ABSTRACT

The role of the exchange rate channel in the transmission of monetary policy has become more important due to globalization and the widespread use of floating exchange rate systems. Exchange rates are widely utilized by governments across the globe as a pivotal monetary policy instrument to exert influence over diverse economic and financial issues. It is of utmost importance to comprehend the factors and procedures that determine and regulate exchange rates. Nevertheless, numerous emerging economies, such as Kenya, face difficulties in achieving stability in their currency exchange rates. Forecasting future exchange rates is a difficult task for policymakers due to the intricate interaction of macroeconomic, speculative, and economic anticipation elements. This study aims to fill the lack of extensive research on the economic factors that influence the fluctuation of currency rates in Kenya. The study seeks to give valuable insights for policymakers, investors, and market participants by analyzing the effects of foreign direct investment, inflation rates, and the balance of payments on exchange rates. The study explores the complex dynamics of exchange rate fluctuations by using a quantitative research strategy and applying techniques such as Vector Autoregression (VAR) model analysis, Granger causality testing, and regression analysis. The results demonstrate notable associations between exchange rates and macroeconomic variables, providing insight into the factors that contribute to fluctuations in the exchange rate in Kenya. This study enhances the current body of knowledge by giving a detailed comprehension of the factors that influence exchange rates. It also offers significant perspectives for policymakers and stakeholders in effectively managing exchange rate risks and promoting economic stability.

Keywords: Economic Determinants, Foreign Direct Investment, Inflation Rates, Balance of Payments, Exchange Rate Volatility.

APA CITATION:

1.0 INTRODUCTION

1.1 Background of the Study

The exchange rate channel of the monetary transmission mechanism has gained prominence due to growing globalization and the widespread use of the floating exchange rate system (Robbani, 2024). As one of the important monetary policy tools that is used by governments around the world to influence various economic and financial factors its determination and control is significant. Based on various studies both developed and developing economies always take a keen interest in controlling or influencing its exchange rate either through managed or flexible based on the ultimate aim of the given country (Chemngorem & Njeru, 2023). Besides, the rising internationalization of different economies and the consequent adoption of floating exchange regimes have made the different countries more focused and concerned about having control over their exchange rates by influencing various macroeconomic factors. In sustainable and emerging economies, the very important thing that affects the exchange rate the most is the purpose of the usage that is the exchange rate manipulation process (Simpson, 2022). The anchoring of exchange rates to the global financial arena has elicited the interest of researchers. According to Kemboi, & Kosgei, (2018), many developing countries have demonstrated a lack of commitment to adequately maintain the balance of their exchange rates. Kamande, (2017) observe
that more and more researchers pay much attention to the estimation of interest rates given the impossibility of forecasting future exchange rates Khalid, Waqar, Civcir, Irfan, & Özdeşer, Hüseyin (2024). In his view, economic and real exchange rate disparities are attributable to internal and external regulations as well as circumstances that have not been eradicated. Ndlovu, & Bhebhe, (2023). noted that exchange rate reflects a country’s competitiveness on the international market and its ability to manage cross border transactions. Since the volume of trade depends on the foreign market, it is necessary to consider the factors influencing the exchange rate of the foreign market, as well as the actions of the foreign market. Many scholars and policymakers have regarded the prediction of exchange rates as highly valuable, mainly due to the need to understand the relationship between exchange rates and exports. Musembi (2018) posited that currency rates are the most watched, analyzed and regulated facets of the economy by the government.

Kamande, (2017) opined that macroeconomic, speculative and economic expectation influences a nation’s currency rate. Nonetheless, investigating the actual exchange rates of Teh and Shanmugaratnam (2021) found the degree of differences in this regard. The findings of the analysis indicate that the real exchange rate declined primarily due to the terms of trade and government consumption. Kenya’s currency rate policy has been under so many regimes in its history. On the other hand, the main forces behind this kind of real exchange rate were the increase in the investment share, expansion of the real GDP, accumulation of reserves in the central bank and imposition of trade barriers. After the succession of currency devaluations, the dollar peg on the exchange rate, which was in place up to 1974 was substituted by the International Monetary Fund’s Special Drawing Right. Fluctuations in the exchange rate between the US dollar and the shilling has been characterized by high volatility especially right after the implementation of a free-floating exchange rate system. Inflation has been well managed in Kenya due to deregulation of the foreign exchange market.

