a real depreciation can reduce aggregate supply. This is so because a real depreciation causes the cost of imported raw materials to go up. This reduces the importation of raw materials and thereby lowering the level of aggregate supply (Papazoglou, 1999).

Eduardo and Berg (2000) show that the higher the level of dollarization or currency substitution in a country, the less effective will be the traditional set of monetary policies of the central bank. Actions on the part of the monetary authority relating to money market rates, reserve requirements, and refinancing may turn out to have insignificant effect on real GDP and inflation

Ndung'u (2001) suggest that there may not be one single solution applied to all situations and that the effect of exchange rate should be examined on a country to country basis. Balance how

large the impact is and when the impact occurs. The optional choice of exchange rate system is a long standing problem in open economic system.

Levich (2001) points out that the character and the context of the change will greatly affect the nature of the change. The nature of the change is the effect it has on the exchange rate, whether exchange rates move immediately, reach a new equilibrium, overreact, or continue to adjust. For example, “character” affects the nature of the change depending on whether the change is unanticipated versus anticipated changes, permanent versus temporary changes, real versus nominal changes, and single industry versus economy-wide changes. Additionally, the extent that an opinion is held on the change and the level of the rate of change will affect the nature of the change.

Levich (2001) also talks about the “context” of the change having an effect on exchange rate movement. For example, regarding “context” he is referring to how monetary authorities are perceived, the demand for home country currency and securities, the level of liberalization, and the source of the change

Another analysis, done by Nabli and Véqanzonès-Varoudakis (2002), looks at the Middle East and North African (MENA) countries that were characterized by having an overvaluation of their currencies throughout the 1970s and the 1980s. They were able to compute this overvaluation through the use of an “indicator of misalignment.” A panel of 53 countries were used, and ten of these were MENA countries. Their research shows that manufactured exports were significantly affected by the overvaluation of their currencies. In the 1990s, when overvaluation was decreased within the MENA countries overall, there was also “a continuous rise in the diversification of their manufactured exports affecting the GDP of such countries. Through any

of these methods, the government may affect domestic relative prices and, therefore, the competitiveness of domestic industries.

In another study, Calvo and Mishkin (2003) take on a different view of exchange rate regimes. They argue that macroeconomic success in emerging market countries can be produced primarily through good fiscal, financial, and monetary institutions, and they believe that less emphasis should be placed on the flexibility of an exchange rate regime. They find that when choosing an exchange rate regime, not all countries are able to conform to one type. This is due to each country's particular needs and their economy, institutions, and political culture.

Fountas and Aristotelous (2003) on their paper the impacts of the different exchange rate regimes throughout the twentieth century on the bilateral exports between the United Kingdom and the United States. They concluded that fixed exchange rate regimes and managed float exchange rate regimes are equally favorable to trade, but, more importantly, freely floating exchange rate regimes produce more trade than fixed.

Fred Hu (2004) also finds a negative effect associated with using fixed exchange rate regimes on economic growth. His study focused on China in particular, and the need for this country to liberalize their currency and capital control. He concludes that China must go through a gradual process that will ultimately lead them to a more liberalized system overall. First, they must remove the currency peg causing them to have a free floating exchange rate. This would cause them to enter a more balanced trading field among their major trading partners. Second, they need to introduce a sound banking reform program, which would stabilize their domestic financial system. Lastly, China should relax their capital control policies. This would assist them in avoiding financial crisis while simultaneously allow them to gain more capital freedom.

Egert and Zumaquero (2005) analyzed the impact of exchange rate volatility and changes in the exchange rate regimes on export volume for ten Central and Eastern European transition economies. The first group of countries started their transition with pegged regimes and then moved towards flexibility. The second group of countries experienced no major changes in their exchange rate regimes in the past ten years. Their results indicate that an increase in the exchange rate volatility decreases exports, and this impact has a delay rather than being instantaneous.

There is, however, no available evidence that success has since been achieved in realizing the objective for which the foreign exchange market was liberalized. Large volatilities in nominal exchange rates have since characterized Kenya financial market (Kiptoo, 2007).

Modern analysts argued that flexible exchange rates are preferable to fixed exchange rates on the grounds that flexible exchange rates provide greater insulation from foreign shocks. By the end of 1998 many countries had allowed to float currencies against other. That is the currencies were not formally pegged to other currencies. However, exchange rate policy is still a source of exasperation, and appropriate choice is by no means clear (Frankel, 2007).

Kiptui and Kipyegon (2008) on their study on external shocks and real exchange movement in Kenya found that though external shocks have major effects on the real exchange rate, domestic shocks also play a role. The results show that the interest rate differential has significant negative (appreciating) effects in the short and long-run. On the other hand, government spending has significant positive (depreciating) effects on the real exchange rate in the short-run and long-run while real GDP growth has positive (depreciating) effects in the short-run but negative (appreciating) effects in the long-run.

