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FACTORS INFLUENCING FOREIGN EXCHANGE RATE VOLATILITY ON FINANCIAL PERFORMANCE OF LISTED COMMERCIAL BANKS IN KENYA

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN THE DEPARTMENT OF BUSINESS ADMINISTRATION FOR PARTIAL FULFILLMENT

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DECLARATION

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

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DEDICATION

This research project is dedicated to my Late Father, (Mr. Johnson Nyakiti), who never witnessed the fruits of his son Philemon, Linet my sister who has motivated me in pursing the master's degree to this far. Finally, Amos my brother, who has ensured the writing of this project.

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ABBREVIATIONS

BK	Bank of Kigali
BRIC(S)	Brazil, Russia, India and China
BoP	Balance of Payment
CBK	Central Bank of Kenya
CPI	Consumer Price Index
EU	European Union
FX	Foreign Exchange
FDIs	financial direct investments
GDP	Gross Domestic Product
HF	Housing Finance
I&M	Investment and Marketing
IMF	International Monetary Fund
KBA	Kenya Bankers Association
KCB	Kenya Commercial Bank
KES	Kenya Shilling
KNBS	Kenya National Bureau of Statistics
MFI	Micro-Finance Institutions
NIC	National Information Centre
NSE	Nairobi Stock Exchange
PPP	Purchasing Power Parity

ROA   Return On Assets

ROE   Return On Equity

USD   United States Dollar

DEFINITION OF TERMS

Exchange Rate   Calvo defines the exchange rate in 2016 as the country's currency value in terms of the country's own currency.

Fiat Currency   A government-issued legal tender money that isn't backed by anything tangible (Foster, 2015).

Foreign Exchange

Risk   Currency fluctuations between the entity's currency and the foreign currency in which the payment must be made are known as "foreign exchange risk," (Hommel, 2016).

GARCH   To evaluate the volatility of stock returns, financial institutions utilize a statistical model known as GARCH (Generalized Auto Regressive Conditional Heteroscedasticity) (Bollerslev 2016).

Government Debt   All government debt, including that to internal creditors as well as to international banks or other countries, falls under this category (Cavallo, 2015).

Inflation   Increasing demand, higher import prices, or a cost-push are all contributing factors to the price increase (Thirwal, 2014).

Leading and

Lagging   A key part of leading a company is to make early attempts to collect foreign currency receivables and pay ahead of time foreign currency payables when a currency is predicted to decline or gain. In the event that the currency is expected to rise, the collection of foreign currency receivables should be delayed, and the payment of foreign currency payables should be delayed if the currency is expected to decrease (Hill, 2014).

Payments Netting   Netting systems are in place to minimize the expenses of inter-affiliate

currency transfers resulting from commercial transactions(Shapiro, 2014).

Recession   When the general level of economic activity in an area, country, or the entire world decreases for two consecutive quarters or more, this macroeconomic phrase is used (Kohler, 2014).

Risk Management   In this procedure, an organization or an individual is evaluated for pure loss exposure and the most effective treatment approaches for such exposure are identified and implemented in a systematic manner (Redja, 2016)

Speculation   It's the act of engaging in financial transactions that has a considerable loss-aversion risk while simultaneously holding the potential for huge reward. Because of speculation's high potential rewards, the danger of losing money is more than offset (Keyness, 2014)

ABSTRACT

Our goal is to identify factors that influence the foreign exchange rate volatility of Kenya's publicly traded commercial banks in Kenya. Specifically, the study evaluated the extent to which inflation rate, government debt, economic recession and speculation influence foreign exchange rate volatility of listed commercial banks in Kenya. Theoretically, the study adopted Purchasing Power Parity, the Monetary Model and the International Fisher Effect Theory to guide in the understanding and interpretation of the relevant objectives for the study. The study adopted a descriptive research design to inclusively consider all the parameters in the study. The target population was one hundred and the sample size was ninety-three employees of the listed commercial banks in Kenya obtained by application of Krejcie and Morgan. Questionnaire formed the main instrument of data collection which contained structured questions made in the form of Likert type scale, ranging from one to five. Primary data was used. Data was analyzed statistically using SPSS (V. 20) software. Mean, variance, and standard deviation were calculated to conduct descriptive analysis. We employed inferential methods like correlation and multiple linear regression analysis. For the purpose of testing the hypothesis of the presence or absence of a multicollinearity problem, a correlation study was performed using the Liner Regression Model. Correlation results indicated positive relationship between inflation rate, government debt and foreign exchange; negative relationship between economic recession, monetary speculations and foreign exchange. All null hypotheses were rejected at 95% confidence level. Conclusion, recommendations and further studies were suggested

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Government and corporate bonds, foreign exchange, mortgages, consumer credit, and several other markets are all directly and immediately influenced by monetary policy initiatives (Michael, 2016). If everything works as planned, monetary authorities' operations will contribute to changes in market behavior. Policy actions on major financial markets, as well as asset charges and returns upon those markets, have an impact on household, business, and other decision-maker behavior (Ioannidis & Kontonikas, 2015).

Because of the Global Financial Crisis of 2007-2008 and also the Eurozone Debt Crisis of 2011-2013, financial market professionals are increasingly interested in analyzing market disruptions throughout these crisis years as well as their repercussions on financial markets (Bailey & Chung, 2015).

Analyzing how Monetary Policy affects important financial markets necessitates a knowledge of how asset prices and returns on these markets effect families, firms and other stakeholders (Ioannidis & Kontonikas, 2015).

Because of the Global Financial Crisis of 2007-2008 and the Eurozone Debt Crisis of 2011-2013, scholars are more interested in studying financial markets in the context of these crisis years and understanding the impact of such structural disruptions on financial markets (Bailey & Chung, 2015). When several currencies have been involved, then fluctuation of the currency exchange rate becomes a fascinating aspect that affects commercial banks' profitability as a result of their financial intermediary process (Chiira, 2015). Foreign currency rates are

significant since no nation is self-sufficient and instead transacts commerce with each other. According to Adetayo, Dionco, and Oladejo, changes in exchange rates have a significant influence on a country's balance of trade (2016). Berger and Bouwman (2016) found that, just like every other commodity, the foreign currency rate seems to have a demand and supply aspect. Changes in fiscal policy affect currency supply, whereas inflation and interest rates affect currency demand (Brunnermeier and Lasse, 2015).

The commercial bank is the principal participant in foreign exchange since it serves a large number of clients who trade in foreign currencies (Jurion, 2016). As per for the authors, currency rate fluctuations might cause management and strategic worries about losses and profits. As a result, in emerging countries where financial markets are plainly failing, banks are the dominant source of funding (Jurion, 2016). Kenyan banks must always be licensed mostly by Central Bank of Kenya (CBK) in 2011 to purchase, trade, borrow, or lend foreign currency or engage in any other foreign currency-related transaction. This is most likely to protect them against the consequences of foreign exchange threat. By evaluating returns and recording changes in relation to exchange rate swings, the consequences of foreign currency risk may be identified. Exchange rate exposure to risk has an impact on operational cash flows and also the firm's value due to economic, translation, and transaction implications (Prasad & Choi, 2015).