1.2 Statement of the Problem

The fluctuation in exchange rates is a crucial concern that has adverse consequences for the economic performance and growth of numerous nations. Kenya has undergone substantial swings in its exchange rates. The currency rate increased from 101.30 KES/USD in January 2018 to 144.50 KES/USD in July 2023. This increase has an adverse effect on the economy as it leads to an elevation in inflation and a reduction in purchasing power. In addition to that, the exchange rate has a significant impact on a country's economy. The relative pricing and volatility of different currencies have a considerable impact on international trade, the balance of payments, and the overall economic performance of a country. However, the exchange rate between the Kenyan shilling and the US dollar has been volatile. As of July 2022, the value of the Kenyan shilling has increased to 118 units from a low of 110 units in December 2020. Despite numerous attempts by Kenya's Central Bank to employ various monetary policies in order to enhance the value of the Kenyan shilling compared to the US dollar (Laiboni and Sang, 2021), this statement remains correct. Nevertheless, numerous growing economies such as Kenya and other nations in East Africa have had challenges in managing the equilibrium of their exchange rates. Policy makers face challenges in accurately predicting future exchange rates for their countries, despite the implementation of diverse economic policies by different government departments, such as fiscal and monetary policy. According to Muchiri (2017), policies that result in a continuous mismatch between the real exchange rate and macroeconomic equilibrium also boost the real rate of exchange, which is determined by internal factors and influenced by external factors. Moreover, the issue at hand pertains to the insufficient and thorough investigation and examination of the economic determinant that causes fluctuations in the currency rate in Kenya. Although earlier research have partially examined the subject, there is a substantial knowledge gap on the precise elements that contribute to exchange rate volatility in the Kenyan context. The lack of
understanding in this area prevents policymakers, investors, and market participants from making well-informed decisions and taking the necessary steps to effectively manage and reduce the risks associated with exchange rates. Kenya has seen significant adverse effects due to internal disruptions, including deteriorating terms of trade, sporadic oil price fluctuations, and unpredictable capital flows. These factors have posed challenges in effectively managing macroeconomic policies, as noted by Musarat et al. (2021). Given the immense importance of exchange rates in an economy, a thorough comprehension of the behaviour of foreign currency rates is necessary. As a result, previous research also explored other factors, such Bomin, L. (2019), who investigated the impact of currency rate fluctuations on Kenya. The primary variables examined in the analysis, conducted from 1995 to 2014, included the interest rate, inflation rate, balance of payments, and terms of trade. The primary aim of the study was to identify the macroeconomic factors that influence the exchange rate of Kenya. This article is based on current research, which highlights the importance of answering the research question: "What are the impacts of specific macroeconomic factors on exchange rates in Kenya?"

1.3 Objective of the Study
To establish how economic determinants affect exchange rates volatility in Kenya.

1.3.1 Specific Objectives
i. To determine the impact of foreign direct investment on Kenyan exchange rates.
ii. To determine the effect of inflation rates on Kenyan exchange rates.
iii. To determine the impact of Kenya's balance of payments on the country's exchange rates.

1.4 Research Hypotheses
i. Kenya's currency rates are not significantly affected by foreign direct investment.
ii. There is very no correlation between inflation and Kenyan exchange rates.
iii. Kenyan exchange rates are not significantly impacted by the balance of payments.

1.5 Justification of the study
Along with local and international investors, prospective investors have also profited from the research by understanding the mechanics behind exchange rate determination and being able to take macroeconomic factors into account when making investment decisions. It will serve as an instrument for the Treasury and the Central Bank of Kenya, two organizations charged with developing policies related to the development, profitability, and growth of the banking industry as well as managing currency rates.

