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The short term and long-term impact of Interest Rates on Exchange Rates in Kenya

Vaishni K Naran, 140783

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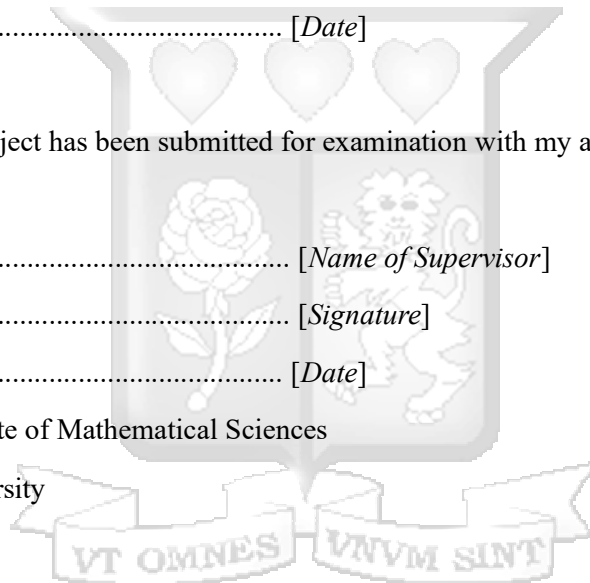
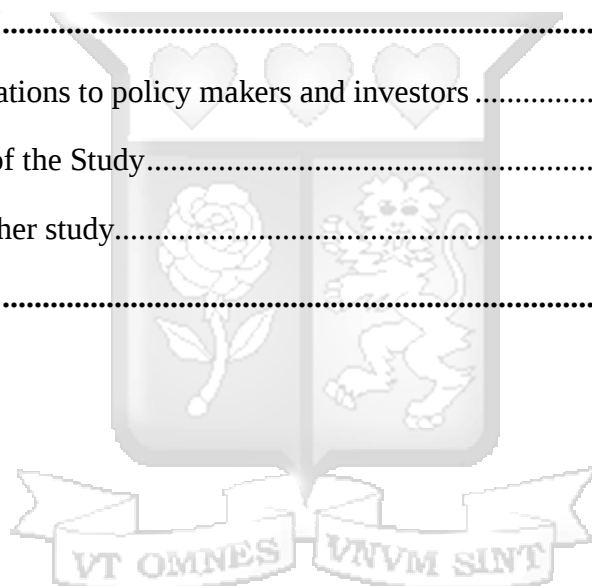