Musyoki and Pundo (2012) study on the impact of real exchange rate volatility on economic growth: Kenyan evidence. Adduced evidence that the conditional volatility of the *RER* depended on both domestic and external shocks to *RER* fundamental and macroeconomic changes. Overall, however, Kenya's *RER* generally exhibited an appreciating and volatility trend, implying that in general, the country's international competitiveness deteriorated over the study period, hence, impacting negatively on the economic growth of Kenya.

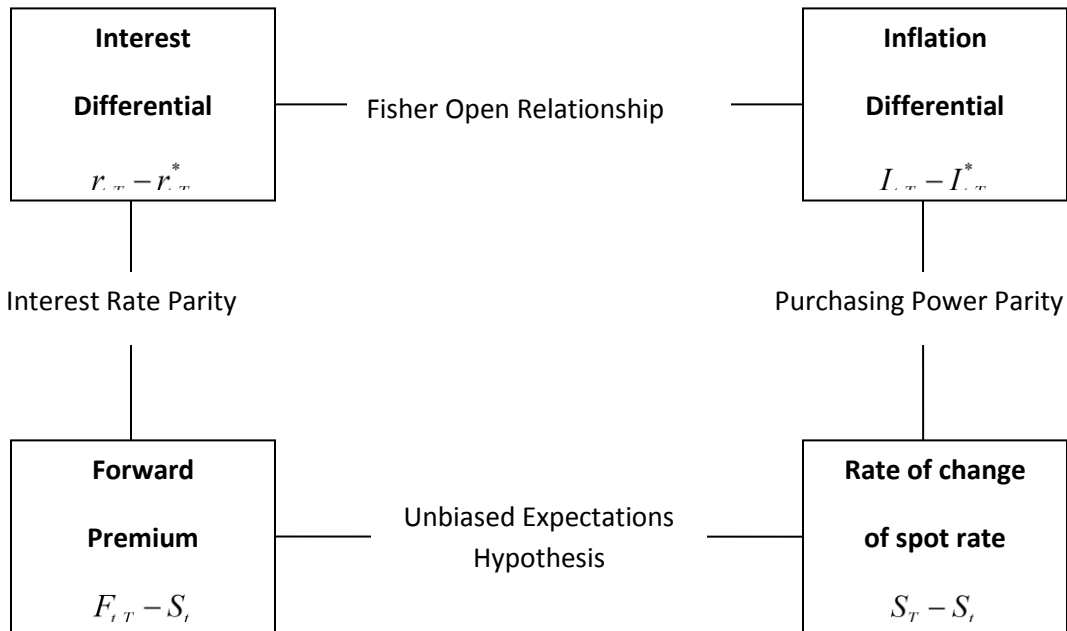
Omondi (2012) study on the impact of exchange rate fluctuations on foreign direct investments in Kenya. From the collected data it was observed that while 1987 and 2002 recorded the lowest fluctuations in exchange rates and fairly low net foreign capital inflows into the country, conversely 1993 recorded the highest exchange rate fluctuations and the relatively high foreign direct inflows. This should point at a strong relationship between the two variables. However the inferential analyses found a weak relationship between exchange rate fluctuations and foreign direct investments. Hence the conclusions drawn from this study finding suggest that the impact of exchange rate fluctuations in attracting FDI is insignificant.

2.4.1 International Parity Relationships

Parity conditions are an explanation for the long-run value of exchange rates. They include: relative inflation rates (purchasing power parity), relative interest rates (Fisher effect), forward exchange rates, exchange rate regimes, and official monetary reserves. Interest rate parity connects the forward rate to the spot rate and interest rates in the domestic economy to those abroad (Sercu and Uppal, 1995).

An important major determinant of long-run behavior of real exchange rates is economic activity such as a rise in productivity or growth in manufacturing. These factors affect the overall quality

and quantity of goods produced and consumed, the “national consumption basket.” While there is agreement that growth in economic activity and differences in productivity influence the long-term real exchange rate, calculation of these effects are still debated (Solnik, 2000).



Source: Sercu and Uppal (1995)

In the above diagram Sercu and Uppal (1995) link three formulas to imply the Fisher open relationship (or the International Fisher Effect). The interest rate parity relates to the forward premium to the interest differential. Purchasing power parity links the expected exchange rate change to the inflation differential. As shown above, the International Fisher effect links the interest rates to inflation.

2.5 Chapter Summary

According to Ribnikar 2004, there is no optimal monetary regime; it depends on the circumstances of the country. For instance, in Slovenia there was a managed floating exchange rate. Economists have not been able to determine whether these countries should use floating or

fixed exchange rates. With respect to such countries in transition, the exchange rate has often played a fundamental role in macroeconomic stabilization. However, in recent years, globalization and changes in policy orientation have resulted in closer international trade and financial linkages, which in turn have led to mobility of capital, i.e. capital inflow and outflows, generating potential external shocks and increasing the pressure for additional flexibility.