1.6 Scope of the study
The study stealth economic factors on exchange rates in Kenya with key factors on Balance of payment, inflation and inveterate rate and the level of country GDP. The study also covered a period of at least 20 years which is significant given the economic and financial development that have occurred on the same period.

2.0 LITERATURE REVIEW

2.1 Theoretical Review
The literature on exchange rates describes a wide range of methods for computing exchange rates. These concepts include balance of payment theory (BOP), purchasing power parity (PPP), interest rate parity, and the Balassa-Samuelson Model.

In international economics, several theoretical concepts are fundamental to understanding the dynamics of global trade and finance. The balance of payment (BOP) theory examines a country's international transactions and their effects on national income and exchange rates. BOP theory helps in assessing the economic stability and policy effectiveness of a country (Krugman & Obstfeld, 2021).

Purchasing power parity (PPP) posits that in the long run, exchange rates should adjust so that identical goods cost the same across different countries, considering price level differences. This
Interest rate parity (IRP) states that the difference in interest rates between two countries is equal to the differential between the forward and spot exchange rates. This concept is vital for investors engaging in arbitrage and for policymakers in understanding currency fluctuations (Mishkin, 2019).

The Balassa-Samuelson model argues that countries with higher productivity in tradable goods will have higher price levels and real exchange rates. This model explains disparities in price levels and wages across countries with varying levels of economic development (Balassa, 1964; Samuelson, 1964). Together, these theories provide a comprehensive framework for analyzing and predicting international economic trends.

2.2 Conceptual Framework

![Conceptual Framework Diagram]

Independent variables:
- Inflation rate (CPI)
- Foreign Direct Investment (FDI as a Percentage of GDP)
- BOP (Current Account Balance as a percentage of GDP)

Dependent variable:
- Exchange Rates (Kshs/US dollar)

3.0 RESEARCH METHODOLOGY

The research design, as described by Orodho (2004), serves as a guide for collecting, analyzing, and evaluating data. The study utilized a longitudinal research design to assess phenomena or characteristics within a population, providing estimates and examining associations between variables. The population, as defined by Mugenda & Mugenda (2003), includes individuals, objects, or events with similar measurable traits. This study focused on Kenyan economic data from 2006 to 2015 to analyze macroeconomic variables affecting exchange rates. Data collection involved primary and secondary sources, including official bulletins and records from CBK and KNBS. Data analysis employed STATA software for descriptive, correlation, and VECM analyses, with a multivariate regression model to determine the impact of explanatory variables on exchange rates. Diagnostic tests for heteroskedasticity, multicollinearity, autocorrelation, and normalcy ensured the reliability of the results (Blumberg, Cooper, & Schindler, 2014).

4.0 FINDINGS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics shown in Table 1 offer valuable information regarding the central tendency and variability of four crucial economic variables: exchange rate, balance of payments (BOP), inflation rate, and foreign direct investment (FDI) across 21 observations. The average currency rate is roughly 88.68 Kenyan Shillings (KES) per United States Dollar (USD), with a
standard deviation of 14.65. This indicates significant swings in the exchange rate, which can range from 67.32 to 117.87 KES/USD. The substantial fluctuation in Kenya's currency value indicates considerable volatility, which has the potential to impact economic stability. The Balance of Payments (BOP) exhibits a mean of -4.75 and a standard deviation of 2.68. The range of values spans from -9.34 to 0.89, indicating a predominantly negative but fluctuating balance. This pattern suggests the presence of economic pressures, such as trade deficits. The average inflation rate is 8.74% with a relatively low variability, indicated by a standard deviation of 2.13. The inflation rate fluctuates between 6.01% and 14.69%, indicating the presence of consistent inflationary forces. FDI exhibits a mean value of 0.89% of GDP, with a standard deviation of 0.86. The range of FDI values spans from 0.11% to 3.09%, indicating significant diversity in investment inflows. The descriptive data align with the findings of Muchiri (2017) and Musarat et al. (2021), highlighting the economic difficulties encountered by Kenya, including the instability of exchange rates and its impact on macroeconomic stability. Bomin (2019) observed that variations in currency exchange rates have a substantial impact on the balance of payments and inflation, consequently altering the overall economic performance. The fluctuation in foreign direct investment (FDI) corresponds with the discoveries made by Laiboni and Sang (2021), suggesting that overseas investment is extremely responsive to economic circumstances and alterations in policies inside emerging economies.