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LIST OF ABBREVIATIONS

CBK - Central Bank of Kenya

RER - Real Exchange Rate

PPP - Purchasing Power Parity

IRP - Interest Rate Parity

IFE - International Fisher Effect

BOP - Balance of Payment Theory

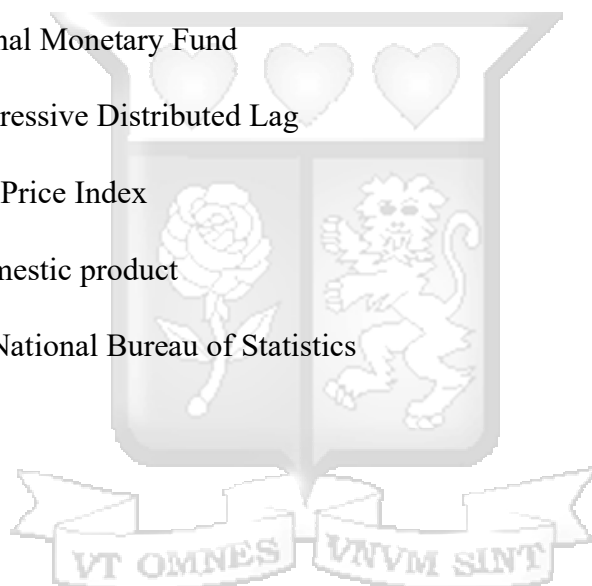
IMF - International Monetary Fund

ARDL - Autoregressive Distributed Lag

CPI - Consumer Price Index

GDP - Gross domestic product

KNBS - Kenya National Bureau of Statistics



ABSTRACT

The interaction between interest rates and exchange rates forms an important component of macroeconomic stability and monetary policy in developing economies. This research focuses on the developing nation of Kenya, examining the extent to which changes in interest rates influence fluctuations in the exchange rate of the Kenyan Shilling against the US Dollar. Specifically, the study evaluates the causal relationships between these variables while considering key moderating factors such as inflation and GDP. By employing advanced econometric models, including the Autoregressive Distributed Lag (ARDL) and the Error Correction (ECM) models, the research analyzes historical time-series data spanning multiple economic cycles from 2019 to 2024. The study seeks to address questions surrounding the effectiveness of interest rate adjustments as a tool for exchange rate stabilization and explores whether this understanding of the intervention between interest rates and exchange rates can be used to derive the intended outcome. The findings of the paper revealed that in the short-term the correlation coefficient between interest and exchange rates stands as -0.0008715 . This indicated a weak negative relationship between the variables in the short-term. This means that in the short-term the impact of interest rates on exchange rates is very small and negative. In the long-run however the ECM model found that the correlation coefficient between interest rates and exchange rate was 0.7033075 . This indicates that in the long-run, interest rates tend to have a positive impact on exchange rates which is much more significant than the impact in the short-term.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A country's borrowing rate and currency rate are crucial indicators of its economic health. Identifying the various factors that impact interest and currency rates are therefore important. Factors that affect borrowing rates include economic performance, inflation rate, governmental policies, supply and demand factors, credit risk, and loan period on the other hand the factors that affect currency rates include inflation rate, borrowing rate, government debt, political stability, terms of trade, current account deficit, mainly to mention a few. Nonetheless, a few studies have focused more on the short and long-term impact of borrowing rates on currency rates.

For the management of the macroeconomic situation, one of the main challenges faced is currency rate fluctuations. During economic crisis periods, these subject gains from currency rates are more important as they play a major factor in the costs and the time it takes for the recovery period. Interest rates along with other monetary policy instruments contribute to coping with unpredictable currency rate fluctuations. Therefore, despite the contradicting research, it is usually accepted that tight monetary policies and a relatively high borrowing rate do in fact help to stabilize fluctuating currency rates.

One of the main developments in the area of Interest rates and Exchange rates in Kenya is the high reliance on borrowing rates as a monetary policy to control currency rates in promoting foreign investments into the Kenyan economy. Past studies indicate that the relationship between borrowing rates and currency rates is well observed and easily identifiable in the long run (beyond one year) where the interest-rate differentials are sufficiently large. During the short-run on the other hand, the relationship between borrowing rates and currency rates in developed countries tends to be more unstable and has the tendency to display the opposite results to the one predicted by the uncovered interest-rate parity relationship. (Tresor economics, 2007) This paper aims to address this by working to increase the understanding of the short run effect of borrowing rates on currency rates in developing countries such as Kenya which has not been covered well enough in other studies.

The European Commission suggested an existence of a relationship between currency rates and borrowing rates as seen by the fluctuations in foreign currency rates caused by the movement in borrowing rates. This relationship exists because high borrowing rates can mean higher returns for investors for their investments. These high borrowing rates would lead to an increased demand for the currency of a particular country as investors would be attracted to investing in the domestic country and be more willing to bring in foreign direct investments (FDI) to such a country where the borrowing rates are higher and as a result returns are high hence raising the foreign currency rate and the value of the domestic country's currency. On the other hand, a country with low borrowing rates tend to deter investments as they tend to be unattractive to investors consequently lowering the country's currency against foreign countries.

The Kenyan investors have also been using the borrowing rates as an indicator of currency rates since they can understand how currency rates are going to move depending on the borrowing rates announced by the CBK. The most current trend is that of the unexpected rise in the value of the Shilling. During this period, we could also observe the high borrowing rates by CBK.

1.2 Statement of the Problem

The fluctuations of currency rates are part of how the market operates and it is highly affected by the demand and supply of foreign exchange at a given period in time however understanding where this demand is created and what other factors trigger the movement of currency rates apart from the basic market function is of high importance to a true investor. One of those factors is the borrowing rates which as we know is a monetary instrument of the government to control inflation while doing so it also affects the currency rates and there has not been much emphasis on how borrowing rates affect currency rates even though it is of high importance. According to Ntirabampa D (2019), the application of the fixed-effects model shows that 98.8% of the variation in currency rates is derived from three independent variables whereby the dominant variable was borrowing rate differential which had a correlation coefficient of 0.0274 indicating that an

increase of one point in borrowing rate differential in the East African Community would lead to a depreciation of the home currency by 0.0274 points.

Stephen (2014) carried out similar research on the understanding of “the effect of borrowing rate differential on the foreign currency rate in the East African forex market”, his research found that borrowing rate differential led to a less than 10% of change in the Real Exchange Rate (RER) which is not significant enough to prove any significant relationship between real borrowing rate and real currency rate.