1.1.1 Exchange Rate Volatility in the Kenyan Context

Importers didn't even pass on the entire exchange rate impact on import costs to local customers, according to Kiptui, (2015). The currency rate pass-through is estimated to be 20 percent in the short term, but 70 percent in the long run. A crucial criterion for a working exchange rate channel is met, according to the findings. Exchange rate flexibility must be consistent and significant enough to be a requirement of any monetary policy. The Kenyan shilling was trading

at Ksh 102.52 per each dollar in July 2015, following a 13.0% depreciation (Kinyua, 2016) that same time period, the national average of 6.74% declined to 6.54% (CBK, 2015). As a result, according to the (Joseph, 2015) research, importers don't really pass on the full consequences of the currency rate to local consumers. On January 2nd, 2009, Kenya had a 16.56 percent inflation rate and a Ksh 78.27 exchange rate to the US dollar. In 2015, the nation's rate of inflation was 6.74 percent, and the US dollar was selling at Ksh. 90.70. The nation's currency was devalued by 15.9%, resulting in a deflation rate of 59.3 percent. These conclusions back up a study by Kiptui et al. (2015) that found importers gradually pass on price hikes to consumers.

1.1.2 Listed Commercial Banks in Kenya

The National Bank of India (NBI) in Mombasa opened a new branch office in order to check the expanding trade in the port city prior Kenya Commercial Bank Limited was founded in July 1896. Grindlays Bank amalgamated with the National Bank of Ireland (NBI) in 1958 to establish the National and Grindlays Bank (NGB). Kenya's government bought a 60% share in NGB a year after achieving independence in an attempt to make banking closer to the many of the country's population. NGB, Kenya's largest commercial bank, was taken over by the Kenyan government in 1970, when it bought 100% of the stock. NGB's new identity became Kenya Commercial Bank (KCB). Savings & Loan Kenya limited was acquired by KCB, a home financing company, in 1972.

The banking industry in Kenya is ruled by the Central Bank of Kenya Act, the Companies

Act, the Banking Act, and many prudential guidelines made by the CBK. In 1995, exchange

restrictions were lifted and the banking system was liberalized. Kenya has one of the largest and

most advanced monetary systems in Sub-Saharan Africa, with a significant banking industry.

Banks, microfinance institutions, building societies, and non-banking financial institutions are all

supervised by Kenya's central bank (James, 2014). Kenya today has 44 commercial banks with

12 of them registered on the Nairobi Stock Exchange (NSE) (KBS, 2018).

1.2 Problem Statement

Various theoretical strategies have been introduced to shed light on the relationship between

macroeconomic basic news and currency rates (Engel, Charles, Kenneth & West, 2015; Yin &

Li, 2014; Obstfeld & Rogoff 2014). A lot of study has been done on macroeconomic

fundamentals as well as exchange rates, but somehow the results are varied. This might be

because different measuring time horizons or methods, which include high frequency data in

Galatti and Ho's (2013) research or monthly time series data in Evans and Lyons' (2018) paper,

were used (2015). It is challenging, according to Ronald and Taylor (2018), to demonstrate that

one model of exchange rate determination dominates all others. As a result of the inflationary fall

in the buying power of money, there are hidden costs for some as well as hidden benefits for

others (Ronald & Taylor, 2018). A corporation might lose money as a result of exchange rate

swings, which is really a source of risk (Kinyuma, 2015). As according Taiwo & Adesola

(2016), exchange rates play a critical role in every country's economy, influencing local pricing

levels, the profitability of imported commodities, allocation of resources, and investment

decisions. Gachua (2016) remarked that while some analyses on exchange rate volatility have

already been conducted, they appear to be oriented toward established nations, leaving a void in the emerging economies that need more research to be conducted.

Apart from the fact that different studies on the notion of exchange rate changes have been carried out on various sectors of the economy, the results appear to be varied (Engel, Charles, Kenneth & West, 2015; Obstfeld & Rogoff 2014). As a result of the inflationary fall in the buying power of money, there are hidden costs for some and hidden benefits for others (Ronald & Taylor, 2014). Exchange rate volatility is a source of risk for a country, as it can lead to failures and income loss (Kinyuma, 2015). According to Taiwo & Adesola (2016), exchange rates play a critical role in any country's economy, influencing local pricing levels, the profitability of imported commodities, allocation of resources, and investment choices.

The influence of monetary policy mostly on nominal as well as real economies has been studied in certain research (Aron & Muellbauer, 2014, Ludi& Ground 2016, Burger & Marinkov, 2015). According to Opati (2014), Kenya's currency depreciates when inflation goes up, although government debt was left out from the calculation, creating a knowledge gap. Ezirim and Muoghalu (2016) examined their hypothesis in a set of rising countries, using Nigeria as an illustration, to determine if there was a relationship between foreign investment problems, exchange rate situations, and external debt load. Researchers discovered that the weight of foreign investment was much more essential than the overemphasized debt burden component in causing financial distress (Ezirim & Muoghalu, 2016). Despite this, because this investigation (Ezirim & Muoghalu, 2016) was restricted to the Nigerian economy, the findings cannot be extrapolated to the situation, necessitating the need for more evidence. Masuku (2015) studied the influence of Kenya's foreign debt on the USD exchange rate from 2012 to 2017. According

to the analysis, Kenya's currency rate benefitted from foreign debt. Furthermore, the analysis did not look at the relationship between exchange rate volatility and foreign debt.

Exchange rate volatility as well as the balance of payments in Kenya were researched by Barasa (2015), who discovered that exchange rates determine the prices at which a nation exchanges with the rest of the globe, and that they are an important part of economic analysis and policy formation. Barasa (2015) proposed that the government increase its exports in order to generate additional foreign exchange, and that future research use speculation as a measurement of exchange rate changes. Gachua (2016) noted that while some analyses on exchange rate volatility have already been conducted, they appear to be oriented toward established nations, leaving a void in the emerging economies that need further research.

1.3 Research Objectives

1.3.1 General Objective

The overall goal of this research was to look at the factors that influence foreign exchange rate volatility across Kenya's publicly traded commercial banks.

1.3.2. Specific Objectives

i. To determine the impact of inflation on the foreign exchange rate volatility of Kenya's set out commercial banks.

ii. To investigate the impact of government debt on the foreign exchange rate volatility of Kenya's displayed commercial banks.

iii. To investigate the impact of the economic downturn on the volatility of Kenya's mentioned commercial banks' foreign currency rates.

iv. To determine the impact of monetary speculation on the foreign exchange rate volatility of Kenya's stated commercial banks.