Literature that provides support or evidence for a particular idea or argument. Muchiri (2017) examined the impact of unstable currency rates on macroeconomic imbalances, such as continuous inflation and negative balance of payments (BOP). These imbalances are often worsened by variable exchange rates, resulting in uncertainty and diminished investor confidence. In a similar vein, Musarat et al. (2021) emphasised the difficulties associated with handling macroeconomic policies amidst unpredictable capital flows and external disturbances, a situation that aligns with the significant fluctuations reported in the exchange rate and balance of payments data. Bomin (2019) highlighted the interdependence between exchange rates and other economic variables, such as inflation and balance of payments (BOP), demonstrating how unfavourable exchange rate fluctuations can exacerbate economic instability. Moreover, Laiboni and Sang (2021) emphasised the substantial impact of exchange rate regulations on the influx of foreign direct investment (FDI), highlighting that uneven management of currency rates can discourage foreign investors and consequently impact economic growth. These studies collectively support the descriptive findings, demonstrating the intricate relationship between exchange rate volatility and macroeconomic stability in Kenya.

### Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange Rate</td>
<td>21</td>
<td>88.68178</td>
<td>14.6497</td>
<td>67.31764</td>
<td>117.866</td>
</tr>
<tr>
<td>BOP</td>
<td>21</td>
<td>-4.752384</td>
<td>2.684915</td>
<td>-9.340048</td>
<td>.8884503</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>21</td>
<td>8.741626</td>
<td>2.128375</td>
<td>6.005479</td>
<td>14.68563</td>
</tr>
<tr>
<td>FDI</td>
<td>21</td>
<td>.8939359</td>
<td>.8591153</td>
<td>.1132021</td>
<td>3.094711</td>
</tr>
</tbody>
</table>

### 4.2 Correlation of the Study

The correlation matrix presented in Table 2 offers valuable insights into the interconnections among crucial economic variables, including the exchange rate, balance of payments (BOP), inflation rate, and foreign direct investment (FDI). The exchange rate and balance of payments (BOP) display a moderate negative association (-0.4345), suggesting that a rise in the exchange rate (depreciation of the Kenyan shilling) is associated with a deterioration in the BOP. This is consistent with economic theory, which indicates that a currency that is weaker can worsen trade deficits. The exchange rate and inflation exhibit a moderate positive correlation (0.5214), indicating that an increase in the exchange rate (weakening of the shilling) is linked to higher
inflation. This relationship reflects the pass-through effect, whereby a depreciation of the currency results in higher import prices and subsequently leads to increased inflation. The correlation between the exchange rate and FDI is significantly weak and negative (-0.0348), indicating that there is a little direct effect of exchange rate fluctuations on the influx of foreign investment. The Balance of Payments (BOP) and Foreign Direct Investment (FDI) exhibit a moderate negative correlation (-0.5586), indicating that as BOP conditions worsen (with higher deficits), FDI tends to decrease. This could be attributed to a decline in investor confidence over the stability of the economy. These relationships align with the findings in the literature. For example, Muchiri (2017) examines the negative impacts of fluctuations in exchange rates on trade balances and inflation. Musarat et al. (2021) emphasise that a negative balance of payments (BOP) can discourage foreign direct investment (FDI) by raising economic risks. Laiboni and Sang (2021) also observe that exchange rate volatility can weaken foreign direct investment (FDI) inflows, however the limited link in this instance may indicate the presence of other dominant factors. Bomin (2019) highlights the interdependence of these factors, strengthening the observed associations between exchange rate, inflation, and balance of payments (BOP). Literature that provides assistance, encouragement, or reinforcement. Muchiri (2017) explains that exchange rate volatility can result in economic imbalances, such as trade deficits and inflation. This is seen in the positive relationship between exchange rates and inflation, as well as the negative relationship between exchange rates and balance of payments. Musarat et al. (2021) analyse the influence of external shocks on the balance of payments (BOP) and its consequent impact on investor confidence, confirming the inverse relationship between BOP and foreign direct investment (FDI). Bomin (2019) emphasizes the susceptibility of inflation to changes in currency rates, further supporting the moderate positive relationship established between these factors. According to Laiboni and Sang (2021), exchange rate policies have a substantial impact on foreign direct investment (FDI). However, the limited connection in the data indicates that other factors, such as political stability and economic policies, also have important roles in attracting international investments. These investigations confirm the relationships identified in the data, demonstrating the intricate connections between fluctuations in exchange rates, the stability of the economy, and the movement of investments in Kenya.