To the best of the researcher's knowledge, no study has ever sought to establish the effect of exchange rate fluctuations on the GDP in Kenya from 2007-2012, hence the research gap. This study is a modest attempt to bridge this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the study design and methodology used in gathering information needed for the purpose of completing the study. This chapter involves a blueprint for the collection, measurement and analysis of data. In this section the following subsections are included; research design and target population, sampling design, and data collection instrument and procedures and data analysis criteria that will be used.

3.2 Research Design

In (Leedy and Ormrod, 2005) a research design is a comprehensive plan that involves highlighting all the methods that will be utilized in the collection and analysis of data. The research design is also in line with the research objectives and study questions.

In particular, this study was to understand the effect of exchange rates fluctuations on effect on the GDP in Kenya. Thus descriptive research design was used for the study to examine and explore descriptive characteristics of several variables of interest.

3.3 Population

Target population in statistics is the specific population about which information is desired. Mugenda and Mugenda (2003) describes population of the entire groups or individual, events or objects having common characteristics about which the researcher wishes to make generations, international statistic indicate the likelihood that what was true of the sample, is also true or the

population from which is drawn. When the target population is similar the researcher has more confidence making generalization. The target population for this constituted all the annual average figures for inflation, GDP growth rate, exports, imports and government expenditure for the period under study.

3.4 Sampling

Sampling is selecting a given number of subjects from a defined population as representative of that population. All the population under study formed the sample. Thereby drawing conclusion on the effect of exchange rate fluctuations on GDP in Kenya.

3.5 Data collection

Data is defined as raw facts that are yet to be processed to be reliable information for the purpose of design making. The researcher used secondary data as the major source of data. Time series data for exchange rate fluctuation and GDP of Kenya between 2008 and 2012 was collected from Central Bank of Kenya, Kenya national bureau of statistic, CMA bulleting and the World Bank Country data websites for analysis.

3.6 Data analysis

The study involved an assessment of the effect of exchange rate fluctuations on GDP of Kenya over the period of study.

The standard framework for demand side of GDP in an open economy is as follows.

$$GDP = C + I + G + (X - M) \dots\dots\dots (3.1)$$

Where,

C = Private sector consumption expenditure

I = Private sector investment expenditure

G = Government Expenditure

X = Exports of goods and services

M = Imports of goods and services.

The term (X-M) represents net exports (NX). Private sector consumption expenditure (C) is a positive function of income which is a negative function of real interest rate while investment (I) is a negative function of real interest rate ($r - p^e$). The government expenditure is the exogenous factor, which depends on the government policy. Net exports (NX) can be postulated as the negative function of real exchange rate. Nominal interest rates (r) depend on, among others, total money supply in the economy and the term ($r - p^e$) can be replaced with Money Supply term (M1). This is a valid proxy because with the increase in nominal money supply, nominal interest rate comes down which induces investment to go up and hence an increase in GDP.

Given the arguments in theoretical framework and literature review, the estimating model for the study was therefore stated as: $Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon \dots\dots\dots (3.2)$

Where;

Y = Gross Domestic Product

x_1 = Exchange rate

x_2 = Exports

x_3 = Imports

x_4 = Government expenditure

ε = Error term

The regression function shown above was used to investigate the effect of exchange rate fluctuations on GDP. Whereby GDP will be the independent variable as a function of the other dependent variables of exchange rate fluctuations, real exchange rate, Inflation, exports, imports and government expenditure over the period of study.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter reports the findings from the selected data under study. The purpose of this research was to investigate effect of exchange rate fluctuations on Gross Domestic Product in Kenya. The focus was on the second term how this fluctuations affected Kenyan GDP from 2008-2012. The data for this study was gathered exclusively from the published reports obtained from the Kenya National bureau of statistics, CMA capital market bulleting, Central Bank of Kenya and IMF statistical reports. The data collected included GDP growth rates, Inflation rates, imports, exports and government expenditure. The data obtained was fed into SPSS version 21.0 and used to compute the Findings and draw conclusions. Descriptive analysis, regression analysis and Karl Pearson Correlation analysis were conducted to ascertain the effect of exchange rate fluctuations on GDP in Kenya.

