THE RELATIONSHIP BETWEEN EXTERNAL BORROWING AND EXCHANGE RATES IN KENYA

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DECLARATION

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

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

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
CBK	Central Bank of Kenya
EPDR	External Public Debts Receipts
EPDS	External Public Debt Servicing
GDP	Gross Domestic Product
GNP	Gross National Product
HIV	Human Immunodeficiency Virus
IMF	International Monetary Fund
KES	Kenya Shillings
LOST	Ordinary Least Square technique
PPP	Purchasing Power Parity
REER	Real Effective Exchange Rate
SDR	Special Drawing Right
USD	United States Dollar

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

External borrowing is an important source of funds for developing countries like Kenya. These countries have a low per capita income and inadequate savings hence the need for external borrowing. Therefore, Kenya has had to obtain external debt to add to domestic savings. Kenya has, over the years, depended heavily on foreign financing from official and private sources (Lane *et al*., 2018). Exchange rates tell you how much the country`s currency is worth in a foreign currency. A country`s exchange policies influence rates over the long term. Exchange policy is one of the tools of economic regulation. If domestic saving rates are high enough, the necessity of foreign exchange is still inevitable due to importing investment goods (Fekady, 2014).

Many theories explain the linkage between the inherent variables of components of external debt and the fluctuation in the exchange rate. However, the monetary model of exchange rate determination theory and the monetary approach to international capital movement will be the foundation for this study. According to the first idea, domestic and foreign revenue inventories determine the exchange rate at any given time. According to the theory, the demands for these monies are determined by the capacity of both foreign and domestic income and the rate at which the interests are charged. The second theory explains that the supply and demands of monies are the main forces determining a country's position in another country.

Since gaining its independence, Kenya has implemented public projects to boost its economy, typically with foreign funding and concession loans for its external debt. Instead of investing in projects that will produce a higher rate of return, the majority of these development projects were created to strengthen domestic infrastructure. The expectation was that the GDP growth rate would rise over time, along with corresponding rises in export production, allowing her to fulfill her debt service commitment.

1.1.1 External Borrowing

Black (2010) defines external borrowing as those debts owed by the government or even individuals of one country to the government of another country or international agencies. The debt owed by the federal governments of another country's central

government and other federal states is known as external debt, according to the United States Department of the Treasury in 2010. In contrast, according to the World Bank (2008), external debt is the total of the contractual obligations that citizens of a nation have to foreigners, either to repay the principal owed, regardless of interest, or to pay interest, regardless of principal. The Liabilities in question include money and exchangeable deposits, trade credit and advances, bills and boards, and long-term loans from a creditor's standpoint; external debts can be divided into two main categories: private creditors and official creditors. International institutions like the World Bank are considered official creditors. On the other hand, private creditors include international capital markets (Ajayi, 2015).

Kenya, unfortunately, has experienced significant issues with external debt, as have the majority of emerging nations. The debt issues are caused by the inefficient use and management of borrowed funds, low investment returns, an inadequate policy framework for managing debt, and global changes in trade conditions, interest rates, and trade regulations (Rahim, 2018). The inability of these nations to plan forward for how to repay these monies before receiving them and the restrictions that such debt imposes on future economic policy has worsened the debt problem. Government activities, particularly the buildup of external debt for development projects, are to blame for Kenya's debt problems. Kenya has implemented public projects to strengthen her economy as a developing nation, frequently with assistance from wealthier nations and external debt finance in franchise loans. Rather than just investing in projects that will generate a greater rate of return, the majority of these development projects attempt to strengthen domestic infrastructure. It was assumed that as the Gross Domestic Product (GDP) grew, so would export production and that she would be able to pay off her debts as a result.

1.1.2 Exchange Rate

The value of one country's currency concerning another country's currency is referred to as the exchange rate (Ahuja, 2013). According to Moffat (2012), the exchange rate is the current market price for which one currency would go into another country's currency. Ahuja (2013) classifies the exchange rate system into two: floating exchange rate and

fixed exchange rate systems. The former permits currency to fluctuate freely because it is based on the supply and demand for foreign cash.

Economic events in Kenya, such as the balance of payment crises, have made Kenya undergo various exchange rate regime shifts. The shifts can be classified into two main phases: the phase before 1982 and after 1982. The former was a phase of the fixed exchange rate, while the latter was a flexible exchange rate regime. In the 1960s and the 1970s, the fixed exchange rate was at its peak; thus, the Kenyan currency was overvalued. This, in turn, resulted in the balance of payment crisis between 1971 and 1972. Between 1964 and 1967, the exchange of the Sterling Pound to Kenyan shillings was maintained at 20ksh for one sterling pound. However, in 1967, the pound's value dropped significantly by 14.3%, thus shifting to the Dollar (Ndungu, 2009).

With the appreciation of the US Dollar, Kenya's internal sector faced negative effects currency rate changed from being fixed to a crawling peg to address the increasing tendency of the exchange rate. The peg was converted to a Special Drawing Right (SDR) in 1975. The most reliable currency at the time was the SDR. Kenyan Shillings lost 10.8% of their value after they were converted to SDR. The nominal exchange rate decreased by 14% between 1974 and 1981. The devaluation persisted, and between 1980 and 1982, the Kenyan shilling lost 20% of its real value as compared to the SDR. The currency rate regime changed to a flexible exchange rate regime with a crawling peg up until 1990 and to a dual and floating rate in the 1990s, which is currently in effect, as a result of the progressive depreciation of Kenyan Shillings.

1.1.3 External Borrowing and Exchange Rates

US Dollar, British Pound, and Japanese Yen dominate Kenya's external borrowing, with the US dollar having the highest proportion (Feyen *et al.*, 2015). External debt is the cause of Kenya shilling's devaluation against these currencies. The shilling lost 13.9% of its value versus the US dollar, falling from 14.4% in 1984 to 16.4% in 1985 and averaging 16.4% from 1985 to 1987. At the same time, the debt pointers' debt to gross domestic product and debt to exports increased (Feyen et al., 2015). Similar patterns were seen in 1990–1993, when the Kenyan shilling lost 150% of its value, falling from Ksh.

22.9 in 1990 to Ksh. 58.0 in 1993, and in the years 1999–2000, when it lost 26.1% of its value, falling from Ksh. 61.9 in 1998 to Ksh. 78 in 1999.

Between 2005 and 2008, the debt indicators and the value of the Kenyan shilling relative to the dollar decreased. From 2009 to 2013, a similar pattern was seen as debt indicators increased and the value of the shilling relative to the dollar decreased. These patterns demonstrate a correlation between the level of external debt and changes in exchange rates, with the shilling depreciating against the major international currencies when Kenya encountered high levels of external debt (Feyen et al., 2015).