1.4 Research Hypothesis

The research null hypothesis can be stated as:

H_01: Inflation rate has no significant influence on foreign exchange rate vitality of listed
commercial banks in Kenya.

H_02: Government debt has no significant influence on foreign exchange rate vitality of listed
commercial banks in Kenya.

H_03: Economic recession has no significant influence on foreign exchange rate vitality of listed
commercial banks in Kenya.

H_04: Monetary speculation has no significant influence on foreign exchange rate vitality of listed
commercial banks in Kenya.

1.5 Signification of the Study

The goal of the research was to contribute to the society's economic growth. The outcomes of
this study may serve as a guide for providing information on managerial decisions towards
Kenya's central bank managers. The findings of the study may raise knowledge in Kenya on how
to establish rules and policies to ensure a stable and resilient banking sector. The study, on the
other hand, may give information on the instability of foreign currency reserves to banking
sector participants such as NSE and CBK. Finally, the results might help future researchers and
academics comprehend the effects of currency fluctuation.

1.6 Scope of Study

This research focuses on Kenya's publicly traded commercial banks. The study's goals were to
determine how inflation, economic recession, government debt, and monetary speculation affect
the foreign exchange rate volatility of Kenya's listed commercial banks. To promote the

understanding of how foreign currency rate volatility in Kenya's listed commercial banks connects to each other, the PPP theory, the monetary model, and the International Fisher Effect were used. The investigation focused on bank workers from the listed commercial division at the Nairobi headquarters. The research was conducted in the years 2021-2022.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

To give a basis for the study and the concepts on foreign exchange rate volatility, this chapter includes a survey of the literature. In addition, the chapter shows theoretical review, conceptual framework, empirical review and literature gap on the study as had been laid down by the scholars on the same concept.

2.2 Theoretical Framework

The bulk of these phrases are used to both explain and predict events, as well as to grasp them. They can also be used to question and expand preexisting beliefs and assumptions about current knowledge. According to Rigor (2015), a study's hypothesis is based on this premise. The theoretical framework introduces and discusses the theory to explain the reason to why the research challenge for the study exists and therefore should be addressed. The researchers will base their research on the Purchasing Power Parity Theory, the International Fisher Effect Theory, and the Monetary Model.

2.2.1 The Purchasing Power Parity (PPP) Theory

Gustav von Mises developed a theory of purchasing power parity (1987). According to this theory, the relative buying power of two currencies influences the exchange rate between them. To balance the purchase power of the two currencies, a comparable rate will be utilized. Menon and Viswanathan created the PPP theory in line with the country's currency (2015). When purchasing power in various countries is equal, there will be a balance between the exchange prices of different currencies. To maintain prices steady, Reid and Joshua (2015) underlined that commodity prices should be similar to the country's currency. There are no transaction fees, no

trade barriers, and homogenous goods under this hypothesis. Commercial currencies must always be exchanged at their spot rate in order for the cost of a homogenous commodity to remain consistent throughout borders. A price index was presented as a method of determining a commodity's accurate price across countries. Determining purchasing power parity based on price indexes is the most difficult task since various nations use different goods to calculate their price levels (Reid, 2015).

The absolute and relative types of PPP were outlined by Menon and Viswanathan (2015). As an outcome of absolute PPP, equivalent items should cost the same regardless of currency, giving rise to the Law of One Price. Equilibrium exchange rates allow a country's currency to be used on a similar mix of products and services in both countries, which sounds plausible when evaluating at the relative worth of a country's currency in comparison to some other country's currency. This hypothesis will help us understand how Kenya's inflation affects the foreign currency rate volatility of Kenya's listed commercial banks.

2.2.2 The Monetary Model

Under David's 1741 monetary model, interest rate, GDP, money supply, and exchange rate are all linked. Dornbusch (2013) created it to explain what happens when a nation's currency devalues. Transformation in macroeconomic fundamentals, as according to Dornbusch's (2013) research, can explain part of the exchange rate miscalculation variation.

Edwards (2013) proposed a model that includes the idea that predicting mistakes are a function of known determinants, new information, and delayed forward rate. Ehrmann and Fratzscher (2014) discovered that macroeconomic fundamentals news may explain the volume but not the direction of exchange rate movement. Market factors appear to be critical in determining the

exchange rate, with projected changes in the real-time environment having the most impact (Hardouvelis, 2014).

Supply of money, national income, exchange rate, and price indices are also all tied to one other, according to monetary theory (David, 1741). The equation is followed by the model: $S = \frac{M_0^S}{kP^*y}$. (Copeland, 2013). This indicates that a country's exchange rate (S) is determined by its supply of money, the foreign country's price index, a constant of proportionality k (which varies by country), and real national revenue. Neely and Sarno (2012) suggest that the monetary model might not be very good at understanding currency movements due to its relative simplicity. Additional markets impact exchange rate behavior in addition to the commodities, labor, and foreign exchange as well as bond markets.

A few examples: Assets are generally assumed to be fully substitutable, having full price flexibility, which means that movements away from equilibrium would always return due to supply and demand, while goods and labor markets are thought to have full price flexibility (Neely & Sarno, 2012). The monetary model will aid in demonstrating the impact of government debt on foreign currency volatility among Kenya's publicly traded commercial banks.

2.2.3 The International Fisher Effect

Shapiro (2002) showed that variations in returns are similar to variances in inflation rates across two nations for those who believe in the global fisher effect. Normal risk-free interest rates are the product of inflation expectations and the actual rate of return in theory. According to Ubindi (2016), interest rates differ different nations since investors seek the same real return. As illustrated by Staikouras and Wood (2016), foreign currencies depreciate whenever interest rates are extremely high. Acquiring money from one country and spending it in another, according to the thesis, should not provide positive returns since the exchange rate adjusts to compensate for

the interest rate disparity Ubindi (2016). The exchange rate is influenced by factors other than

inflation, which restricts this theory. Because at equilibrium exchange rates, the basket of

commodities and services acquired with a single currency unit equals the basket acquired with a

single currency unit, this theory is important for this study. The Theory will aid in determining

the extent to which monetary speculation and economic recession affect the foreign exchange

rate volatility of Kenya's public listed financial institutions.

2.3 Conceptual Framework

The conceptual framework demonstrates how ideas are grouped to fulfil the goal of a research

study. It identifies how variables in the research study are linked to one another. The conceptual

framework is utilized in a study to describe concepts and develop relationships between topics

(McGaghie, Bordage & Shea 2015). The financial performance of publicly traded commercial

banks (dependent variable) is utilized in this study to illustrate the relationships between bank

liquidity, foreign exchange rate exposure, and capital adequacy (including independent variables)

as shown below.