4.2 Data Analysis

	Annual averages					
	2008	2009	2010	2011	2012	
GDP growth rate	1.5	2.7	5.8	4.4	4.6	Y
Exchange Rate	69.2	77.4	79.2	88.8	84.5	X_1
Exports	18.7	14.4	16.5	17.1	15.1	X_2
Imports	42.5	32.8	39.1	43.5	40.3	X_3
Government Expenditure	27.2	27.9	29.7	29.2	28.8	X_4

4.3 Trend of the GDP Growth

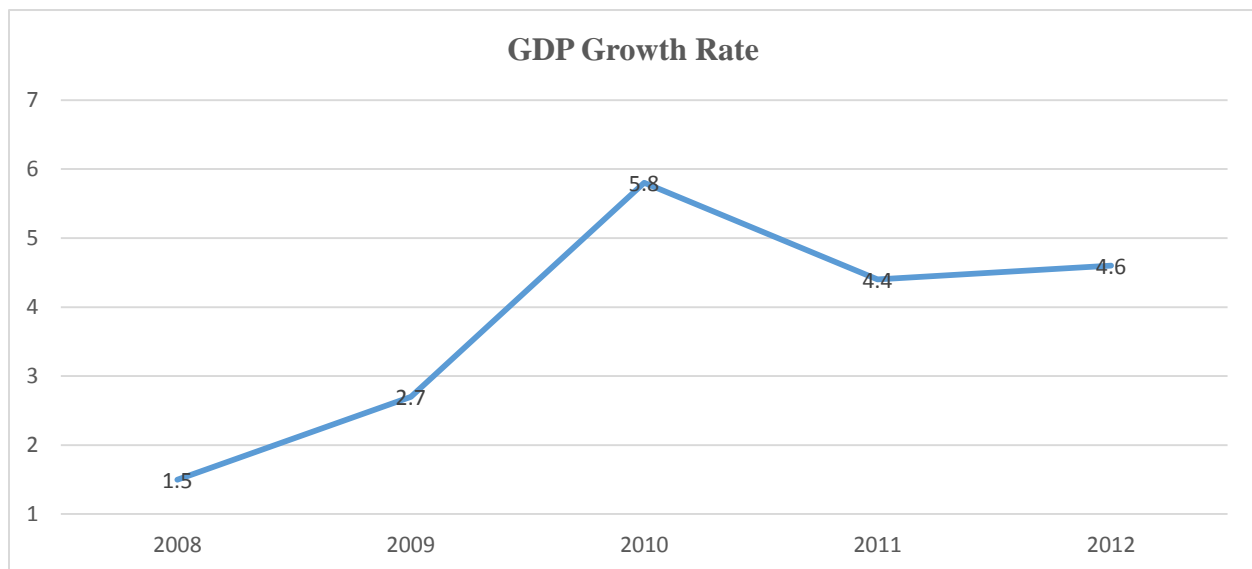
Table 4.1: Descriptive Statistics for Real GDP Growth Rate

Year	2008	2009	2010	2011	2012	Mean	Std. Dev
GDP Growth	1.5	2.7	5.8	4.4	4.6	3.8	1.695582

Source: KNBS, 2012

From the study, year 2010 recorded the highest GDP growth rate at 5.8% followed by year 2012 with 4.6% and finally year 2011 with 4.4%. The years that recorded the lowest GDP growth included year 2009 with 2.7% and the worst was year 2008 with 1.5%. The mean score for the period recorded was 3.8 and the standard deviation was 1.695582. There has been a general upward trend on the real GDP growth in the country. The trend is as shown in figure 4.1.

Figure 4.1: Trend of the Real GDP Growth



4.4 Exchange rate Fluctuations

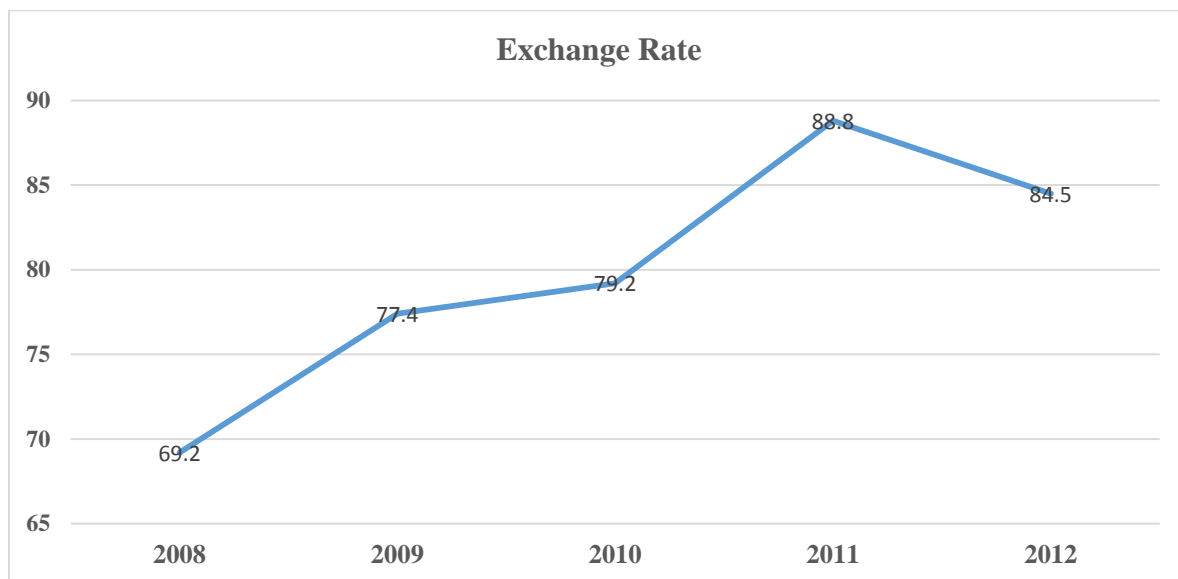
The annual data from CBK on exchange rates, the currency of Kenya compared to USD has changes over time as shown below.