**Table 2: Correlation**

<table>
<thead>
<tr>
<th></th>
<th>Exchange rate</th>
<th>BOP</th>
<th>Inflation</th>
<th>FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOP</td>
<td>-0.4345</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>0.5214</td>
<td>0.1225</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>-0.0348</td>
<td>-0.5586</td>
<td>-0.1387</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

**4.3 Diagnostic Test**

**4.3.1 Multicollinearity**

The results of a multicollinearity test for three variables, namely FDI, BOP, and inflation rate, are presented in Table 4. The Variance Inflation Factor (VIF) readings for FDI and BOP are both 1.46, although the inflation rate has a VIF of 1.02. When the VIF values are below 10, it suggests that there is no substantial problem of multicollinearity among the predictors. All variables in this scenario have VIF values far below the threshold, indicating that there is very little multicollinearity present in the data. The 1/VIF values, which indicate the tolerance levels, are all nearly equal to 1, providing further confirmation of the absence of multicollinearity. This indicates that each variable makes an individual contribution to the model without producing duplication or exaggeration of standard errors, which can result in inaccurate estimations of coefficients. Literature that provides assistance, encouragement, or reinforcement. Examining multicollinearity in regression analysis is crucial to guarantee robust and dependable outcomes, as substantiated by the literature. Gujarati and Porter (2009) state that multicollinearity can cause an increase in the
variances of parameter estimates, resulting in fewer accurate estimates and making it challenging to discern the impact of each predictor. Kennedy (2008) highlights that a Variance Inflation Factor (VIF) value greater than 10 implies substantial multicollinearity, which can misrepresent the statistical significance of predictors. Within the realm of economic modelling, research conducted by Wooldridge (2015) emphasises the need of low multicollinearity, as indicated by the presented VIF values, in order to gain accurate and distinct understanding of the connections between macroeconomic variables. The lack of multicollinearity in this dataset implies that the connections between FDI, BOP, and inflation can be confidently evaluated, guaranteeing that the influence of each variable on the exchange rate is separate and quantifiable. These findings are consistent with the empirical research conducted by Muchiri (2017) and Bomin (2019), which emphasised the need of using robust regression models that are not affected by multicollinearity in order to effectively represent the changes in economic variables.

Table 3: Multicollinearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>1.46</td>
<td>0.682925</td>
</tr>
<tr>
<td>BOP</td>
<td>1.46</td>
<td>0.685870</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>1.02</td>
<td>0.977825</td>
</tr>
</tbody>
</table>

4.3.2 Autocorrelation Test

4.3.2.1 Vector Autoregressive Model Analysis

Table 4 displays the outcomes of a Vector Autoregression (VAR) model that evaluates the connections between important economic factors from 2003 to 2022, based on 20 observations. The log likelihood value of -54.54068, combined with metrics such as AIC (5.954068), HQIC (6.002663), and SBIC (6.203001), suggest that the model fits well. Smaller values of these criteria generally indicate a model that fits better. The FPE (Final Prediction Error) score of 22.80585 and Det($\Sigma_{ml}$) of 13.68351 are supplementary metrics that assess the model's capacity to make accurate predictions and the level of variability present in the data, respectively. The model parameters indicate an RMSE (Root Mean Squared Error) of 4.27138 and an R-squared value of 0.9347. This suggests that the model can explain about 93.47% of the variability in the dependent variable, indicating a strong match. The chi-squared statistic of 286.1119 with a p-value of 0.0000 indicates that the model's parameters have a high level of statistical significance. Literature that provides support or evidence for a particular topic or argument.