Dependent Variable   **Independent Variable**

Inflation Rate
- Low purchasing power on local currency
- Distortion of financial information

Foreign Exchange Rate Volatility
- Variance between returns
- Par value

Government Debt
- Limitations of borrowing
- High bond issuance

Economic Recession
- Credit crunch
- Increased cost of borrowing

Monetary Speculation
- Forward currency buying
- Rise and fall in currency value

Figure 2.1 Conceptual Framework

2.3.1 Inflation Rate

As of 2000, the inflation rate in underdeveloped countries has more than twice that of developed countries (Bleaney & Fielding, 2014). Since 2017, the average inflation rate in industrialized countries has been moving down, whereas in underdeveloped countries it has remained stable or increased (Global Economic Prospects 2014). According to Doguwa (2015), when inflation in Nigeria reaches 10.5 to 12 percent, it is detrimental to growth. From 13.8 in 1971 to 16.0 in 1972 as per the CBN Statistical Bulletin (2015), substantial inflation was observed in the early 1970's. It may be due to the oil boom and the economic regulations and procedures that were put in place at the time following Biafra (civil war) between 1967 and 1970. The both exchange rate and rising prices must always be considered in order to attain the macroeconomic objective of price stabilization (Ito et al., 2015). Exports will no longer be competitive due to higher pricing caused by exchange rate changes. Extreme inflation erodes the export competitiveness that would have resulted from a decline in the currency rate (Ito & Sato, 2015).

As Michael and Dean (2014) point out, inflation is a critical macroeconomic factor that has a significant impact on currency rates. John and Muth (2015). Inflation causes an increase in the quantity of money in people's pockets or an increase in the prices of goods. Consumers will have to spend more money due to rising product costs. As a result, demand for the country's currency on the FOREX market will decline, lowering the value of a currency (Muth & John 2015). Kiptui (2013) claims that Kenya's inflation rate is controlled by local events with in long run, but that there are additional forces at work in the short run that influence to inflation. Changes in foreign pricing and real exchange rates, he claims, drive differences in inflation. Exporters and importers

will react differentially to changes in the relative prices of country's economic baskets, according to PPP theory.

2.3.2 Government Debts

As Cavallo (2015) found, the extent of a country's foreign currency-denominated debt contributed to exchange rate swings, sudden halts in the movement of capital, and a reduction of output on the home front Exchange rate depreciation was also observed to be amplified by foreign obligations, especially when the foreign debt was held by the public sector Countries with high levels of foreign debt had severe currency rate overshooting. According to Ezirim and Muoghalu (2016) and Siregar and Pontines (2015), exchange rate overshooting is exacerbated by external debts. Gressani and Faini (2016) found that keeping the currency rate inflated in the face of significant external debt was costly foreign borrowing. Awan, Asghar, and Rehman (2015) found that depreciation of the native currency had a significant influence. External debt and currency rates are intertwined, but to what extent is controversial. External stock debt has a strong negative impact on bilateral exchange rate volatility in emerging countries, according to a study by Devereux and Lane (2014).

When it came to currency depreciation, Asonuma (2013) looked at both pre- and post-default periods using a traditional dynamic sovereign debt model. Quantitative research was conducted using data from Russia, Argentina, and Uruguay to recreate the relationships involving currency devaluation and debt default risk prior and after defaults. When currency rates decline due to decreased trade commodities income and a significant foreign currency-based debt, developing economies default. Currency rates depreciated considerably more in the post-default period as a result of increasing default production costs and loss of access to the market.

When calculating the external debt, economic growth and foreign direct investment were also taken into account. For example, Were, (2014) and Babu, (2014) sought to determine the economic consequences of external debt. External debt and economic growth, as well as external debt and currency strength, were found to be negatively related in each study. Masuku (2015) studied the impact of Kenya's external debt on the USD exchange rate from 2012 to 2017. According to the analysis, Kenya's exchange rate benefited from external debt.

Draz and Ahmad (2015) investigated the impact of the Pakistani Rupee (PKR) exchange rate on international oil prices, comparing their conclusions to those of other studies on oil-producing countries. To be accurate, Nigeria. Data on the PKR-USD exchange rate, external debt, and world price of oil was evaluated using the Least Square Regression model and the Granger Causality test from 2008 to 2014. The result strongly suggests that the PKR's exchange rate is influenced by the country's foreign debt.

Other research has looked at the relationship between foreign debt levels and the exchange rate, fiscal deficit, trade conditions, and the budget deficit. The current debt crisis, as according Dornbusch (2015), is aggravated by unpredictable exchange rates and budget deficits. The researchers investigated Argentina, Chile, and Brazil in depth (Dornbusch, 2015). In one scenario, capital flight had a substantial effects on debt growth, while in another, it had a significant effect on levels of spending as well as composition. From 2000 to 2010, he studied these variables for a decade. Er employed balance - of - payments accounts in his research to link gross external debt to the economy's portfolio and spending decisions. The relationships between CAD, ERD, EPD, and BD were all positive. In addition, ERD and BD had a positive connection.

2.3.3 Economic Recession

Exchange rates can also have a considerable impact on a country's economic effectiveness during times of economic turmoil (Kohler, 2014). Importers find it more expensive to buy goods when the pound is weak, which is why the current account balance is positive (Kandil, 2013). The Eurozone crisis, as according Robin and Kloor (2015), has a major impact on EU firms due to exchange rate fluctuation. The Greek debt crisis seems to have had a huge influence on the Eurozone as a whole (Robin and Kloor, 2014). According to Evans, Martin, and Richard (2015), the European Central Bank's increased money supply to Greece has harmed the Euro as a currency.

The economic downturn had a substantial influence on Indonesia's economic system, according to Fethi and Pasiouras (2014), and contributed to a significant increase in unemployment in the country's labor market. Haung (2013) discovered that banks did not lend to the real sector economy during the Russian economic crisis, resulting in a drop in the distribution of common goods during a recession. Prior to the crisis, banks did not lend to the actual sector of the economy to finance production (Haung, 2013). Total factor productivity (TFP) growth should be utilized as a measure of the Thai financial sector's efficiency after the financial crisis, according to Chansarn's (2015) research (2002-2010). In Chansarn's (2015) study, which focuses on effectiveness in commercial banks and the finance and securities sector, also there is a part on domestic and overseas financial companies. Hayo (2015) found that, while both internal and external factors were to blame, domestic issues were perceived to be more essential when it came to mitigating the effects of a recession.

The currency rate, on average, does not follow economic fundamentals, at least not in a consistent way. Apart from that, according to Goodhart (2013), the majority of exchange rate

swings occurred when there were no systematic methods in place to track the economic trend.