At the start of 2024, the Kenya Shilling began appreciating at a very high rate against other currencies and at the same time, the borrowing rates were at their highest since 2013 indicating that there could be a potential relationship between the two. However, there is barely any evidence to back the connection between borrowing rates and currency rates. The fluctuation of currency rates could be affected by the market demand however there could be underlying factors affecting it which could be affecting the Interest rates indirectly compared to demand.

An empirical gap exists in understanding the connection between borrowing rates and currency rates, whereby there is lack of evidence regarding the connection between borrowing rates and currency rates.

The link between borrowing rate and currency rate can be used to understand the unexpected appreciation of the Kenyan shillings at the start of 2024 and it would enable investors to use this relationship as a factor when making decisions regarding foreign exchange. the unexpected appreciation of the Kenyan shillings was a major turn of events for investors as it involved increased market transactions of foreign currency at that time.

1.3 Research Objectives

One of the specific research objectives is to identify the importance of the understanding of the relationship between borrowing rates and currency rates when making decisions regarding foreign exchange. This knowledge will allow policymakers to take into consideration the variables being affected by changes in interest rate policies. The research also aims to understand the extent of the effect of borrowing rates on currency rates and whether this relationship is direct or indirect.

Another objective of the study is to understand the difference between the short-term and long-term impact of borrowing rate on currency rate.

Furthermore, the research aims to provide clarification regarding the movement in currency rates caused by borrowing rates.

Lastly, the research is aimed at increasing the knowledge regarding the unexpected appreciation of the Kenyan Shillings at the start of 2024.

1.4 Significance of the Research

The research will enable investors to make more informed decisions as their decisions would not only be based on the predictions of currency rates changes as a result of demand and supply but also based on the borrowing rates.

Investors would be able to gain higher returns by understanding the best time to invest in a certain currency as they would be able to predict the short-term significant impacts on currency rates as a result of borrowing rates such that investors may be able to use the borrowing rates as a way to forecast currency rates in the short term as the borrowing rate plays a significant part in a country's economy and currency rates are affected by the performance of a country's economy.

Not only will investors be able to use this study to make more informed decisions but according to Kariuki (2015) the knowledge based on the connection between borrowing rate and currency rates can also be used policymakers at CBK where they can use this study as a guide when ascertaining different policies which can manage currency rates and promote growth and increase profitability of the Kenyan economy.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

The chapter examines the underlying theories anchoring the study. The key theories of currency rates include the Purchasing Power Parity, which was developed by Gustav Cassel in 1916. Interest Rate Parity theory that was developed by popularized by John Maynard Keynes in 1923. International Fisher Effect which was developed by Irving Fisher in the 1930's. Balance of Payment Theory of Exchange which became popular in the 1930's. It also captures the empirical review, theoretical framework and the research gaps from previous research.

2.1.1 Interest Rate Parity

The theory of Interest Rate Parity (IRP) suggests that the borrowing rate differentials for two countries are equal to the differential between the forward currency rate and the spot currency rate. The theory suggests that an investor should gain the same amount of return on a risk-adjusted investment in two different countries after having taken into account the currency rates. It basically links forward currency rate, spot rate and nominal borrowing rates. As supported by Kariuki (2015), the theory is relevant in apprehending the connection between currency rates and borrowing rates. According to the IRP theory, a country's domestic borrowing rate should be equal to the borrowing rate of the foreign country plus any speculated change in currency rate. Hence the borrowing rate differential for the two countries would be the same as the differential between the spot rate and the forward rate. The theory however has some weaknesses as it assumes that both the domestic and the foreign markets are efficient in terms of capital mobility. Additionally, the theory also assumes that the assets in the domestic and foreign markets are perfect substitutes of each other. These assumptions therefore force policymakers and investors to use other theories when making decisions

2.1.2 Purchasing power parity

The theory of Purchasing Power Parity (PPP) according to Gustav Cassel is a theory that states that if barriers, transaction and transport costs are eliminated then the price of a commodity should be the same in two different countries implying that the goods would cost the same after having exchanged the currency. The theory assumes that costs such as transportation, tariffs and export quotas are not incurred when trading goods which are assumptions that seem impractical in the real world where such expenses cannot be avoided. To avoid these necessary costs, PPP considers an equilibrium market whereby both the foreign market and the domestic market are integrated into a single market. Dornbusch (1985) carried out research that concluded that PPP can give important insights to policymakers when making monetary policies as it is used as a model to predict future currency rates.