Table 4: VAR model's goodness of fit and the specific equation's parameters and performance

<table>
<thead>
<tr>
<th>Sample</th>
<th>2003 – 2022</th>
<th>No. of Obs</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log likelihood</td>
<td>-54.54068</td>
<td>AIC</td>
<td>5.954068</td>
</tr>
<tr>
<td>FPE</td>
<td>22.80585</td>
<td>HQIC</td>
<td>6.002663</td>
</tr>
<tr>
<td>Parms</td>
<td>RMSE</td>
<td>R-sq</td>
<td>chi2</td>
</tr>
<tr>
<td>5</td>
<td>4.27138</td>
<td>0.9347</td>
<td>286.1119</td>
</tr>
</tbody>
</table>

4.3.2.2 Granger causality test
The Granger causality test is a statistical method used to determine the causal relationship between two time series variables. The table presents the outcomes of the Granger causality test, which reveal the causal connections among the currency rate, inflation rate, foreign direct investment (FDI), and balance of payments (BOP). The chi-squared test statistic and its associated p-values are used to assess the predictive ability of one time series on another. The chi-squared value of the exchange rate is 6.7294, with a p-value of 0.035. This indicates statistical significance at the 5% level, suggesting that the exchange rate has a causal relationship with changes in other variables. The inflation rates exhibit a chi-squared value of 1.9122 and a p-value of 0.384, which is not statistically significant. This suggests that there is no causal association present. The FDI variable has a chi-squared value of 3.1983 and a p-value of 0.202, indicating that there is no statistically significant causal influence. The BOP exhibits a chi-squared value of 11.362 and a p-value of 0.078, indicating a significance level slightly below the 5% threshold. This suggests a possibility of causality that might be further investigated by gathering more data or employing various lag structures.

The outcomes of the Granger causality test are consistent with the conclusions drawn in economic literature addressing the connections between macroeconomic variables. Granger (1969) states that a chi-squared value that is statistically significant suggests that previous values of one variable contain valuable information for predicting future values of another variable. Studies conducted by Muchiri (2017) and Bomin (2019) provide evidence that supports the importance of exchange rate variations in impacting economic indicators such as inflation and trade balances. Enders (2015) found that inflation rates and FDI do not have a significant relationship, indicating that more sophisticated models are needed to accurately represent their dynamic interactions. The little role of BOP implies a complex link that is backed by Lütkepohl (2005), who highlights the significance of taking into account supplementary components and lag structures in causality analysis. The aggregate findings of these research confirm the validity of employing Granger causality tests to comprehend the predicted connections among crucial economic variables. This offers vital information for policymakers who seek to stabilise the economy.

### Table 5: Granger causality test

<table>
<thead>
<tr>
<th>Equation</th>
<th>chi2</th>
<th>DF</th>
<th>Prob &gt; chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate</td>
<td>6.7294</td>
<td>3</td>
<td>0.035</td>
</tr>
<tr>
<td>Inflation rates</td>
<td>1.9122</td>
<td>3</td>
<td>0.384</td>
</tr>
<tr>
<td>FDI</td>
<td>3.1983</td>
<td>3</td>
<td>0.202</td>
</tr>
<tr>
<td>BOP</td>
<td>11.362</td>
<td>3</td>
<td>0.078</td>
</tr>
</tbody>
</table>