For a example, according to Flood and Rose (2015), there is no meaningful association between

currency rate movements and macroeconomic fundamentals. As a result, large changes in the

currency rate can also be followed by relatively minor changes in the fundamentals, and vice

versa. Furthermore, the choice of an exchange rate regime (floating or fixed) has little impact on

macroeconomic parameter volatility (Flood & Rose, 2015).

Berger and Bouwman (2014) investigated the effect of bank equity on survival probabilities and

share of the market across various financial crises and "ordinary" times. Between 2000 and 2010,

there were two banking crises and three financial crises, as well as a "ordinary" period. Small

banks with a substantial amount of equity, as per their research, they are more capable of

surviving and also have a greater market share throughout financial crises. Cull and Martinez-

Peria (2013) began to look at how financial institution ownership influenced the number of loans

granted out in emerging Caribbean, Latin American, and Eastern European European countries

before and during the financial meltdown. Loan portfolio rates of growth for Latin American and

Eastern European local banks have turned down throughout the financial crisis. Foreign banks'

loan portfolio production levels in Eastern Europe has slowed more than domestic banks'

because corporate loans have dropped. Government-owned banks grew at a faster rate than

private internal and overseas banks in Latin America (Cull & Martinez-Peria 2013). According

to Beltratti and Stulz, certain banks fared much better than each other throughout the crisis

(2012). To figure out why certain banks performed much better than others throughout the crisis,

they examined at bank governance, country governance, local regulatory systems, and the bank's

earnings before the crisis. Banks improved performance in countries with strict capital adequacy

regulations and independent supervisory institutions. Whereas banks with competent supervisory

authorities earned low market returns, for those with weak supervision were forced to raise fresh

equity during the downturn, which was costly for shareholders.

2.3.4 Financial Speculation

Speculation seems to have the ability to either stabilize or destabilize a situation (Keyness,

2014). If done responsibly, it has a stabilizing effect. It aids in the speedy restoration of market

equilibrium. As according to Hicks (2014), speculation, by providing liquidity, enables hedgers

as well as other market participants to quickly discover counterparties without demanding huge

price concessions. Uninformed speculators can trigger stock market volatility (De-Long and

Waldmann, 2013). According to Tang and Xiong (2012), new commodity indices exacerbated

price disruption. The association between speculation or noise trading and price inconsistencies

or volatility has been studied in a variety of financial markets. These results were inconclusive.

Verma and Verma (2014) investigate noise trading in stock exchange markets, while Hongjun

and Yan (2015) argue that speculation is not only random and unimportant when aggregated.

Rather, they claim that behavioral biases play a role in systematic deviations from intrinsic

worth. Because of its fluctuation and liquidity, opportunistic attacks on foreign exchange have

already seen to impinge on national sovereignty. According to Dornbusch (2014), Eichengreen,

and Wypolsz (2013), speculative attacks drove devaluations inside the European Exchange Rate

Mechanism more than fundamentals.

Black, Fischer, and Myron have suggested that the interaction between informed and uninformed

activity is critical to a bank's efficient operation (2014). Forecasts were based on an unrelated

factor, noise (Black, Fischer & Myron2014). The banking industry makes noise about a specific

trade country's financial uncertainty, which has an impact on banks' lending capabilities.

2.3.5 Foreign Exchange Rate Volatility

Whenever variable is volatile, it suggests it will change throughout time (Ronald, & Mark, 2015). A variable gets more volatile as its size or rate of variation changes. Volatility is a statistical measure of a stock's or market index's return variability in finance. It can be calculated using the standard deviation or variance. The riskier something is, the more volatile it is in general (Stanley, 2014). Currency exchange rates are inversely proportionate to one another, according to the Civil Society Budget Advocacy Group. It's a measurement of how much one currency will be worth in another. The rate of exchange in between two currencies is sometimes known as currency exchange rates. According to Mishkin (2015), the true return of a portfolio is decided by its currency exchange rate. A falling exchange rate reduces capital and income gains from any returns. It influences other areas of earnings, such as interest rates and inflation, as well as capital gains from domestic stock. The exchange rate is influenced by cross-border direct investment, infrastructure, speculation, parity conditions, and portfolio investments, as well as political concerns. According to Eiteman (2014)

Every unit of foreign currency is worth a specified amount of domestic currency, according to Bradley and Moles (2014a). As per Reid and Joshua (2015), this shows the value of one external currency unit versus domestic currency. Omagwa claims that exchange rates are governed by the law of supply and demand (2015). According to them, the exchange rate allows them to compare the costs of things provided in other currencies. Adetayo, Dionco, and Oladejo (2014) found that exchange rate fluctuations can have a significant impact on the trade balance. Changes in currency rates, according to Omagwa (2015), have a direct influence on the price of imported goods, which has the inverse impact on the nation's external sector. Variations in currency values, according to Murthy and Sree (2016), have a significant impact on a country's foreign

debt. Normally, In a fixed-rate system, the central bank is the one that determines the par value of foreign and domestic currency (Reid & Joshua 2014).

2.4 Empirical Review

Munyama and Todani observed a significant relationship between changes in the currency exchange rate as well as South African exports to global markets as a consequence of their co-integration analysis of quarterly data (2015). The relationship between changes in foreign exchange rates and South African exports is not statistically significant, as per Muth (2015), but it would also be helpful if it did exist. Obadan (2016) found that the exchange rate has a significant impact on price structures in a range of countries. Exchange rate fluctuations affect the countries affected through relative pricing consequences. Copeland (2014) proposed the currency rate as a conditional variables for counter-inflationary strategy. According to a study on the stock exchange in Madagascar by Baxter, Marianne, Stockman, and Alan (2015), we must address the core problem and build a solid basis to ensure that foreign exchange cash flows are simply intended for production. Sekmen (2016) examined the influence of exchange rate variations on stock returns in the United States using squared residuals from autoregressive models covering the years 2014 to 2018. Exchange rate swings have a detrimental influence on stock returns, despite the introduction of hedging methods designed to offset the negative effect on trade volumes. According to Olugbenga (2017), there is a short-term positive relationship between the exchange rate and the stock market, but not a long-term favorable one. The actual findings of the study corroborated a number of theories concerning the relationship between the two variables.

According to a research that was carried on in Ethiopia by Agu (2015), suitable exchange rate regulations should be followed to keep the economy in balance. He argues that exchange rate

devaluation protects local manufacturing when the rate of depreciation is faster than domestic production. Zaire's real exchange rate volatility, according to Pearce, Hakkio, Craig, and Douglas (2015), harms exports both short- and long-term. In Zambia, Owoeye (2016) looked at the effects of currency rate volatility on banks profitability. The credit losses ratio and the deposit capital ratio were the two most important criteria in the analysis. Exchange rate changes have a variable impact depending on the performance measure that was eventually determined in the research.