Table 4.2: Descriptive Statistics for Real Exchange Rate

Year	2008	2009	2010	2011	2012	Mean	Std. Dev
Exchange Rates	69.2	77.4	79.2	88.8	84.5	79.82	7.44258

Source: CBK, 2012

Figure 4.2: Exchange Rate Trend between years 2008 and 2012



Source: CBK, 2012

According to table 4.2 and figure 4.2, year 2011 recorded the highest exchange at 88.8, while year 2008 recorded the least at 69.2. Year 2009 had an exchange rate of 77.4, year 2010 showed an exchange rate of 79.2 and year 2012 had an exchange rate of 84.5. The average exchange

rate over the period was 79.82 and the standard deviation was 7.44258. Due to floating exchange rate and an open capital account, the exchange rate keeps fluctuating over the years of study.

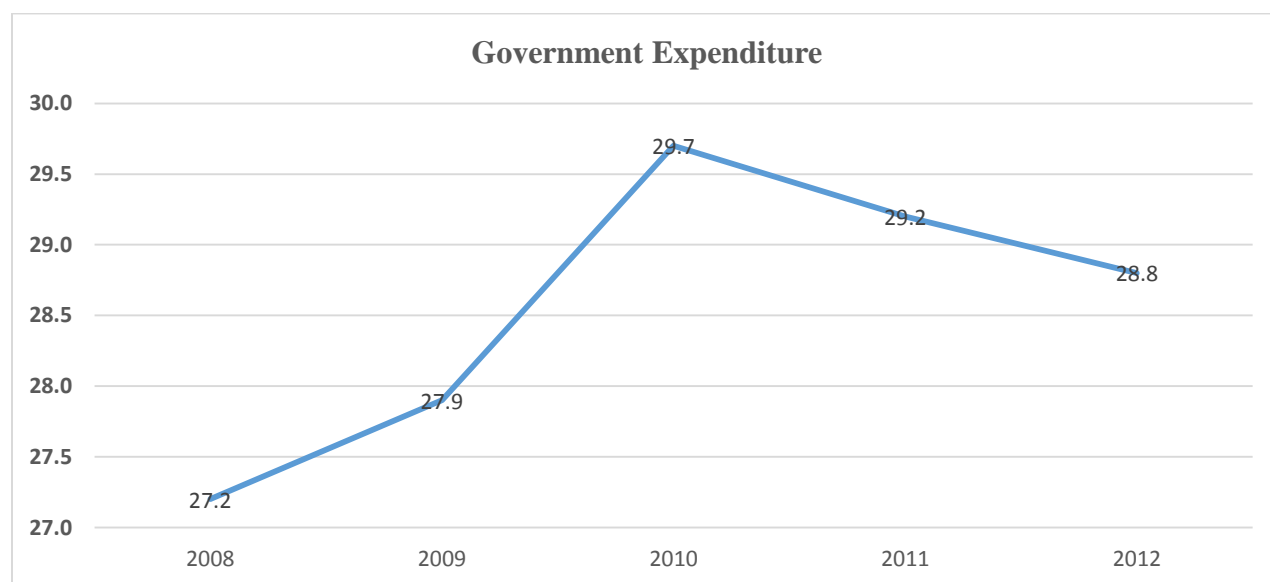
4.5 Government Expenditure

Table 4.3: Descriptive Statistics for Government Expenditure

Year	2008	2009	2010	2011	2012	Mean	Std. Dev
Government Expenditure	27.2	27.9	29.7	29.2	28.8	28.6	1.0064

Source: KNBS, 2012

Figure 4.3: Government Expenditure for Years 2008- 2012



According to the results, year 2010 recorded the highest government expenditure rates of 29.7%, followed by year 2011 with 29.2% and year 2012 at 28.8%. 2008 had the least at 27.2%. The mean score for the period recorded was 28.6 and the standard deviation was 1.0064.