1.1.4 Kenya's Economic Performance

The real GDP growth rate averaged more than 6.5% annually during the first ten years following Kenya's independence in 1963, with inflation at 3%. (Morris, 2017). The currency rate was fixed, and the balance of payments was in strong condition. The debt-interest ratio was not high enough to be concerning, and exports increased at a rate of 13% annually. Over 1973–1980, the average GDP growth rate fell to 5.4%, while the inflation rate rose. The rise in inflation caused depreciation and changes in currency rates. Economic collapse in the 1970s was caused by the balance of payment issues, monetary policy, and expansionary fiscal. The government engaged in significant foreign borrowing in an effort to address the balance of payments crisis (Morris, 2017). As a result, external debt stock rose by 44% in 1973. Kenyan policymakers likewise choose to regulate the economy rather than liberalize it. Furthermore, during the era of severe external and internal shock, policymakers could not create and implement stabilization and modification policies that might reorient the economy.

The coffee boom of 1976–1977 reduced some of the economic issues of the early 1970s and put a stop to pressure for change (Tadasse, 2016). As export revenues increased, the debt service ratio to exports temporarily decreased from 21% in 1976 to 15% in 1978. The external debt stock increased by 11.1% from 1976 to 1977, and the GDP rose by 9.5%. However, the rise sparked an increase in domestic credit, the money supply, non-bank financial institutions, the appreciation of the dollar, and fiscal growth. As a result, there was deterioration in external terms of trade due to the second oil shock and relaxation of fiscal restraint following the coffee boom on the stability front. Kenya's

export revenues nearly fell off, and the ratio of debt servicing to exports started to increase. In reaction to these stability issues and the political unrest brought on by the attempted coup in 1982 and the severe drought in 1984, the annual GDP growth rate fell to an average of 3% over the 1980s (Morris, 2017). Due to the drought, there was an increase in food imports, which required a high rate of foreign financing to maintain the import. High debt servicing fees resulted from fluctuating interest rates on overseas loans.

During the coffee boom of 1986, the fiscal restraint deteriorated once more, and Kenya started to experience macroeconomic imbalances. Nevertheless, the improvement in macroeconomic stability was only temporary, and Kenya's economic stability faced difficulties. Due to increased public sector employment, which increased the budget deficit and monetary expansion, the inflation rate increased from 5.7% in 1986 to 12.5%. Due to adverse trade terms, sluggish growth in unconventional exports, and growth in public sector employment, the current deficit is still very large. All major macroeconomic performance measures dramatically declined from 1991 to 1992, and the real GDP growth rate was reduced to 2.3% 1992 and 0.4% in 1992. As a result of the Persian Gulf Crisis in 1990–1991, debts started to mount, and external imbalances deteriorated. During this time, the real GDP growth rate was declining, and the external debt indicators, including the debt to GDP and debt to export ratios, started to rise. The external debt increased faster than the GDP (Murungi, 2018). Despite an excessive money supply, a serious lack of foreign exchange, a price form will be filled in the presence of a scarcity of vital commodities, and increased spending in the lead-up to the 1992 elections, they relaxed regulations on foreign exchange transactions in 1992.

The inflation rate jumped from 19.4% in 1991 to around 100% in the second quarter of 1993 due to excessive growth in monetary aggregates. At the start of the 1990s, attention turned to trading financial assets. Due to capital depreciation, domestic demand was low, and firms began to ship their goods. By the end of 1993, the official exchange rate had been eliminated. After the World Bank and International Monetary Fund (IMF) negotiated a shadow program, there was a conducive environment for market-driven policy, and traders had faith in the economy. However, as the monetary policy was successfully tightened, the economy started to stabilize. Inflation decreased from 100% to

55% annually in the third quarter of 1993. The real GDP growth rate grew in the middle of the 1990s. Economic reforms implemented in 1992 caused the real GDP growth rate to be average 4.1% between 1994 and 1996, up from 1.2% in 1993. However, the expansion was brief, and due to political unrest, the real GDP growth rate dropped to 2.4% in 1997. It declined through 2002, reaching a low of -0.2% in 2000. Kenya's economy was negatively impacted by the 1997 Elnino floods, a decline in tourism, a severe drought, and the HIV/AIDS pandemic, burdening the populace.

The aid freeze in the 1990s reduced external debt since there were restrictions on borrowing and lending. The real GDP increased at a breathtaking average pace of 5.4% from 2003 to 2007, which was the highest rate. Investment from the public and commercial sectors, as well as prudent economic management, largely influenced this. As a result of increasing global oil prices and a lack of several key crops, particularly maize, because of a two-year drought that began in 1997, inflation continued to rise. However, due to electoral violence in 2008, there was a significant decline in growth of 0.2%. The government implemented policies to stimulate growth by fostering an environment conducive to domestic investment to stop this slide. It also focused on establishing and maintaining price stability within a single-digit inflation rate of 5.0. However, increased tourism-related activities, a climate that encourages investment, and a thriving construction industry caused the GDP growth rate to climb to 3.3% in 2009. Nevertheless, economic success was hampered by the global economic downturn and adverse weather. The economy grew at a respectable 5.9% between 2010 and 2014, while the key macroeconomic indicators were largely stable, with inflation in the single digits (Morris,2017).

1.2 Research Problem

The effects of external borrowing on economic growth maybe be positive or negative. For instance, lowering tax would immediately, motivate customers to spend. The result is an increase in the marginal propensity to spend and a decrease in the marginal propensity to save. The exchange rates in the country describe the overall economic performance of the country. Links between economic performance and external borrowing can be viewed through the total deficit effect on investments (Mashing adze, 2014). The government

finances some of her development projects through external borrowing. It then indicates that it is time for her to exercise caution to avert the short-term and long-term effects of public debt on her citizens. The emerging problem has to be dealt with, and the interest rate as a key microeconomic variable must be considered.

External borrowing is inevitable for countries like Kenya due to the need for capital for economic growth. External borrowing has created a gap between domestic savings and investment and exports and imports of goods and services. To cover the gap between expenditure and revenues, developing countries have to borrow at one point from internal or external sources Cushman (2008). External borrowing is an essential means of bridging the government financial gap. Unfortunately, this has led to accrual of the level of stock of external debt that has led to payment problems. It has also led to funds being diverted to debt payment at the expense of economic development and domestic consumption.