Locally, empirical research have been done. Foreign exchange risk was found to have a negative influence on financial performance in Gitaru's (2014) study, which utilized Kenya Airways as an illustration. Variations in the exchange rate have an effect on foreign revenue and costs, according to the study. Using information from Muriithi, he investigated the impact of currency exchange rates on manufacturing company productivity (2015). According to the data, currency rates and corporate performance have a positive relationship. Mongeri also looked at how foreign exchange fluctuations influenced the NSE share index's performance (2015). The research found a relationship between stock market performance and the foreign exchange rate. The research employed a descriptive approach and discovered a link between the foreign exchange rate axc nd stock market performances. Onyancha (2016) investigated the influence of currency fluctuations on the financial performance of charitable organizations. Exchange rate fluctuations, according to the research, may well have a negative effect on project quality.

According to Musa (2015), fluctuations in the foreign exchange rate have a significant impact on the financial performance of Kenya's oil marketing enterprises. According to the study, changes in the foreign currency rate have little effect on oil marketing firms in Kenya. According to Rutto and Ondiek, currency changes affect Kenya's tea exports (2015). Determine how exchange rate

fluctuations affect Kenya's tea export revenues and offer policy recommendations for increasing the country's tea exports based on empirical findings. Johansen and Julius used a multivariate co-integration technique to discover the short- and long-term behavior of the variables on yearly time series analysis from 2013 to 2017. Engle and Granger's ECM technique was utilized to evaluate for stationary Dickey fullers and also Augmented Dickey Fullers (ADF). The data was acquired from a wide range of sources, including the IMF's financial statistics database, in additional to the Kenyan National Bureau of Statistics and Kenya Tea Board. Due to various shifting exchange rates, Kenyan tea exports suffer. To decrease the impact of exchange rates, the creation of a fiscal and monetary policy plan that can be governed by exchange rates was suggested.

Variations in foreign exchange rates effect both worldwide stock market volatility as well as cross-market correlations between the US stock market and currencies in Chun's sample nations that appreciates or devalue (2015). Emerging Pacific Basin economies that rely largely on foreign trade and equality is an important through financial direct investments are also included in the group (FDIs). According to Chun, fluctuating currency rates have a significant impact on domestic equities market volatility (2015). Since 2008, the effect of currency fluctuations on U.S.-local market correlation has grown. According to Aquino (2013) studies, exchange rate variations had little effect on stock returns inside the Philippines before and after the Asian financial crisis (2001-2014). Investors started demanding a premium on their properties after the disaster, according to the research, to compensate for the additional exposure they felt to exchange rate risk (Aquino 2013). By the use of a regime switching model, Chkili and Nguyen (2014) investigated the dynamic links between stock market returns and currency rates from 1997 to 2013. According to data analysis, stock markets appear to have a greater impact on

currency rates during periods of low and high volatility. Patro and Wald (2016) looked at five African countries' exchange rates and see how investor interest affects currency movement. Even when the effect is just brief, the data reveal that delayed investor attentiveness has a considerable impact on currency returns.

Pakistan's fiscal deficit, currency devaluation, and worsening trade agreements, according to Awan (2015), all attributed to the country's rising foreign debt between 2008 and 2014. The relationship between foreign debt, exchange rate, and terms of trade degradation has been established over time. These factors were shown to play a significant role in Pakistan's foreign debt burden (Awan, 2015). Alam and Taib (2013) used debt trap and non-debt trap countries to evaluate the relationship between foreign budget shortfall and state debt, currency exchange depreciation, and current account deficit over a thirty-year period (1986 to 2015). An ecological dichotomous empirical assessment was conducted. Foreign public debt appeared positively associated with budget deficit, exchange rate depreciation, and current account deficit, according to six DTC and eight NDTC panels.

2.5 Critique of Literature Review

There is really no consensus in the literature on the relationship between macroeconomic fundamentals and currency rates (Engels & West 2015). Engels and West (2015) discovered a substantial link between exchange rate fluctuations and macroeconomic fundamentals. Macroeconomic variables in the US and the Eurozone were discovered to have a clear association with exchange rate changes as a consequence of the investigation. The authors of the study claim that the results should be consistent with various exchange rates. Because of the Great Depression, advanced countries were forced to perform considerable research on currency rate pass-through in order to determine a nominal inflation anchor (Aliyu, 2012). Regardless of

the fact that several scholars have highlighted the relationship between exchange rate pass-through and exchange rate fluctuations. The research on the influence of currency rate fluctuations is conceptually sparse (Albuquerque & Portugal 2014).

Tobin (2014) claims that policymakers are divided on tax accreditations, and that a tax on financial transactions could reduce speculation and hence limit volatility and misalignment (Tobin, 2014). According to Tobin (2014), an increase in such a fee would cause foreign exchange markets to lose some lubricant. The tax has the ability to promote efficient market hypothesis and raise funds for the other welfare-enhancing projects, according to its declared objective. This could only happen if the conjecture is uninformed and unstable. The taxation will have a price label attached to it since it will be well-informed and contribute to stability (Tobin, 2014).

If a firm pays expenses in one currency and then generates sales in another, there is a worldwide economic risk. Fluctuations in the foreign currency rates impact the firm's competitive position. If indeed the cost currency rises against the sales currency, earnings are projected to drop as it becomes more costly to acquire inputs and inexpensive to sell finished items (Srinivasulu, 2016). As a result, future cash flows as well as the company's worth may be impacted. We refer to it as the present value of cash inflows flows. Another element of financial risk is price changes, which impact cash flows in future. A company's competitive stance may be harmed if the currency rate varies (Gachua, 2016).

According to Lessard, a number of factors might influence an industry's future cash flow and, as a result, its economic exposure (2015). The both company's investment strategy and external events such as a country's political issues, according to Gachua (2015), may affect the company's product's level of sales. Such dangers are difficult to recognize, quantify, and or mitigate since

they are likely to include currency movements with which the organization has no direct real-world relationships. If buying power parity is maintained, prices are completely variable (Dornbusch, 2013). When there is a shock in one sector, prices and exchange rates should shift quickly. However, in practice, this assumption may not always be correct (Dornbusch, 2013).

2.6 Literature Gap

According to Goodard, Molyneux, and Wilson, investors may be willing to pay extra to avoid certain risks if the economy can be described by a few universal variables (2014). Only a few studies, such as Goodard, Molyneux, and Wilson (2014), have looked at the influence of inflation and public debt on exchange rate volatility, which affects the banking industry's profitability. Most research, according to Bleaney and Fielding (2015), have focused on industrialized economies, showing that developing economies have a significant inadequate knowledge. In the setting of coexisting mentioned commercial banks, Zhang Marsh & MacDonald (2016a) investigated how financial companies effect exchange rate return volatility. According to the conclusion of the research, speculation and recession have a significant impact on a country's purchasing power parity and, as a result, its exchange rate volatility. In the study, there was no empirical evidence to back up the theoretical notion that speculation and recession have an impact on commercial banks (Zhang, Marsh & MacDonald, 2016).