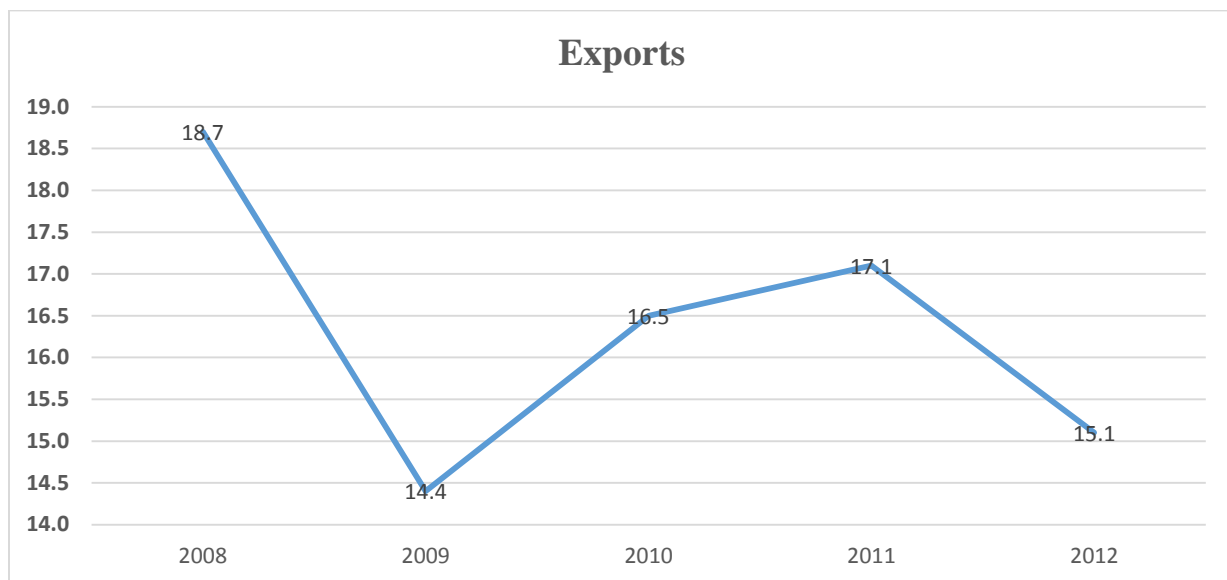
4.6 Exports

Table 4.4: Descriptive Statistics for Exports

Year	2008	2009	2010	2011	2012	Mean	Std. Dev
Exports	18.7	14.4	16.5	17.1	15.1	16.36	1.6935

Source: KNBS, 2012

Figure 4.4: Exports for Years 2008- 2012



According to the results, year 2008 recorded the highest exports rates of 18.7%, followed by year 2011 with 17.1% and year 2010 at 16.5%. 2012 had the least at 15.1%. The mean score for the period recorded was 16.36 and the standard deviation was 1.6935

4.7 Imports

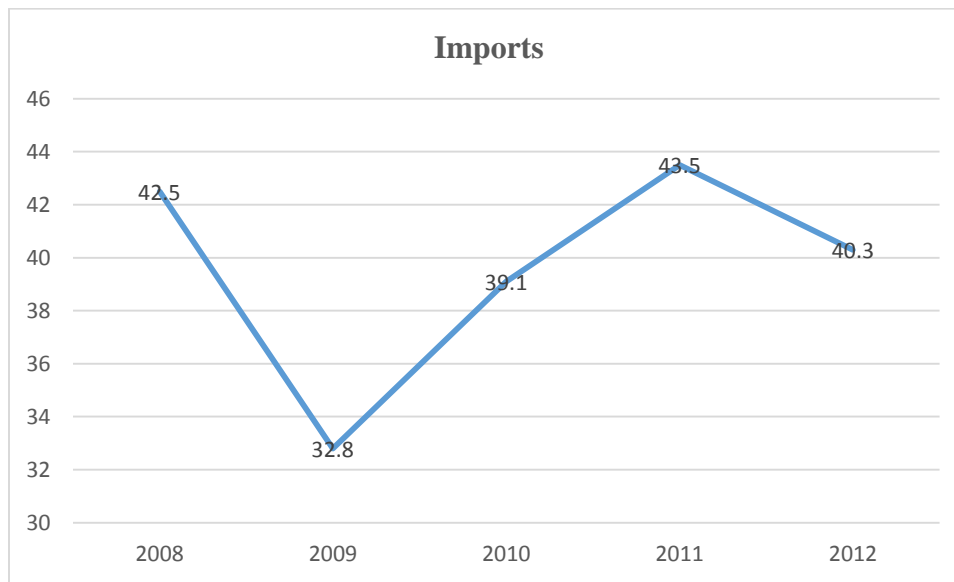
According to the results below, year 2008 recorded the highest imports rates of 42.5%, followed by year 2011 with 43.5% and year 2012 at 40.3%. 2009 had the least at 32.8%. The mean score for the period recorded was 39.64 and the standard deviation was 4.201.