Various studies have been done on external borrowing, both locally and globally. Global studies include studies by Cushman (2008) on the Analysis of Exchange Rate Volatility, For industrialized nations, primarily the United States, the United Kingdom, Canada, Germany, and Italy, among others; empirical five evidence has been presented by Kenen and Rodrik (2009) on Exchange Rate Unpredictability and Thursby and Thursby (2011), among others. This research has found that exchange rate fluctuation restricts international commerce growth. However, nothing is known about how much this conclusion might hold for less developed nations. There have been very few studies on this nation's experience, primarily because insufficient time series data are available.

Local studies include: In Kenya, Kinuthia (2010) conducted an extensive study centered on fiscal and monetary policy in reaction to the shifts in the exchange rate. The study revealed that policymakers should change interest rates along with the variations of the exchange rates. Ngari (2011) studied the impact of foreign exchange risks on a company's financial results for listed firms in Kenya and discovered that all transactions with foreign currency impact the companies' net income. In order to examine the effects of monetary policy expansion on the real nominal exchange rate Ndung'u (2011)

performed a study. The findings indicated that real income and inflation are adversely correlated with changes in the nominal exchange rate. According to Matiti (2013), who looked at the impact of a few factors on public debt in Kenya, foreign exchange rate depreciation and state indebtedness are directly related. A study on the variables influencing the volatility of the Kenyan shillings against the US dollar was undertaken by Kyule (2016). He discovered that the Kenyan Shilling has been swinging significantly for a long time and that it was almost 106 to the US dollar as of September 2015, compared to 107 in October 2011. The studies mentioned above provide scant evidence for the impact of external borrowing on exchange rates. This study aims to investigate the impact of foreign borrowing on Kenyan currency rates to close a research gap. By doing this, it will also try to respond to the study question: What impact does foreign debt have on Kenyan exchange rates?

1.3 Research Objective

The main objective of this study is to analyze the effect of external borrowing on the exchange rate in Kenya.

1.4 Value of Study

The findings of these study benefit players in the Kenyan financial markets in monitoring the behavior of foreign exchange rates using the local interest rates. Current and prospective investors will better understand how to mitigate the risks of the possible interest and foreign exchange rate fluctuations.

The finding will also help the management of the Nairobi stock exchange, investment Banks, and risk managers with information on how to monitor the behavior of foreign exchange rates using the local interest rates.

The finding of this study is of paramount importance in assisting the policymakers in enabling them to come up with the necessary regulations to guide the central Bank of Kenya in drafting foreign exchange rate and base lending rates regulatory frameworks. The study will also help lawmakers develop appropriate laws and regulations that protect the economy, specifically the members of parliament.

This study finally contributes to the body of academic knowledge on the debate on the relationship between foreign exchange rates and interest rates and their application in a sector. This will form the basis for more study and analysis of the relationship between exchange and interest rates and how they are also related to other economies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter outlines the literature review on external borrowing and exchange rates. The chapter looked into theoretical and empirical literature on the effect of external borrowing and external debt on the exchange rates in Kenya. A summary of the audit is additionally introduced.

2.2 Theoretical Review

Kenya has a currency in which the prices of goods and services are estimated. Exchange rates assume a noteworthy part in foreign exchange. The exchange rate empowers a nation to compare the price of products and services produced in different countries. The following are some theories used to decide the debt weight and its immediate effect on the exchange rate and economic growth.

2.2.1 Debt Overhang Theory

Stewart C. Myers first postulated the theory of debt overhang in 1977 with his theory of company valuation in corporate finance and the effects of debt financing. He examines why companies do not finance their activities with maximum debt even when there is a tax advantage due to the deductibility of interest rates. Debt overhang is a situation in which a country`s foreign debt settlement is burned due to insufficient government income and increased external borrowing (Krugman, 1988). When a government has a higher borrowing and expenditure, debt repayment becomes a great problem, thus also affecting the country's exchange rate.

The theory is important in this study as it explains that external borrowing can be good up to a certain level, beyond which the economic capabilities and country`s currency value

drops significantly. Government should put in place policies that will control the extent to which a country has to seek external financial assistance and the level of utilization of borrowed money (Pattillo, Poirson & Ricci,2002).

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2.2.2 Keynesian Theory

This theory was discovered by the British economist John Maynard Keynes (1936). The model suggests that there is no real burden associated with foreign borrowing. Foreign debt will always positively impact the exchange rate as long as it is directed into constructive economic activities and will lead to economic growth (Tannschke, 1994). This model explains that external borrowing is useful because it adds value to the economy if placed into long-term income-generating projects with the caution of payment in the government's mind. Economic growth will directly have a positive impact on the country's currency. The value of the currency increases as the economy of the country improves. However, it does not pay attention to expectations about inflation and the real quantity of money (Grubel & Grubel, 1976).

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2.2.3 The Monetary Model of Exchange Rate Determination theory

The Monetary Model of Exchange Rate Determination was developed by Dornbusch (1976) in its sticky-price variant. Frenkel (1976) and Mussa (1976) introduced the monetary model with flexible prices. It was introduced in the middle of the last century. After its introduction, many theories and modifications have been developed. They include the monetary model, the equilibrium and liquidity models, the balance of payments approach, the portfolio balance model, the purchasing power parity, and many more (Villamizar, 2017).

The flexible-price monetary model assumes that the purchasing power parity (PPP) always holds while the price of goods is flexible (Afat *et al.,* 2015). This assumption implies that the real exchange rate is constant over time. The sticky-price monetary model states that prices of goods are sticky in the short run and that PPP holds only in the long run but does not hold in the short run because goods prices adjust slowly relatively to asset prices. The two models assume constant domestic and foreign money demand functions, impeccable capital mobility, and exposed interest equality. Although the monetary model does not apply in the real world, especially in the short run, it shows a strong relationship between exchange rates, money, price, income, and interest rates.

The limitations of monetary models are not restricted to the deviations from PPP and the deficient requirement of the money demand function (Were *et al.,* 2014). These models decompose real money balances and use money supply and price level individually to integrate PPP causing a constraint for the econometric model that requires a strong relationship between the price level and money supply. Moreover, the model assumes that income elasticity and interest semi-elasticity of money demand is steady. Nevertheless, they have probably been fluctuating due to financial predicaments, regulatory changes that transpired in the banking sector, and the development of financial systems.

2.3 Determinants of Exchange Rates

While external borrowing influences exchange rates, it is not the only determinant. Others include interest and inflation rates, the balance of trade deficits, and political and economic stability, to name just a few.