2.1.3 International Fisher Effect (IFE)

The International Fisher Effect which was developed by Irving Fisher in the 1930's states that the nominal borrowing rates of a country would reflect the expected changes in the spot currency rate between two countries' currencies. This signifies that the real borrowing rate for two different countries could be equal due to the arbitrage opportunities existing. According to the Corporate Finance Institute "IFE states that the difference between the nominal borrowing rates in two countries is directly proportional to the changes in the currency rate of their currencies at any given time". According to Irvin Fisher, the annual percentage rate of two countries can be used to predict their currency rates. "IFE theory also suggests that the spot rate changes between two different countries tend to be equivalent to their nominal borrowing rates differences" (Ebiringa & Anyaogu, 2014).

The IFE theory claims that the future spot rate of the foreign currency would be different from the current spot rate by the proportion of difference of amount that would equal the nominal borrowing rate differential percentage between the domestic country and the foreign country. A currency with a low nominal borrowing rate is expected to appreciate against the currency of a country whose nominal borrowing rate is higher.

2.1.4 Balance of Payment Theory

The Balance of Payment Theory was developed by Kreuger in 1969 and it is also known as General Equilibrium Theory of Exchange Rate. Based on the theory the currency rate of a given foreign currency is determined using the balance of payment in aspects of the demand and supply of foreign exchange in the exchange market according to Kariuki (2015) “any surplus or deficit realized in the balance of payments results in changes in the demand or in the supply of foreign exchange leading to fluctuations in the foreign currency rate”. A favorable balance of payment of a country usually leads to an increased currency rate for that country’s currency against other currencies and an unfavorable balance of payment of a country results in a decrease in the rate of foreign exchange. The theory however is based on the assumption of a completely integrated world market. Additionally, it also assumes that the spread of information takes a very long time which is not the case with the advancement in communication and internet technology which allows for real-time information sharing in the world market.

2.2 Empirical Literature Review

Kariuki (2015) research was based on analyzing “the relationship between real borrowing rates and real currency rates in Kenya”. The paper talked about the importance of ascertaining the connection between borrowing rate and currency rates and by focusing on this relationship the paper also gave useful insights on the economics of the Kenyan economy. The research observed an upward trend of both the borrowing rates and currency rates from the year 2008 to 2013 however, the relationship between the two variables was unknown and the paper suggests further research to be done on this particular gap to determine the relationship between borrowing rates and currency rates. The paper also used data from different sources over a period of six years which provided a great basis for conclusions. The paper, however, still calls for further research to be done on the other factors that could influence the movement in borrowing rates and currency rates as they could improve the apprehension on the relationship between borrowing rates and currency rates.

The Turkish paper “Impact of Short-term Interest Rate on Exchange Rate: The Case of Turkey” by Taha Bahadır Saraç and Kadir Karagöz analyzes the relationship between borrowing rates and currency rates in Turkey which is also a developing country just like Kenya. The study aimed to determine whether higher borrowing rates cause a depreciation of the domestic currency. The findings of the study did not find any evidence to back this up as it could not prove that an increase in borrowing rates lead to a decrease in currency rates. The study has a few gaps on which further research can be conducted whereby, similar to Kariuki (2015) this paper as well does not analyze the external factors or the global economic conditions that affect the relationship between currency rates and borrowing rates hence further research can be based on this aspect.

Ntirabampa’s (2019) paper on “The Effect of Interest Rate Differentials on Exchange Rate Volatility of East African Community Currencies” suggests that borrowing rate differentials hold a significant position in influencing currency rate volatility. The study looked at three different variables i.e. borrowing rate differentials, inflation differentials and relative currency account balances and from those three borrowing rates tend to have a greater impact on currency rates compared to the other two. The study also promotes further research using to analyze additional factors affecting currency rates such as income levels, government control, employment rates, corruption index, tax rates, political stability and market speculation. The study does contain a few research gaps of which one of them is the assumption that there are no arbitrage opportunities in the foreign exchange market which is not true as arbitrage opportunities do exist in real life and by making this assumption the dynamics of the foreign exchange market are overly simplified. Moreover, the study only takes into consideration three variables that affect currency rates that is borrowing rates differentials, inflation differentials and relative current account balances which are not the only factors affecting currency rate volatility.

“Effect of inflation and borrowing rates on foreign currency rates in Kenya” by Muchiri M. (2017) aimed to identify the effect of borrowing rates and inflation on currency rates using a descriptive research design and some past historical data from 2007-2016. The study found a significant direct positive relation between inflation and currency rates indicating that an increase in inflation rate would lead to an increase in currency rates.

However, borrowing rates on the other hand did not have a significant effect on foreign currency rates although it did recommend policy makers to ensure that borrowing rates do not lead to an adverse effect on other macroeconomic factors that could potentially affect currency rates. this indicates that borrowing rates may have an indirect effect on currency rates.