Table 4.5: Descriptive Statistics for Imports

Year	2008	2009	2010	2011	2012	Mean	Std. Dev
Imports	42.5	32.8	39.1	43.5	40.3	39.64	4.201

Source: KNBS, 2012

Figure 4.5: Import for Years 2008- 2012



ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.092	4	2.773		. ^b
	Residual	.000	0	.		
	Total	11.092	4			

a. Dependent Variable: y

b. Predictors: (Constant), X4, X3, X1, X2

According to the results, the anova for this study gave a regression of 11.092 with a mean square of 2.773.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-41.840	.000		.	.
X1	-.070	.000	-.313	.	.
X2	-.307	.000	-.313	.	.
X3	.087	.000	.219	.	.
X4	1.848	.000	1.117	.	.

a. Dependent Variable: y

According to the results, the regression equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$) now becomes: $Y = -41.840 - 0.070 X_1 - 0.307 X_2 + 0.087 X_3 + 1.848 X_4$.

Correlations

		y	X1	X2	X3	X4
y	Pearson Correlation	1	.677	-.278	.090	.990**
	Sig. (2-tailed)		.209	.651	.886	.001
	N	5	5	5	5	5
X1	Pearson Correlation	.677	1	-.386	.194	.741
	Sig. (2-tailed)	.209		.521	.755	.152
	N	5	5	5	5	5
X2	Pearson Correlation	-.278	-.386	1	.775	-.229
	Sig. (2-tailed)	.651	.521		.124	.712
	N	5	5	5	5	5
X3	Pearson Correlation	.090	.194	.775	1	.156
	Sig. (2-tailed)	.886	.755	.124		.802
	N	5	5	5	5	5
X4	Pearson Correlation	.990**	.741	-.229	.156	1
	Sig. (2-tailed)	.001	.152	.712	.802	
	N	5	5	5	5	5

** . Correlation is significant at the 0.01 level (2-tailed).

According to the results above, the Pearson correlation for equation ($Y = \beta_0 + \beta_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$) results to 0.677, -0.278, -0.278, 0.090 and 0.990 for x_1, x_2, x_3, x_4 .

4.7 Summary and Interpretation

The study conducted analysis to establish the relationship between the independent and dependent variables in a multiple regression analysis. The independent variables in this study included on, exchange rates, imports and exports while GDP the dependent variable. Major findings shows that, certain policy implications arise from the findings. Principal among them is that exchange rate depreciation affects both output and money supply. It demonstrates the need for a monetary policy framework that complements the existing exchange rate policy.

Theoretically there exists a correlation between exchange rate and international trade via exports and imports. A depreciation in currency makes the exports cheaper and imports costly. In this way the effect of depreciation on international trade may be positive or negative. If the exports are more price sensitive to the imports and the country is having surplus items of exports then total volume of the trade will be increased. On the other hand if imports are more price sensitive as compared to the exports and the country is having deficit balance of payments then there may be possibility of decreased trade volume of the country.

According to the regression equation established, taking all factors (GDP, exchange rates, exports, imports and Government expenditure) constant at zero, the Gross Domestic product will be -41.840. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in exchange rate lead to a - 0.070 decrease in GDP. A unit increase in exports will lead to a -0.307 decrease in GDP. A unit increase in government expenditure will lead to a 1.848 increase in GDP, whereas a unit increase in imports will lead to a 0.087 increase

in GDP. These results infer that exchange rate fluctuations contributes more to GDP, followed by exports, while government expenditure contributes the least to GDP. With a significance of 0.209, 0.651, 0.886, 0.001. Exchange rate, exports, imports, and government expenditure respectively

The coefficient of determination showed the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (GDP) that is explained by all the independent variables (exchange rate, exports, Imports and Government Expenditure).

The researcher conducted a multiple regression analysis so as to relationship between various dimensions of (independent variables) and (dependent variable).

The regression equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$) now becomes:

$$Y = -41.840 - 0.070 X_1 - 0.0307 X_2 + 0.087 X_3 + 1.848 X_4$$

Whereby:

Y = Gross Domestic Product

x_1 = Exchange rate

x_2 = Exports

x_3 = Imports

x_4 = Government expenditure

ε = Error term

The conventional positive responsiveness of net exports due to real exchange rate depreciation but largely driven by falling imports rather than rising exports. Similarly the volume of trade along with its composition, i.e. volume of imports and exports also affects the exchange rate. For a country having higher bulk of the trade, if the ratio of exports to imports is higher, then there may be a possibility of decrease in exchange rate.

Findings of this study are consistent with economic theory and also reality of Kenyan economy. According to theory in general appreciation of national currency negatively affects export earnings of country. This theoretical hypothesis is crucial in the case of Kenya due to fluctuations of exchange rate which mainly sourced from huge inflow of imports and by the other hand declining share export caused by domination USD to KSH international trade.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study found that the, exchange rate fluctuations do affect GDP in Kenya. Whereby there is significant relationship between exchange rates and GDP. As regards to causality, negative causality exist in both directions.

Higher variability of the exchange rate around its anticipated value has a net negative effect on the trends of real growth of output, private consumption, and investment in Kenya. While adhering to a flexible exchange rate policy, managing fundamentals to reduce excessive fluctuations impinging on the economic system over time should top the policy agenda in Kenya.