2.3.1 External Borrowing

The government and agencies under it require financing for them to run, which, if not sufficiently paid for by revenues collected, must be met through borrowing. The finances can be acquired through internal or external borrowing, in which case the two build public debt (Nwanne & Richard, 2015). It borrows externally when internal borrowing is insufficient to cater to the government's budget. External borrowing refers to monies the government borrows from outside sources to balance revenues and expenditures. It is especially attractive when the government intends to undertake large projects yet cannot meet the investment required. Such projects are expected to boost economic growth and attract more global investors. However, when the public debt is very large, it serves the opposite purpose by triggering worry in them about the possibility of default or rising inflation, in turn scaring them from trading in the local currency, in which case there is an over-supply causing exchange rates to fall.

According to Nwanne and Richard (2015), there is a positive relationship between external debt receipts and servicing and exchange rates. However, they note that the relationship is negative in periods around debt cancellation, which means that high debt credibility is necessary to maintain a direct relationship between the two variables. In addition, high and unsustainable public debt is evidenced to lead to high real effective exchange rates volatility (Odera, 2015). Therefore, external borrowing can affect exchange rates positively and negatively depending on how much debt is accrued and a country's reputation in credit matters.

2.3.2 Interest and Inflation Rates

Inflation is the rate at which merchandise and ventures increase in cost. In contrast, interest rates represent the charges made by banks for people to obtain loans or, on the other hand, the income accumulated on savings. National bodies such as the Central Bank

of Kenya oversee the average interest rates charged to balance inflation and maintain economic growth. The two are connected because lower loan fees prompt more individuals to obtain cash through borrowing, expanding their spending and consequently pushing up prices. On the other hand, high fees on loans lessen spending, minimize spending, and, lastly, risk economic stagnation. It is a delicate balance, and exchange rates respond to fluctuations in both, where either can be viewed as a marker of present and future monetary performance, thereby impacting investment decisions and currency trading (Kiruga, 2015). Declarations of an expansion in loan costs, for instance, may increase the value of the local currency because investors take it as a chance to obtain higher returns from their savings, increasing the purchase of local currency.

Jattani (2013) stated that both inflation and interest rates have a direct relationship with exchange rates. She further explains that high exchange rates in Kenya result from high inflation and interest rates. The claim is affirmed by Kiruga (2015), who noted that the relationship between foreign exchange rates and interest rates is linear and positive. However, the study found the effect not to be significant. Okoth (2013), on the other hand, found a very significant positive relationship between the two variables, concluding that an increase in interest rate is necessary to stabilize exchange rate depreciation and curb inflationary pressure.

2.3.3 Balance of Trade Deficits

The balance in trade portrays the distinction in value between the products and services that one nation buys from abroad versus the estimation of those that she sells to others. The trade balance is a deficit if the country purchases more than it sells. On the other hand, if more are sent out than imported, the nation has a balance of trade surplus. This influences exchange rates in that if a country purchases more than it offers, it needs more foreign capital than it is receiving through exporting local products. This creates a demand for foreign currencies which can increase their value on the open market. Conversely, there is likely to be an overabundance of the local currency, which is not being utilized because more is being spent abroad (Amdany, 2007). This excess supply drives down the value of the local currency, implying that when there is a balance of trade deficit, the local currency is likely to lose value against foreign currencies.

According to Amdany (2007), the trade balance is insignificant, while terms of trade, net capital flows, nominal exchange rate policy, and monetary policy are very significant determinants of the real exchange rate. Moreover, the study explains that monetary and expansionary fiscal policies tend to strengthen depreciating effects on the nominal exchange rate and terms of trade on the real exchange rate.

2.3.4 Political and Economic Stability

The economic and political climate highly influences markets in a country. This is because investors only place their money in safe environments where they run a lower risk of losing it. Therefore, foreign investment is less in countries with unpredictable political and economic landscapes. When faced with the prospect of change in the political and economic situation, investors are tempted to pull out their investments, which may cause foreign exchange rates to crash (Jattani, 2013). For stable exchange rates, calm in politics and the economy is necessary. However, this factor is complex and highly unmanageable since the whole global economy and political environment are interwoven, meaning those in one country spill over to others.

According to Jattani (2013), the political factor and exchange rates are inversely related, with the unpredictable political environment having adverse effects on exchange rates. The study explains that foreign investment decreases with political tension and uncertainty, negatively affecting economic growth. When investors pull out investments, there is a growing demand for foreign currency, which makes local currency lose value against it. Therefore, exchange rates fluctuate with changes in the political and economic environment.

2.4 Empirical Studies

Global studies include: Fong (2013) investigated the determinants of the Canada-US Exchange Rate. According to the study, the current account indicates the demand for a particular country's export and thus their currency. The study concluded that it was difficult to determine the factors that affect the US- Canada exchange rate. Although factors that theoretically should have a direct effect on the trade relationship are experiencing long-run changes in themselves (the long-run growth of trade surplus), their

actual effects are quite minimal. In theory, aspects such as current account surpluses and commodity price fluctuations have direct effects on exchange rates. In conclusion, the study agrees that the issue is still unresolved and thus requires more research before the same factors are delineated, and their effects on the exchange rate are determined.

Patel and colleagues (2014) studied the factors influencing exchange rates, economic formulas and prediction models. The purpose of this paper was to indicate the main factors influencing currency rates, focusing on economic formulas based on economic theory to check the health of currency and useful prediction models for currency exchange rates. According to the study, various factors affect the movement of currency in India and thus directly affecting the performance of the local currency against the foreign currency. The study found these factors to be; inflation, rate of interest, capital account balance, the role of spectators, cost of manufacture, the debt of the country, gross domestic product, and political stability. Furthermore, the study concluded that for a country to have a healthy economy, close monitoring of the above-stated factors is necessary. Finally, a country's economic data can be studied, and the currency's future value can be predicted using prediction models.

Nwanne and Richard (2015) investigated the relationship between external public debt servicing and receipt and exchange rate fluctuations in Nigeria. The study covered the period from 1981 to 2013, and the variables used included external public debt receipts, external public debt servicing, and the exchange rate. The paper concludes that EPDR (external public debts receipts) affect significantly and positively the value and exchange rate of the naira, while EPDS (external public debt servicing) affects the value and exchange rate of the naira negatively; both variables have a positive long-run relationship with the exchange rate. It follows that external public debt receipts and external public debt servicing directly influence a country's exchange rate. Though the paper comprehensively covered the two, i.e., EPDS and EPDR, gaps still exist on the role of international markets in affecting the exchange rates in a country.