Ebiringa & Anyaogu (2014) in their paper “Exchange Rate, Inflation and Interest Rates Relationships: An Autoregressive Distributed Lag Analysis” used the Autoregressive Distributed Lag (ARDL) model to understand the relationship between borrowing rates, inflation and currency rates in Sub-Saharan Nigerian for the period from 1970-2010. The paper focuses on various independent variables such as consumer Price Index (CPI), borrowing rates, consumption, trade and others. The ARDL model indicated a significant relationship between these variables which affected both the short term and long-term currency rate volatility. The paper does guide on further research due to the presence of a research gap created by limited scope as it only focused on Sub-Saharan Nigeria and further research could focus on cross-country comparison.

Mbaya C. (2013) found in her study regarding the “Effect of Interest Rates in Stabilizing Foreign Exchange Rate in the Kenyan Economy” that borrowing rates do in fact have a positive relationship with currency rates such that if borrowing rates in an economy rise, the currency rate of that economy’s currency is also likely to rise leading to stronger and appreciating currency as a result of foreign investments being attracted into the economy. This paper however was not able to capture the long-term implications of borrowing rates on currency rates and therefore emphasis has been put to guide further research to be based on determining the long-term effect of borrowing rates on currency rates.

A study conducted by Ahmed H. and Mazlan N. in 2021 which discussed “The Impact of Interest Rate on Exchange Rate Within ASEAN Countries: Evidence from Linear and Nonlinear ARDL Frameworks” found that from all the ASEAN countries under observation, changes in borrowing rates have short-term symmetric effects on currency rates and that this impact also was seen in the long-term for five of the ASEAN countries. For seven other countries, changes in borrowing rates had negative effects on currency rates both in the short term and long term. The study however only focuses on the direct

implications of borrowing rates on currency rates which overlooks the external factors affecting currency rates and hence future research could include these external factors to improve the understanding of the changes in currency rates and determine and indirect relationship between borrowing rates and currency rates.

2.3 Overview of the Literature Review

Having reviewed the literature on the relationship between borrowing rates and currency rates, there seems to be a major research gap which is the lack of research on other variables when determining the relationship between borrowing rates and currency rates in Kenya. Most of the researchers have guided to research on this gap to increase the knowledge on the relationship between borrowing rates and currency rates.

This paper seeks to analyze the different factors in order to increase the understanding on the relationship between borrowing rates and currency rates as both variables are crucial to the economy of Kenya and are taken into consideration by policymakers and investors when making decisions.

According to Hakkio (1986) nominal borrowing rates and the dollar are negatively correlated during the 1970's with the view that inflation shocks dominated borrowing rate and currency rate movements. However, when the changes in the real borrowing rate are the dominant influence over nominal borrowing rates and USD then a positive relationship can be identified between borrowing rate and currency rates.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

The research adopted for this study is a correlational research design which is used to determine the link between two variables of a study. In this study, the correlational research design aims to identify the link around borrowing rates and currency rates in Kenya. It is common that there could be more factors affecting a dependent variable and therefore it is difficult to understand whether a change in the dependent variable is caused by a change in one independent variable or a combination of others. According to Chee J (2013) “the Pearson’s r measures the relationship in a linear form between two variables. “ r ” can have a value ranging from -1 and 1 where -1 indicates a perfect negative relationship and 1 indicates a perfect positive relationship”. A correlational research design was adopted as since only borrowing rates and currency rates are under study and other factors such as inflation cannot be directly controlled by the government unlike borrowing rates where it has complete control over the borrowing rates. The correlational research design will enable the research to determine the connection between borrowing rates and currency rates.

3.2 Data

The research was primarily based on secondary data which as per Serra et al. (2018) includes data that was gathered previously by other researchers and other institutes and can be used to answer new questions and not for the questions it was originally gathered for. The primary aim of the research was to study the link between borrowing rates and currency rates and therefore secondary data proved more useful as it allowed the study to understand the trend over time between the movement between the two variables in Kenya. This trend can only be observed using historical data and since historical data is data that has been collected before be it for a different purpose or the same, can therefore be considered secondary data. The secondary data will consist of quantitative information regarding both variables in Kenya. The secondary data will be derived from the Central Bank of Kenya (CBK) website to determine the borrowing rate movements over the period under examination and the currency rate information for the five years under review was

also collected from the CBK website. Lastly, the data on Gross domestic product (GDP), borrowing rates and inflation rates were derived from the Kenya National Bureau of Statistics (KNBS). Some of the secondary data was also obtained from IMF and World Bank websites.