A sudden change in the exchange rate not only affects the level but also has a persistent effect on expected fluctuation of the exchange rate and thus alter incentives to exports by the firms who are affected by the uncertainty. Persistent effect of exchange rate shocks due to volatility is substantially different from the traditional hysteresis. In the case of hysteresis an exporter exits a market if its currency appreciates. The exchange rate fluctuations however would increase from a sudden appreciation as well as from a sudden depreciation.

From the analysis government expenditure and imports did yield a positive interference from the Pearson regression equations used. The two variable should be key in ensuring economic growth whenever there is exchange rate volatility in Kenya.

5.2 Conclusions

The study concludes that there exist a negative relationship between exchange rate fluctuations and GDP. Whereby exchange rate fluctuations do impact negatively to GDP. The growth of government spending is an important determinant of economic growth in Kenya. An increase in government spending stimulates real output growth and private demand for consumption and investment. Concurrently, the increase in the interest rate may result in an increase in capital inflows that appreciates the exchange rate. Through this channel, the increase in government spending decreases the growth of real exports. Overall, the increased demand attributed to government spending induces an increase in price inflation in the following year.

There is a strong evidence of asymmetry in the effects of exchange rate fluctuations on the GDP. More precisely, the analysis provides interesting insights into determinants of cyclicity in economic activity in Kenya. Anticipated depreciation may be stimulating of real growth, albeit it may prove inflationary. Domestic policies (contractionary fiscal and monetary policies) could be used to counter the inflationary effects of depreciation. Moreover, variability of unanticipated exchange rate shocks could be detrimental, given asymmetry in the effects of the exchange rate.

5.3 Policy Recommendations

Macroeconomic stability is the fundamental objective for Kenya to achieve economic development. The policies undertaken by government should address the following in order to improve on economic growth.

In order to gain the advantages of depreciation of exchange rate, government should encourage the diversification of industries by encouraging industrialization as opposed to relying on agriculture so as to reduce on the problems of import based industries. This will encourage more

industries being set thereby Kenya being able to produce some of the machineries it imports and the surplus being exported to an increase foreign exchange earnings enhancing GDP growth.

Government should also consider subsidies to local Indigenous Investors in form of tax holidays and provide Machinery and Equipment to facilitate mechanization of agriculture. This can well be done by providing such machinery to each parish so as to increase on production for the agricultural based industries.

Government should also consider using interest rate as a policy stance together with the exchange rate policy. High interest rates have been a problem in Kenya given the nature of investments in the country. High interest rates has led to high production costs, high market prices which discourages aggregate demand and hence a reduction in Gross domestic product.

The central bank should monitor the money supply in the economy to prevent the resurgent of inflation in the economy that negatively impacts on GDP.

5.4 Limitation of Study

The explanation of the sources of real exchange rate fluctuations is still an open area. There has been a widespread belief that monetary policy is the main driver of exchange rate movements. Much of the theoretical literature has focused on this belief. However, the empirical evidence on the role of monetary policy shocks has not provided clear-cut answers on the link between monetary policy and exchange rate movement. This has not been fully exhausted by the researcher.

The study was limited to a sample size of five years from 2008-2012. More can be done using more study time line or even later as Kenya approach vision 20130.

5.5 Suggestions for Further Studies

In looking at areas of further research, one might consider exploring the effects of exchange rate fluctuations on the pass-through to domestic prices given the fact that the effect of exchange rate volatility on pass-through depends on whether exchange rate movements are perceived to be transitory or persistent.

As explained by Akofio-Sowah (2009) when exchange rate volatility is high, the cost of price adjustment also increases. If the exchange rate shock thought to be transitory, exporters (or importers) would be more willing to adjust their profit margins rather than adjust their prices thus reducing the extent of pass-through but if, however the shock is perceived to be more permanent then exporters and importers would be more likely to change prices than adjust profit margins.

The researcher, suggests study on the effect of exchange rate fluctuations on GDP in EAC members state to draw a conclusive results based on the economic activities of the member states. In future, when larger samples of observations are available, the regression parameters may be re-estimated for comparative analysis with the empirical results of this study.

The researcher, suggests Study on the composition of exports on foreign exchange rate management and its impact on GDP in Kenya.

The researcher, suggests that for effective conclusive study Structural Adjustment Policies and Gross Domestic Product Trend Analysis in Kenya.

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APPENDIX

Annual averages

	2008	2009	2010	2011	2012	
GDP growth rate	1.5	2.7	5.8	4.4	4.6	Y
Exchange Rate	69.2	77.4	79.2	88.8	84.5	X_1
Exports	18.7	14.4	16.5	17.1	15.1	X_2
Imports	42.5	32.8	39.1	43.5	40.3	X_3
Government Expenditure	27.2	27.9	29.7	29.2	28.8	X_4