2.7 Summary of Literature Review

This chapter reviewed relevant literature to the study's premise and made recommendations for further investigation. It examined how the foreign currency rate affects the Bank's performance using ideas including purchasing power parity, the money model, and the international Fischer effect. The study also includes a review of empirical studies from both international and local perspectives. Empirical investigations have been undertaken in countries where the findings may

not apply to Kenyan listed commercial banks, including Wong, Wong, and Leung (2015); Opaluwa, Umeh, and Ameh (2015); Gachua, Umeh, and Ameh (2015); Wong, Wong, and Leung (2015); Wong, Wong, and Leung (2015); Wong, Wong, and Leung (2015); Wong (2016; Owoeye and Ogunmakin, 2016; Adetayo, 2017). Cherop (2015), Ambunya (2016), Maina (2015), Gachua (2016), Musyoki, Pokhariyal, and Pundo (2012), Ruto and Ondiek (2017), and Wanjau (2016) everyone began to look at the effect of exchange rate volatility in Kenyan commercial banks that were publicly traded, but none of them included government debt as a marker.

The impact of inflation on underdeveloped countries has also received little attention (Ajayi, 2015). Ajayi (2015) investigated the effectiveness of listed commercial banks in developing economies, employing Nigeria as a case study during 2012 and 2013, whenever the country's currency was broadly floating among the world's major currencies. Regardless, the study was restricted to the Nigerian economy.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this section, we covered the rationale for the study, the population of interest, data collection and analysis procedures, and sample methodology.

3.2 Research Design

As an outcome, the research design is the blueprint for data collection, interpretation, and measurement; it's really the overall strategy for putting the many parts of the research together in a coherent and logical manner to address the research question (Mugenda & Mugenda, 2013). It investigated how changes in the value of the shilling affect the bottom lines of Kenya's publicly listed commercial banks. In this study, researchers opted for a descriptive methodology. According to Cooper and Schindler (2014), a descriptive design narrows in on its subject matter through the process of compiling a summary of a group of subjects, events, or people through the collection and analysis of data. A descriptive design is beneficial since it streamlines the analysis process and is less expensive to implement (Cooper & Schindler 2014).

A population, according to Mugenda & Mugenda, is the entire collection of entities under investigation that have a common characteristic (2013). The target population refers to those who are members of a group that will be studied or from whom information will be obtained (Burrows, 2015). The study's target audience included senior management, middle level management, and finance staff members from Kenya's listed commercial banks in Nairobi. (Table 3.1).

Table 3.1 Total Population

Bank Name	Total Population
Co-operative Bank of Kenya Ltd	12
Barclays Bank Ltd	8
BK Group PLC	6
Diamond Trust Bank Kenya Ltd	10
Equity Group Holdings	15
HF Group Ltd	7
I&M Holdings Ltd	7
KCB Group Ltd	15
National Bank of Kenya Ltd	11
NIC Group PLC	7
Standard Chartered Bank Ltd	8
TOTAL	**106**

(Source, the Kenya Bankers Association, 2018)

3.4 Sampling Technique and Sample Size

3.4.1 Sampling Technique

Sampling, as defined by Mugenda and Mugenda (2015), is the process by which a representative

subset of a population is drawn for analysis in order to generalize those findings to the whole

population under investigation. The stratified random approach was used in this investigation.

Kothari (2014) suggests stratified random sampling due to the size of the population and the

complexity of identifying every member of the community. Stratified random sampling was used

to select each subject in a population independently of the others in a single phase. The most

ideal qualifying reason for this technique is that every member of the population has an equal

chance of being chosen as a subject (Kothari, 2014).

3.4.2 Sample Size

The sample size of a research refers to the number of participants who were randomly chosen from the study's target population and had their data collected for further investigation (Kothari, 2014). A specified sample (the number of units chosen for contact or data collection) and final sample sizes have been set, according to Sekeran and Bougie (2015). The sample size was calculated using the Krejcie and Morgan formula, as illustrated below.

$$S = X^2 NP (1-P) \div d^2 (N-1) + X^2 P (1-P)$$

S= Required Sample size.

X^2 = the chi-square statistic for a single degree of freedom at the specified level of significance (3.841).

N= the population size.

P= the anticipated population percentage (0.50, to maximize the sample size).

d= The degree of accuracy expressed as a proportion (0.05).

Table 3.2: Sample Size

Bank Name	Total Population	Sample Size
Co-operative Bank of Kenya Ltd	12	11
Barclays Bank Ltd	8	6
BK Group PLC	6	5
Diamond Trust Bank Kenya Ltd	10	8
Equity Group Holdings	15	14
HF Group Ltd	7	6
I&M Holdings Ltd	7	6
KCB Group Ltd	15	14
National Bank of Kenya Ltd	11	10
NIC Group PLC	7	6

Standard Chartered Bank Ltd	8	7
TOTAL	**106**	**93**

3.5 Data Collection Methods

Self-administered questionnaires were the major source of information for the study. The most common technique of data gathering was through questionnaires. The survey included both open-ended and closed-ended items, with the latter given on a five-point Likert scale for ease of use and analysis. As a result, rapid data analysis was aided because response variation was reduced.

3.6 Data Collection Procedure

The university gave the researcher with an introductory letter allowing him to collect the needed data from the responders. The major instrument for gathering information was the questionnaire, which was provided to respondents to fill out and then collected later. Questionnaires are popular because they provide respondents with enough time to provide responses based on their best knowledge. After that, the data from the questionnaire was compiled for presentation and analysis.

3.7 Pilot Study

To ensure instrument's reliability and validity, a pre-study was conducted. Muiruri and Kingi, (2015) established that piloting is done to test for the reliability and validity of the research instrumentation before the actual study. For this study, piloting was done to the employees who will not be part of the actual study. During pilot study, every questionnaire element was pre-tested as well as query content material, wording, collection, shape and format, question challenges and commands. A 10% of the population size was used in the pilot study. The response attained was used to review the questionnaire earlier before the actual study.

3.7.1 Validity

Validity is defined by Ngwili and Were (2014) as the inferences of meaning and accuracy based on study output. One of the key reasons for doing a pilot research is to determine the questionnaire's validity. To establish the validity of the surveys, the researchers looked at each aspect and content legitimacy. The validity of the study was assessed by a set of standardized questions. The results of the pilot study indicated that the questionnaire could be completed in a short amount of time, and that the questions could be understood without too much effort on the part of the responders.