3.3 Data Analysis

Data analysis can be described as a systematic process that uses different techniques and tools to investigate information to solve a specific research question. a regression model was adopted to determine and understand the link between the variables. Similarly to Kariuki (2015) a correlation model was applied to establish the strength of the link between borrowing rates and currency rates. The data derived from this model would be passed through a scatter plot with a prediction equation signifying the line of best fit for variables. The strength of the relationship will be derived from how close the points are to the prediction equation as it will guide on the strength. If the data points are scattered far from the prediction equation, then the link between the variables is considered weak however if the data is scattered closer to the prediction equation or the regression line then the link between borrowing rates and currency rates can be classified as a strong relationship.

3.4 Statement of Hypothesis

Kariuki (2015) used a hypothesis statement to test whether or not a link between borrowing rates and currency rates exists.

Null hypothesis (Ho): Interest rates have no impact on currency rates.

Alternative hypothesis (H1): Interest rates have an impact on currency rates.

To test this hypothesis Kariku (2015) used a test for significance to understand whether a link between borrowing rates and currency rates occurred by chance or it actually exists.

3.5 ARDL Model

Autoregressive Distributed Lag model was used in this paper to determine both the short term and the long-term impacts of borrowing rates on currency rates. According to Shrestha and Bhatta (2018), the ARDL model allows the study analysis to capture both the short-term and long-term relationship between the separate variables hence making it the most ideal model for this paper. According to Shrestha and Bhatta (2018), the ARDL model is based on the Ordinary Least Square (OLS) method. An Error Correction Model (ECM) was derived from the ARDL model to allow the study to capture both the short-run and long-run implications of borrowing rates on currency rates without missing the long-run information. The ECM model also allows the study to avoid encountering false relationship which could arise from non-stationary time series data.

The following ARDL model was used:

$$y_t = \alpha + \beta x_t + \delta z_t + \varepsilon_t$$

The ECM version of the model is as follows:

$$\Delta y_t = \alpha_0 + \sum_{i=1}^p \beta \Delta y_{t-i} + \sum_{i=1}^p \delta \Delta x_{t-i} + \sum_{i=1}^p \varepsilon \Delta z_{t-i} + \lambda_1 y_{t-1} + \lambda_2 x_{t-1} + \lambda_3 z_{t-1} + u_t$$

The first part of the formula represents the short-term impact of borrowing rates on currency rates and the second part of the model represented by lambda (λ) represents the long-term impact of borrowing rates on currency rates. This model was adopted as it allowed the study to cover both the short-term and the long-term impact.

RESULTS AND ANALYSIS

The data analysis primarily focused on borrowing rates and currency rates and also included variables such as GDP and inflation. Out of these variables borrowing rate, currency rate and inflation is considered to be time series data. Time series data as per Shrestha and Bhatta (2018) “is a sequence of observations of the defined variable at a uniform interval over a period of time in successive order”. Interest rate, inflation and currency rate can be observed at a uniform time interval over a period of time hence allowing them to be classified as time series data.

4.2 Pre-estimation tests

Augmented Dickey-Fuller test for unit root

H_0 : Random walk without drift, $d = 0$

MacKinnon approximate p -value for $Z(t) = 0.0000$.

```
. dfuller d_USKshs, lags(1)
```

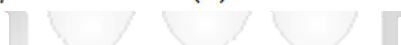
Augmented Dickey-Fuller test for unit root

Variable: **d_USKshs** Number of obs = **513**
 Number of lags = **1**

H0: Random walk without drift, $d = 0$

	Test statistic	Dickey-Fuller critical value		
		1%	5%	10%
Z(t)	-15.107	-3.430	-2.860	-2.570

Mackinnon approximate p -value for Z(t) = **0.0000**.



```
.  
. dfuller d_Inflation, lags(1)
```

Augmented Dickey-Fuller test for unit root

Variable: **d_Inflation** Number of obs = **513**
 Number of lags = **1**

H0: Random walk without drift, $d = 0$

	Test statistic	Dickey-Fuller critical value		
		1%	5%	10%
Z(t)	-12.901	-3.430	-2.860	-2.570

Mackinnon approximate p -value for Z(t) = **0.0000**.