Khan (2016) studied the factors that affect the exchange rate through a case study of Pakistan. The study looks into the influence of various macroeconomic factors on the exchange rate: export, import, inflation, and current account. Data on the variables was

collected over a period ranging from 1991 to 2014. The study found that Exchange rate and interest were stationary at the level, while the rest of the variables were stationary initially. Johansen's cointegration test is applied to observe long-term relationships among variables. Furthermore, the study concluded that export, interest, and inflation significantly affect the exchange rate, while import and current accounts are insignificant. The paper recommended that the government of Pakistan should consider how variation in exchange rates affects the performance of the macroeconomic environment while implementing her policies.

Local empirical studies include: Jattani (2013) studied the relationship between exchange rates and selected macroeconomic variables in Kenya. The study was carried out for the period running from 2000 to 2012 and adopted a quantitative research design. In addition, data analysis is done using SPSS, after which it is presented in figures and graphs. According to the research, Kenya's exchange rates are high and, on the rise, with the political factor, balance of payment, average annual interest rate, and inflation rate having the most influence on the exchange rate. Therefore, the study recommends enacting policies that favor exchange rates, such as improving the balance of payment and reducing inflation.

Okoth (2013) sought to understand the effects of interest and inflation rates on exchange rates in Kenya. The study covered 2007 to 2012, where the multiple linear regression model was used to model the relationship between two explanatory variables and a response variable by fitting a linear equation to the observed data. The study found that the relationship between the variables is very significant, with a 0.05 significance level. The study concludes that an interest rate increase is necessary to stabilize the exchange rate depreciation and curb inflationary pressure. However, though the study covered the areas of interest, it is recommended that there be more research on factors affecting exchange rates in the market and its interrelationship with factors such as inflation and interest rates.

Odera (2015) investigated the effect of external public debt on exchange rate volatility. According to the study, Kenya is facing a rising trend in external public debt and has experienced changes in exchange rates in the past decades. Additionally, the research

dwells on the effects of external public debt on real effective exchange rate (REER) volatility under the complete float regime from 1993 to 2013 using quarterly data. A linear model was developed for data analysis, and exchange rate volatility was regressed against inflation, interest rates, GDP growth rate, money supply to GDP ratio, and external debt to GDP ratio using the Ordinary Least Square technique. Conclusions from the study showed that the external debt to GDP ratio had a negative and significant effect on REER volatility, while interest rates had a positive and significant effect. Factors such as Inflation, GDP growth rate, and money supply to GDP ratio were found not to have any significant effect on the exchange rate.

2.5 Summary of Literature

This chapter has discussed the monetary model of exchange rate determination theory and the monetary approach to international capital movement theories, which relate to external borrowing and exchange rates. In addition, the determinants of exchange rates have been discussed, where the relationship between external borrowing, inflation and interest rates, the balance of trade deficits, political and economic factors, and exchange rates are established. The chapter then gives an empirical review containing global and local studies, after which a conceptual framework on which the study is built is drawn. While numerous studies have been carried out on the factors that influence exchange rates, there is very little on the effect of external borrowing on the exchange rates. Therefore, there exists a research gap that this study seeks to fill. Furthermore, there is no consensus on the relationship between the two variables and the significance of external borrowing in determining exchange rates.

2.6 Conceptual Framework

Independent Variables

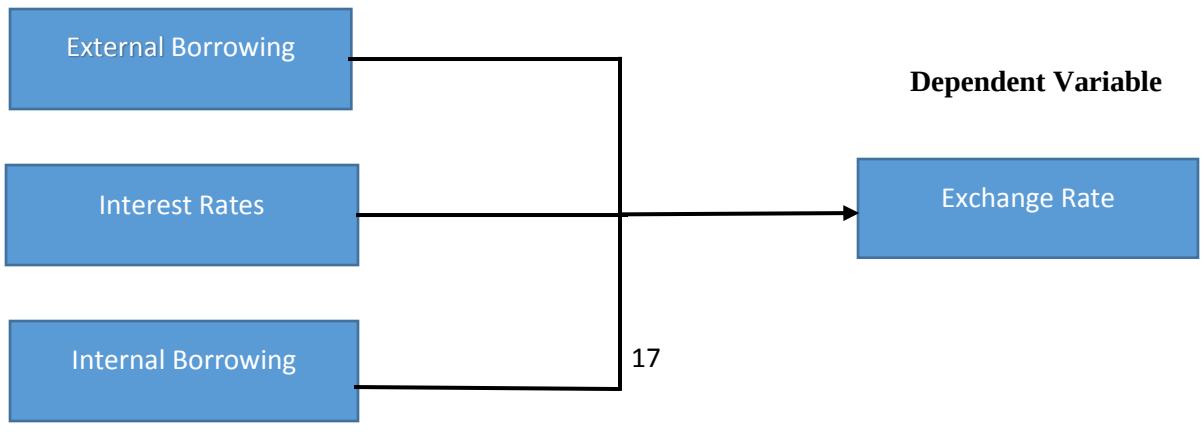

Figure 2.1: The conceptual framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section of the study will lay out the research methodology process. It will entail the research design, study population, data collection, and analysis.

3.2 Research Design

A research design outlines how the research analysis will take place, which involves data collection methods, the type of instruments used, and how the instruments will be used. According to Marczyk (2017), the research design is a master plan/framework or blueprint specifying the methods and procedures for collecting and analyzing the needed information. The research design used in this study is the descriptive research design. The descriptive design leads to the discovery of associations among the different variables.

The design explains current practices, draws judgment and develops theories. The core objective of descriptive research is to describe the state of affairs as it currently exists. The design is appropriate for carrying out a complete, in-depth, and comprehensive investigation where much emphasis is placed on analyzing the effect of external borrowing on the exchange rate in Kenya.

3.3 Data Collection

This research will use secondary data. This data will be taken from financial statements of commercial banks retrieved from the Central Bank of Kenya and the respective bank's websites. Due to the quantitative nature of the data, secondary sources will be used. The data will help the researcher get quantified data that will be useful in making conclusions and providing recommendations on the effects of external borrowing on the exchange rate in Kenya.

The researcher will rely on secondary time series data to empirically assess the effect of external borrowing on Kenya's exchange rates by collecting monthly data from the year

2008-2018. Efforts will be made to ensure that data sources were reliable for all the variables. All nominal variables were converted to real values measured in Kenyan shillings. Data for external borrowing was converted into a financial calendar year to relate to data on exchange rates. 2013 will be used as the base year due to data availability.