#### 4.3.2.3 Regression Analysis

Table 6 reveals the outcomes of a regression analysis that investigates the connections between the logarithms of balance of payments (Log BOP), inflation rate (Log Inflation), foreign direct investment (Log FDI), and an unspecified dependent variable, which is probably associated with economic performance or exchange rates. The regression analysis shows that the coefficient for Log BOP is -1.289888, with a standard error of 0.4592004. The p-value of 0.005 indicates that the relationship between an increase in BOP (deficit) and a drop in the dependent variable is statistically significant. The Log Inflation coefficient is 0.8689065, with a standard error of 0.4899333 and a p-value of 0.016. This indicates a positive but marginally significant correlation between inflation and the dependent variable. The Log FDI coefficient is -2.040298, with a standard error of 1.225361 and a p-value of 0.006. This indicates a statistically significant negative connection. The constant word lacks significance. The 95% confidence intervals for the coefficients offer more accuracy for these estimates, affirming the significance of the correlations for BOP and FDI, and indicating a slight level of relevance for inflation. Literature that provides assistance, encouragement, or reinforcement. The regression results are consistent with the findings in previous literature about the influence of macroeconomic variables on economic performance. Muchiri (2017) and Bomin (2019) examine the adverse impact of BOP deficits on economic stability, as indicated by the substantial negative coefficient for Log BOP. The coefficient for Log Inflation is positive, indicating a correlation with previous research conducted by Musarat et al. (2021). These studies suggest that moderate inflation can increase economic...
activity, but greater inflation rates tend to have negative consequences. Laiboni and Sang (2021) provide evidence supporting a strong inverse correlation between Log FDI and the dependent variable. They highlight the influence of macroeconomic instability on FDI, indicating that foreign investment can be discouraged by high levels of volatility or negative economic indicators. These findings emphasise the significance of effectively controlling the balance of payments (BOP) and inflation in order to promote a favourable environment for investment and maintain stability in economic performance. In addition, Lütkepohl (2005) emphasizes the importance of employing logarithmic transformations in regression analysis to enhance the accuracy of interpreting elasticities and connections. This is demonstrated by the important findings of the present investigation.

<table>
<thead>
<tr>
<th>Table 1: Regression Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coef.</strong></td>
</tr>
<tr>
<td>Log BOP</td>
</tr>
<tr>
<td>Log Inflation</td>
</tr>
<tr>
<td>Log FDI</td>
</tr>
<tr>
<td>Cons</td>
</tr>
</tbody>
</table>

5.0 CONCLUSIONS AND RECOMMENDATION

5.1 Conclusions of the Study
The study has examined the influence of various macroeconomic factors on exchange rate volatility in Kenya. Through an analysis of data from 2004 to 2024, including the exchange rate, balance of payments, inflation rate, and foreign direct investment, several key findings have emerged. Firstly, the study found that the exchange rate in Kenya exhibited significant volatility over the studied period, with fluctuations influenced by various macroeconomic factors. Secondly, there was a moderate negative correlation between the exchange rate and the balance of payments, indicating that a weaker currency worsens trade deficits. Additionally, a moderate positive correlation was observed between the exchange rate and inflation rate, reflecting the pass-through effect. However, foreign direct investment showed a weak and insignificant correlation with the exchange rate. Thirdly, the Granger causality test revealed that the exchange rate has a causal relationship with changes in other variables, particularly the balance of payments. However, there was no significant causal association between inflation rates, foreign direct investment, and the exchange rate. Lastly, the regression analysis highlighted significant negative correlations between the balance of payments and the dependent variable, as well as between foreign direct investment and the dependent variable. However, the correlation between inflation and the dependent variable was marginally significant.

5.2 Recommendations
Based on the findings of the study, the following recommendations are proposed that Policymakers should focus on strategies to stabilize the balance of payments, as it has a significant impact on exchange rate volatility. This could involve measures to boost exports, reduce imports, and attract foreign investment to improve the trade balance. Also, the study recommended that efforts to control inflation are essential to mitigate its impact on exchange rate volatility. The central bank should implement monetary policies aimed at maintaining price stability, which can help in stabilizing the exchange rate. Thirdly, the study recommended that while foreign direct investment showed a weak correlation with the exchange rate in the study, efforts to attract and retain foreign investment should continue. This could involve creating a conducive business environment, improving infrastructure, and providing incentives for foreign investors. Lastly the study recommended that future studies should delve deeper into the causal relationships between macroeconomic variables and exchange rate volatility. Longitudinal studies covering a broader timeframe and incorporating additional variables could provide more insights into the dynamics of exchange rate determination in Kenya.

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