Pre-estimation tests for the data analysis included a stationarity test which as per Shrestha and Bhatta (2018) is necessary when using an ARDL model or an error correction model. Before the stationarity tests was carried out, the data collected regarding borrowing rates, currency rates, inflation and GDP from the Central Bank of Kenya website had to be merged together into one file before being uploaded to Stata where the data was then cleaned to eliminate any erroneous. The date format had to be changed to match the format that was compatible with Stata. Once the data had been cleaned, the variables had to pass

the unit root test to determine the non-stationarity of the data which was carried out using the Augmented Dickey-Fuller test. Each of the variables got a MacKinnon approximate p-value for $Z(t)$ to be zero indicating that the variables were non-stationary. GDP had to be dropped from the study due to its stationary nature as it does not fluctuate regularly and is constant for one year hence making it stationary and leading to it being dropped from the study for the purpose of achieving the studies objectives. Non-stationary time series data according to Shrestha and Bhatta (2018) is when the time series data does not return to it's long-term average which is the case for most macroeconomic variables.

After the Stationarity test, the next step was to choose an appropriate model for the time series data analysis, with the data being non-stationary, an ARDL model was applied together with an Error Correction Model to determine both the short-run correlation and the long-run correlation of the variables.

4.3 ARDL Model

```
. ardl USKshs Interestrate Inflation, maxlag(1 1 1)
```

ARDL(1,0,0) regression

Sample: **04jan2019** thru **27sep2024**, but with gaps

Number of obs = **804**
 F(3, 800) = **420901.99**
 Prob > F = **0.0000**
 R-squared = **0.9994**
 Adj R-squared = **0.9994**
 Root MSE = **0.3918**

Log likelihood = **-385.43875**

USKshs	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
USKshs L1.	.9937556	.0026182	379.55	0.000	.9886162	.998895
Interestrate	-.0008715	.0078396	-0.11	0.912	-.0162602	.0145172
Inflation	.0961494	.021645	4.44	0.000	.0536616	.1386372
_cons	.1448547	.1765818	0.82	0.412	-.2017636	.4914729

The above ARDL model analyzed the relationship between borrowing rates, inflation and currency rates from January 2019 to September 2024, the coefficient column of the ARDL model shows the correlation coefficient between the variables with USD/Kes being the dependent variable. The interest rate in the short run has a negative correlation with currency rates as it has a correlation coefficient of -0.0008715. This indicates that borrowing rates in the short-run have a very weak negative impact on currency rates in the short-run. Inflation on the other hand has a positive correlation coefficient of 0.0961494 indicating that inflation has a weak positive impact on currency rates in the short-run.

4.4 Error Correction Model (ECM)

D.i_USKshs	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
ADJ						
USKshs						
Li.	-0.0027969	0.0009317	-3.00	0.003	-0.0046241	-0.00097
LR						
Interest rate	0.7033075	0.8185866	0.86	0.390	-0.902025	2.30864
Inflation	12.58513	2.640559	4.77	0.000	7.406724	17.76354
SR						
USKshs						
LD.	0.4939099	0.021756	22.70	0.000	0.4512441	0.5365757
L2D.	-0.0669564	0.0242535	-2.76	0.006	-0.11452	-0.019393
L3D.	0.0982181	0.0217581	4.51	0.000	0.0555483	0.1408878
_cons	0.1022202	0.0622597	1.64	0.101	-0.0198776	0.224318

The results from the ECM model using Stata provided with both the long-run correlation coefficient. The long-run relationship between borrowing rates and currency rates is given

by the LR section of the ECM model. The long-run correlation coefficient between borrowing rates and currency rates was 0.7033 indicating that a change of factor one in borrowing rates would lead to a positive change of factor 0.7033 in currency rates in the long-run which means that borrowing rates have a small positive impact on currency rates in the long-run.

Inflation on the other hand had a correlation coefficient of 12.5851 indicating that a change in inflation by a factor of 1 would lead to a positive change in currency rates by 12.5851 in the long-run. This means that in the long-run inflation has a greater positive impact on currency rates in Kenya compared to Interest rates. This suggests that controlling inflation rates can be one of that ways to manage the exchange rate fluctuations.

The research aimed to find whether the alternative hypothesis laid out is true or not. Having done the analysis, the research can confirm that borrowing rates do in fact have an impact on currency rates as shown by the correlation coefficient in the ARDL model and the ECM. The ARDL model proves that borrowing rates do have a negative impact on currency rates however weak in the short-run. In the long-run the ECM proves that borrowing rates have a positive relationship with currency rates hence confirming our hypothesis both in the short-run and the long-run as the research aimed to find out.

Furthermore, the study also aimed to identify the importance of the relationship between borrowing rates and currency rates. Based on the results found during data analytics, borrowing rate data in relation to exchange is important in the long-run and when making decisions regarding the long-run as it has a far greater impact during the long-run compared to the impact during the short-run which is significantly lower hence indicating that there could be other factors that have substantial impact on currency rates in the short-run.