3.4 Data Analysis

The researcher intends to use descriptive statistics for data analysis. Descriptive statistics provide simple summaries of the information collected. Descriptive statistics plays a significant role in the presentation and interpretation of analyzed data with intensive use of frequencies and percentages in tables. The data collected will be presented in both quantitative and qualitative (that is, using numerical and words) descriptions. The data will be organized according to objectives and research questions.

The study findings, conclusions, and recommendations will be presented in chapters four and five. The collected data will be first classified and then tabulated. Descriptive statistics and the weighted average method will be used to analyze the data. Interpretation of the analyzed data is on percentages by classification and responses towards a particular aim of the investigation. Additionally, the researcher will use a statistical package for social sciences (SPSS version 22) to analyze data and produce charts, graphs, and percentages to analyze the data collected from various sources.

3.4.1 Analytical Model

The study will apply a multivariate regression equation to estimate the extent to which the variables influence each other. The model is shown below:

$$\mathbf{Y=\beta+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5e}$$

Y = Exchange rate

β = Constant term of the regression

e = Standard Error term

b = Regression coefficients

β = Constant term of the regression

$\mathbf{X_1}$ = External Borrowing measured as total debt per year

$\mathbf{X_2}$ = 2nd Control Variable Interest rates measured using base lending rates in Kenya

$\mathbf{X_3}$ = 1st Control Variable being Internal Borrowing measured as the total value of locally held Treasury bills per year

$\mathbf{X_4}$ = Total value of imports

$\mathbf{X_5}$= Total value of exports

e = Standard Error term

b = Regression coefficients

3.4.2 Test of Significance

The F- test will be used to determine the significance of the regression. In contrast, the coefficient of determination, R^2, will be used to determine how much variation in the dependent variable is explained by independent variables. This will be done at a 5% significance level, and correlation analysis will be carried out to find the direction of the relationship between the dependent and the independent variables.

CHAPTER FOUR: DATA ANALYSIS, RESULTS & DISCUSSION

4.1 Introduction

The first part of the data analysis is to establish the ratios associated with foreign debt and economic growth. The research first presents a dispersed plot diagram, which provides insight into the likely link between real GDP and foreign debt. As illustrated in Figure 4.1, the connection between real GDP and foreign debt is often negative, implying that the bigger a country's external debt, the lower its real GDP growth. In addition to the above, a check for Cross-Section Dependence (CSD) and series stationarity was performed since these are fundamental difficulties in panel data with a broad temporal dimension. Furthermore, testing for CSD is critical in regional studies where nations are heavily interrelated. Ignoring these factors may expose an analysis to the risk of being incorrect.

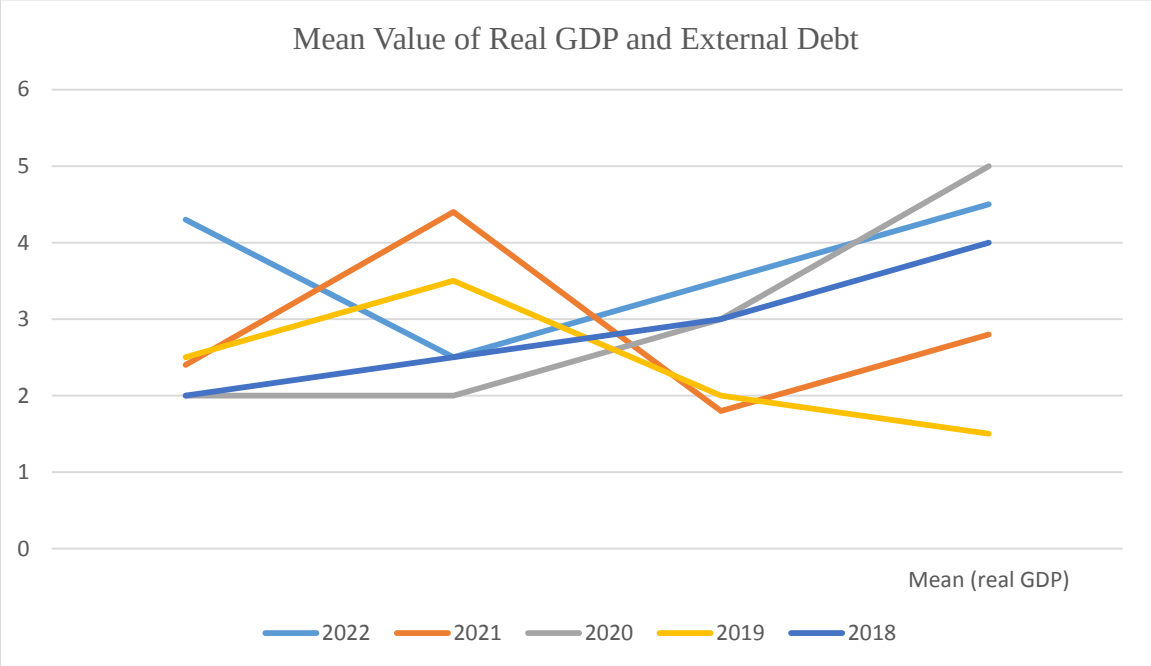

Figure 4.1: Mean Value of Real GDP and External Debt over last 5 years

4.2 Cross Sectional Dependence Test

While additional CSD tests, such as the Lagrange Multiplier test and the Langrange Multiplier adjusted test, are available, the Pesaran CSD test is used in this work. The test is based on the average pair-wise correlation coefficient of the ordinary least square residuals from the panel's individual regressions. It works with both balanced and unbalanced panel data and is resistant to structural breakdowns in the slope coefficients and error variances. Model 1 (linear) and Model 2 (non-linear) CSD tests were performed. Table 4.1 summarizes the findings. In both models, the investigation failed to reject the null hypothesis of cross-section independence.

Table 4.1: Results of Cross-sectional Dependence Test

Pesaran's test of cross-sectional independence		***p-value***
Model 1(Linear)	0.355	0.702
Model 2 (Non-Linear)	1.042	0.361

Source: Computational results output from Stata

4.3 Panel Unit Root Test

The Im-Pesaran-Shin (IPS) unit root test was used in the study to take serial stationarity in the panel into consideration. In dynamic heterogeneous panels, the test performs well (Moyo & Tursoy, 2020). The test additionally takes into account group-specific error variances, heterogeneity dynamics, and serial correlation in residuals. Table 4.2 displays the results of the IPS unit root test. At the 1% level of significance, it was discovered that the series were stationary at either level or following the first difference. Real GDP (Realgdp) and inflation (Inf) were discovered to be stationary at the level, but external debt (ED), trade openness (Opn), corruption (CoC), and political stability (PS) remained stable after the first difference.

Table 4.2: Results of Cross-sectional Dependence Test

Variable	Level	First Difference	Integration Order

Real GDP	-4.162		1(0)
ED	0.188	-5.221	1(1)
Opn	-1.094	-6.206	1(1)
Inf	-5.290		1(0)
CoC	-1.145	-6.412	1(1)
PS		-10.214	1(1)

4.4 Estimation Results

Tables 4.3 and 4.4, respectively, give the estimation results for the two models: Model 1 (linear) and Model 2 (non-linear). Several estimation results are shown, however only the results from the resilient to heteroscedasticity PCSE (for the linear model) and FEM (for the nonlinear model). Tables 4.3 and 4.4, respectively, are used for analysis (by applying the robust standard errors). However, it should be emphasized that for both models, the outcomes of the POLS and REM agree with those of the PCSE and FEM, respectively. We now present and discuss the findings in the manner described below.

4.3.1 Correlation Results

In Table 4.3, four estimation results are presented. The Hausman test statistics result indicated that the REM was more appropriate than the FEM as it fails to reject the null of the REM being appropriate. This suggests that the country-specific unobserved effect is not correlated with the explanatory variables. Thereafter, the Breusch and Pagan Lagrange Multiplier (BPLM) test was used to decide between the REM and the POLS. The BPLM result revealed that the POLS is more appropriate as there is no panel unobserved effect. Therefore, the study failed to reject the null of zero variances across entities. However, using the Wooldridge test for auto-correlation, it was observed that the POLS model suffers from serial correlation. Against this backdrop, the study resorted to the PCSE which is robust to auto-correlation and heteroscedasticity, hence, being used for the analysis. As alluded to earlier, results from the FEM, REM and POLS are consistent with the results of the PCSE for the linear model.

From the PCSE results, External debt (ED), Openness to trade (Opn) and Control of Corruption (CoC) were found to be significant at the conventional level of significance. On the contrary, Inflation (Inf) and Political Stability (PS) were found to be statistically

insignificant. With the exception of CoC, all the variables carried their expected signs. The result reveals that a one percentage increase in external debt would lead to a decline in real GDP by 0.03%, with a statistically significant coefficient at the 1% significance level. The result indicates that an increase in external debt is harmful to growth in Kenya. Conventionally, in the loanable funds market, the interest rate increases as government debt accumulates. The increase in the rate of interest could demotivate investors from investing in the country. As such, the surge in external debt would crowd-out both domestic and foreign investment and this will, inevitably, harm national economic growth.

Table 4.3: Results of Linear Model Estimations

	FEM	REM	POLS	PCSE
ED	-.0155 (.0042)	-.0194 *** (.0039)	-.0251*** (.0051)	-.0371*** (.0095)
Opn	.0724 (.0162)	.0629 (.0124)	.0619 (.0896)	.0814*** (.0143)
Coc	-.1553 (.08)	-.1064 (.0331)	-.0324 (.4189)	-.0671 (.2691)
PS	.6351 (.7610)	-.4891 (1.592)	-.0571 (1.4219)	.0077 (.3825)
_cons	.1518 (3.1122)	4.2193 *** (1.678)	5.4248 (1.3772)	4.9142 *** (1.2519)
Obs.	300	300	300	300
Hauman test	Prob >Chi2=0.1849			
Bruesch and Pagan LM test	Prob>Chibar2=0.1000			

The finding from the study is consistent with the works of Philips (2021) and Oberholzer (2021). Differently, the more economically open the Kenyan economic scene becomes, the higher the real GDP. The result shows that a one percentage increase in trade openness would increase real GDP growth by 0.07% annually in the country. The result purports that greater openness to trade could stimulate growth, given that, as countries become more open, it offers them the opportunity to benefit from the use of more advanced technologies, as well as, the transfer of improved skills thus, leading to a more rapid growth. The result bodes well with the findings by (Moyo & Tursoy, 2020).

Furthermore, the control of corruption (CoC) was found to affect growth in the Kenyan marketplace negatively, with a significant coefficient. The finding shows that a unit increase in CoC would reduce economic growth by 70% annually. The result goes against the study's expectation. However, the result supports the findings of Lane & Milesi-Ferretti (2018) and Murungi & Okiro (2018). From a theoretical stand point, if the control of corruption is not accompanied by other structural improvements like the reduction in rigid bureaucratic structures, unnecessary delays that could discourage investors could be created thus, slowing down growth

4.3.2 Non-Linear Model Estimation Results

The results of the non-linear model (threshold model), as presented in Table 4.4, reveals that, the FEM was the most appropriate for analysis based on the Hausman test statistics which shows that the unobserved country effect is correlated with the explanatory variables. This conclusion was further strengthened after the BPLM test reveals that there is a panel unobserved effect, thus, rejecting the POLS as an appropriate estimator. From the result, the threshold condition (> 0 and < 0) was met and the coefficient were found to be statistically significant. The Wooldridge test for auto-correlation confirms that, there is no evidence of auto-correlation.

The findings from the non-linear estimation are relatively consistent with the results of the static model. The coefficient of openness is positive and statistically significant, indicating that openness of the Kenyan economy will promote growth. The result also shows that in line with general expectation, inflation was found to affect growth negatively, with a statistically significant coefficient. Higher level of inflation creates

macroeconomic instability and this could affect the confidence of investors negatively. The result indicates that a one percentage point increases in inflation would reduce real GDP by 0.2%.

Table 4.4 Results of Non-Linear Model Estimations

	FEM	REM	POLS
ED	.0234** (.0112)	.0194 *** (.0139)	.0004*** (.0100)
EDSQ	-.0004*** (.0006)	-.0002*** (.0011)	.001 (.0006)
Open	.0763*** (.0158)	.5610 (.0109)	.0467 (.3267)
Inf	-.1895*** (.8676)	-.1462 (0.673)	-7723 (0.5926)
COC	.0217 (.7622)	-.5824 (.6748)	-5.009 (.3751)
PS	.0846 (.3456)	-.116(.2467)	-.1298 (.2430)
_cons	.5412 (3.4981)	4.5132 (1.5923)	4.8743 (1.3245)
Obs.	300	300	300
Hauman test	Prob >Chi2=0.0772		
Bruesch and Pagan LM test	Prob>Chibar2=0.0094		

Furthermore, the result suggests that initially external debt (ED) can promote economic growth but the doubling of external debt, represented by external debt squared (EDSQ), would eventually translate into a negative effect and hurt economic growth in the country. This is evident in positive and negative coefficients for ED and EDSQ respectively.