The study also aimed to find the difference between the short-run and the long-run impact of borrowing rates on currency rates. The results of the analysis using the ARDL model suggests that the impact of borrowing rates on currency rates varies from short-run to long-run. In the short-run as suggested by the ARDL model, interest tends to have a significantly weak negative impact on currency rates indicating that a change in borrowing rates in the short-run will lead to a significantly smaller change in currency rates of the

opposite nature. On the long-run however, borrowing rates, as suggested by ECM, tend to have a much greater impact on currency rates and also the nature of the impact has changed in the long-run unlike the negative relationship present in the short-run, the long-run tends to show a positive relationship between borrowing rates and currency rates. This positive relationship between borrowing rates and currency rates in the long-run aligns with the findings of Saraç and Karagöz (2016) who were unable to find any evidence of a negative relationship between borrowing rates and currency rates since their study could not find any evidence that borrowing rates lead to the weakening of currency rate.



CHAPTER FIVE

CONCLUSION

The paper aimed to find the short-term and long-term impact of borrowing rates on currency rates in Kenya. The study made use of secondary data on borrowing rates, currency rates, inflation and GDP. The data on the variables from January 2019 to September 2024 was collected from the Central Bank of Kenya. For borrowing rates, the Central Bank rate was used, for inflation the average annual inflation rate was used, for currency rates the daily average price was used and lastly, the annual GDP rates were used in the study.

The ARDL model along with the ECM version of the model were applied to this study to determine the weight of the impact that borrowing rates had on currency rates. Four variables were initially set out to be analyzed using the ARDL model which included; borrowing rates, currency rates, inflation and Gross Domestic Product (GDP). However, during analysis GDP was dropped as it did not possess a non-stationary characteristic which was a requirement of the ARDL model. The results from the ARDL found that borrowing rates in the short-run have a weak negative correlation with currency rates with a correlation coefficient of -0.0008715 . This indicates that borrowing rates do not have a significant impact on currency rates in order to strongly influence them. On the other hand, inflation and borrowing rates were found to have a positive relationship with a correlation coefficient of 0.0961494 . This indicates that inflation has a greater impact on currency rates as compared to borrowing rates the short-run analysis allows the study to conclude that the significantly high currency rates of the USD/Kes at the start of 2024 were not as a result of borrowing rates but rather other factors affecting borrowing rates.

The ECM version of the ARDL model suggested that in the long-run, borrowing rates and currency rates were found to have positive correlation coefficient of 0.7033075 which indicates that borrowing rates have a comparably greater impact on currency rates in the long-run compared to the short-run. The ECM version of the ARDL model found that inflation on the other hand, had a much greater correlation coefficient of 12.58513 which

indicates that inflation greatly impacts currency rates compared to borrowing rates. However as per what the study aimed to find on the impact of borrowing rates on currency rates, it certainly was able to achieve that as it not only found that there exists a relationship between borrowing rates and currency rates but also found the extent to which the former impacts the latter.

5.1 Recommendations to policy makers and investors

Based on the findings of the paper a few suggestions can be made to both policymakers and to investors working with foreign exchange. To the investors it can be recommended that in the long-run they take borrowing rates as a factor when making investment decisions on foreign exchange investments such as Dollar investment as changes in borrowing rates of a country can allow them to understand how their investments will be affected. They can also use information on borrowing rates changes in the country to determine the trend of borrowing rates over the long-run which will help them use that trend as a forecasting tool on their investments.

To the policymakers, borrowing rates decisions should be made with the concept in mind that they could affect the currency rates in the long-run and therefore try to avoid any significant changes that would affect the long-run.

5.2 Limitations of the Study

One of the limitations of the study was the need to eliminate GDP from the variables under observation due to its stationarity nature. This elimination of GDP led to the restriction of the different factors affecting currency rates as this research tried to work with different variables as suggested by the papers reviewed in the literature review section of the paper. Another limitation faced during the study was the reduced data on borrowing rates, currency rates and inflation after data cleaning which eliminated a small proportion of the data available for the years under study. The last limitation of the study was the lack of evidence found to support that borrowing rates can be used to predict currency rates in the short-run.

5.3 Areas of further study

The development of Kenya and other East African Countries in the recent years has attracted several multinational companies to expand their operations in these countries and with these Foreign Direct Investments (FDI) increasing in these countries. The volume of foreign exchange transactions is likely to increase significantly and therefore future studies can be based around how the volume of transactions in foreign exchange is likely to affect currency rates in different East African Countries.

Some other areas to focus on could be on the other factors that affect currency rates and which external factor tends to have the greatest impact on currency rates. By focusing future research on the other factors, it will become clear as to how different factors affect currency rates.



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