Having met the pre-conditions, the threshold level is determined by taking the derivative of real GDP with respect to ED and EDSQ and set to zero as follows;

$$\frac{\partial realGDP}{\partial ED} = 0.0222 - 2(0.0001)ED = 0$$

$$\Rightarrow 0.0222 = 0.0002ED$$

$$\Rightarrow ED = \frac{0.0222}{0.0002} = 111\%$$

Equation 4.1 Comparing ED and EDSQ

As shown in equation (3), the threshold level of external debt in Kenya is 111%. The study identifies a nonlinear relationship between external debt and real GDP. This shows the optimal level of external debt, and serves as the turning point, beyond which debt will negatively affect growth. The implication of this finding is that, Kenya could have their external debt as high as 111% and economic growth will not be hurt but any debt exceeding this level would affect growth negatively. Nonetheless, the results show that any increase in external debt above 111% will reduce growth in the country by 0.0001% while below the threshold level economic growth will improve by 0.0222%

4.4. Summary

The findings indicate that interest rates and foreign state debt have a considerable impact on Kenya's real effective exchange rate volatility. Using the indicator for debt burden, external rate of debt to GDP The results showed that a rise in external public debt will have. External public debt has a detrimental impact when real effective exchange rate volatility increases. Volatility of the exchange rate. On the other hand, it was discovered that the interest rate was important connection between exchange rate volatility. The volatility of Kenya's exchange rate would decline with a rise in interest rates. However, the analysis discovered that there is no substantial correlation between external rate volatility and inflation, GDP growth rate, or money supply to GDP.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings

The study's major goal was to discover the threshold amount of foreign debt that promotes growth as well as the effects of external debt on economic development in the Kenyan economy. Panel data were used for the investigation, which covered the years 2018 to 2022. Four estimate approaches were used: Pooled Ordinary Least Squares (POLS), Fixed Effect Model (FEM), Random Effect Model (REM), and Panel Corrected Standard Errors (PCSE). Both linear and non-linear models were included in the study. The ImxPesaran-Shin (IPS) unit root test-based stationarity test discovered a combination of I(0) and I(1) variables.

The linear model results indicated that the key predictors of economic development in Kenya throughout the research period were external debt (ED), openness to trade (Opn), and corruption control (CoC). The study finds a favorable association between openness and growth, but foreign debt and corruption control have a negative impact on growth. Furthermore, the non-linear model results work well with the linear results. The non-linear outcome revealed that openness has a beneficial influence on growth. The results, however, revealed an inverse link between inflation and growth.

The study found a nonlinear link between foreign debt and real GDP and showed that 111% is the best amount of external debt in the Kenyan economy. Intuitively, the study revealed that every rise in foreign debt beyond 111% reduces economic growth by 0.0001%, whereas below the threshold level improves economic growth by 0.0222%. The study's primary policy consequence is that economic leaders in the country should guarantee that foreign debt is used in growth-enhancing industries in order to increase growth. Governments should also adopt debt management strategies in order to maintain debt levels within acceptable boundaries.

According to Lane & Milesi-Ferretti (2018), debt management is an extremely delicate topic that developing-world countries must solve. Given the developing world's low GDPs, it is critical to keep debt levels low as well. Furthermore, governments must explore other sources of finance for basic infrastructure financing. This may be accomplished by increasing the domestic resource mobilization push. Governments should also put in place methods to prevent or eliminate corruption, such as naming and shaming corrupt officials and strengthening the courts and anti-corruption institutions.

5.2 Conclusion

In developing and transition economies, the exchange rate is one of the most significant macroeconomic factors. It has an impact on exports, imports, and economic activity. The capacity of monetary authorities to regulate exchange rate volatility may considerably benefit an economy since exchange rate volatility impacts economic growth by raising uncertainty and risks, discouraging trade and investment. This study empirically examined the link between real effective exchange rate volatility and external public debt load, recognizing that foreign borrowing may significantly contribute to economic growth if managed wisely. The data suggested that external public debt had a negative and substantial influence on exchange rate volatility, and that it was partially responsible for exacerbating the actual effective exchange rate, resulting in a volatility trend.

5.3 Policy recommendations

The study's conclusions have important policy implications for managing foreign public debt. As illustrated by this study, a lack of appropriate debt management measures will contribute to increased exchange rate volatility. Policymakers must guarantee that both the amount and pace of increase of external public debt are sustainable, that is, that the debt sustainability indicator external debt to GDP ratio is low, and that initiatives to minimize excessive external public debt accumulation are pursued. Furthermore, policymakers should guarantee that borrowed money are invested in higher-yielding projects/investments (Philip, 2021). This is necessary for a growing economy that is still laddled with debt such as the Kenyan one.

Debt management needs to be linked to a clear macroeconomic framework, under which the Kenya Government will seek to ensure external public debt is sustainable. Prudent debt management strategy will greatly benefit Kenya by contributing to economic growth which one of the main objectives of economic policy and decision making. This will ensure that the government is able to streamline the efforts that can eventually lead to a better performance of the Kenyan shilling in the forex market.

5.4 Limitation of the Study

The main constraint of this study is that the real effective exchange rate was estimated using the currencies of two nations, the United States and the United Kingdom. Only eleven percent (11%) of Kenya's entire commerce is accounted for by these two nations (Moyo & Tursoy, 2020). This was due to a lack of quarterly statistics for other nations with whom Kenya deals, particularly developing countries.

Second, the study concentrated primarily on the connection between currency volatility and foreign public debt. Other exchange rate drivers were also included as control variables in the research. These variables may not have fully explained the volatility of the exchange rate.

5.5 Suggestions for areas further research

This research offered empirical data on the impact of foreign public debt on Kenyan currency rate volatility. Comprehensive study would necessitate the use of daily, weekly, or monthly data. Other debt sustainability measures, such as the external debt to exports ratio and the debt payment to export ratio, must also be included as explanatory factors in explaining exchange rate volatility.

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APPENDICES

Appendix 1: List of firms sampled

1	Central Bank of Kenya
1	CFC Stanbic Bank
2	HF Markers
3	FXPesa
4	FXPro
5	Scope Markets
6	Barclays Bank Ltd
7	Diamond Trust Bank Kenya Ltd
8	Equity Bank Ltd
9	Housing Finance Co Ltd
10	Kenya Commercial Bank Ltd
11	NIC Bank Ltd
12	Standard Chartered Bank Ltd
13	The Co-operative Bank of Kenya Ltd
14	Jubilee Holdings Ltd
15	Kenya Re-Insurance Corporation Ltd