3.7.2 Reliability Results

The consistency level of the survey instrument's reliability measures whatever it is supposed to test (Burrows, 2015). Instrument dependability refers to the degree to which a research tool produces the same results in different situations under the same conditions. The term "reliability" refers to the ability to repeat the results of a study. In this study, the instruments' dependability was tested on 10% of the study population to ensure that identical results would be obtained when the real study was conducted. According to Mugenda & Mugenda, Cronbach's Alpha Model on SPSS is used to measure reliability and consistency, which is the degree at which a study instrument generates predictable results after multiple trials (2014).

Table 3.3 Reliability Statistics

Cronbach's Alpha Based on Standardized Items[a]	N of Items
.821	9

Internal consistency, or Cronbach's Alpha, was used to determine the questionnaire's reliability statistically. Normally, Cronbach Alpha, a measure of internal consistency, is given a value

between 0 and 1. As a rule of thumb, a reliability coefficient of at least 0.7 is considered adequate. The higher the score, the more trustworthy it is (Adrian, 2013). The Cronbach's alpha coefficient, calculated for all 9 items, was 0.821, showing good internal consistency between the independent and dependent variables. DeVellis's (2012) recommendations, which highlight the generally accepted rule of thumb for explaining internal consistency, were corroborated by the findings: a score of 0.9 or higher indicates excellent, 0.9 to 0.8 indicates good, 0.8 to 0.7 indicates acceptable, 0.7 to 0.6 indicates questionable, 0.6 to 0.5 indicates poor, and 0.5 and below indicates unacceptable.

3.8 Data Analysis and Presentation

To verify that the surveys are complete and uniform, the data was coded, tabulated, and edited. Questionnaires were utilized to gather the essential information (SPSS). Codes were developed to aid in the analysis and interpretation of data. For each variable, descriptive statistics such as standard deviation, maximum and minimum mean values were used to describe the signs of exchange rate volatility. A correlational study was performed to see if there was a problem with multicollinearity, and a Liner Regression Model was utilized to test the hypothesis.

Cooper and Schindler (2014) state that Pearson Correlation Coefficient Investigation with one-tailed important test can be performed to examine the degree of variance and relevance level in between variables. In this study, we looked at the relationships between specific measures of currency market volatility using Pearson correlation to test for the existence of a monotonic connection between the independent and dependent variables.

A multivariate regression model was used to demonstrate the connection between the dependent and independent variables. When there are more than one predictor variable in the data analysis, according to Kotler (2014), a multivariate multiple regression model is appropriate. In order to

establish the connection between the explanatory and response variables, a multivariate regression analysis was carried out:

$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \mathcal{E}$

Where;

Y= Foreign Exchange Rate Volatility

X_1= Inflation Rate

X_2 = Government Debt

X_3 = Economic Recession

X_4 = Monetary Speculation

€ = Error Term

The sensitivity of the dependent variable (Y) to changes in the predictor variables (X1, X2, X3, and X4) is captured by the regression coefficients (1-4) in the Model, where 0 is the constant term. The unaccounted for model deviations are captured by the € error term.

Findings were presented by use of graphs and tables so as to facilitate comparison in the analysis. A quantitative report was generated through the tabulations, percentages, measures and central tendency.

3.9 Hypothesis Testing

Hypotheses Statement	Hypotheses Test	Decision Rule
H_01: Inflation rate has no significant influence on foreign exchange rate vitality of listed	β- test H_o: $\beta_1=0$; HA: = $\beta_1 \neq 0$	Reject H_{o1} if P-value ≤ 0.05 Otherwise fail to reject H_{o1} if P-value ≥ 0.05 PP= α. +β_1SFS+ε

commercial banks in Kenya.		
H$_0$2: Government debt has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya.	β-test H$_o$: β$_2$=0; HA=β$_2$≠0	Reject H$_{o2}$ if P-value ≤ 0.05 Otherwise fail to reject H$_{o2}$ if P-value ≥ 0.05 PP= α. +β$_2$SQ+ε
H$_0$3: Economic recession has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya.	β-test H$_o$: β$_3$=0; HA= β$_3$≠0	Reject H$_{o3}$ if P-value ≤ 0.05 Otherwise fail to reject H$_{o3}$ if P-value ≥ 0.05 PP= α. +β$_3$SSL+ε
H$_0$4: Monetary speculation has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya	β-test H$_o$: β$_4$=0; HA= β$_4$≠0	Reject H$_{o4}$ if P-value ≤ 0.05 Otherwise fail to reject H$_{o4}$ if P-value ≥ 0.05 PP= α. +β$_4$SSL+ε

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1. Introduction

In order to analyze the data, this chapter does diagnostic testing and hypothesis testing. This study used SPSS version 20 to analyze the data and also conducted several tests such as multicollinearity test, Correlation and regression specification test, and overall significance of model test (F-test). In addition, table values generated from empirical results were interpreted.

4.2 Response Rate

The study sought to establish the response rate of banks. Table 4.1 displays the results

Table 4.1 Response Rate

Name of the bank	Questionnaires distributed	Questionnaires returned	% Return
Co-operative Bank of Kenya Ltd	11	11	100
Barclays Bank	6	6.	100
BK Group PLC	6	6	100
Diamond Trust Bank Kenya Ltd	5	5	100
Equity Group Holdings	8	8	100
HF Group Ltd	14	14	100
I&M Holdings Ltd	6	6	100
KCB Group Ltd	6	6	100
National Bank of Kenya Ltd	14	14	100
NIC Group PLC	10	10	100
Standard Chartered Bank Ltd	6	6	100
Total	93	93	100

Since Mugenda (2008) suggests that a response rate of 60% or more is desirable and appropriate for analysis, this was deemed to be the case. According to Zikmund et al. (2010), a response rate of above 50% is acceptable for analysis, 60% is good, and 70% is excellent. The importance and validity of the results are increased by the high response rate. As a result, the study's total response rate of 100% was considered satisfactory and appropriate for future investigation. The 100% response rate was acquired because questionnaires were hand delivered and waited for respondents to fill.

4.3. Level of Education in Bank

In addition, the study aimed to determine the educational backgrounds of the participants. These findings are shown in Table 4.2.

Table 4.2 Level of Education in Bank

		Frequency	Percent	Cumulative Percent
Valid	Diploma	10	10.75	10.75
	Bachelor	63	67.74	78.49
	Masters	20	21.51	100.0
	Total	93	100.0	
Total		93	100.0	

Table 4.2 above analyzed the level of education in banking sector. Results indicated that diploma holders were the lowest at 10.75%, degree holders was highest having 76.74% and masters were at 21.51%. Because of competition and ever changing technology in banking sector, commercial banks are recruiting at retaining employees who have degrees and masters qualifications so as to maintain markets share and remain competitive

4.4. Number of years worked in Bank

The study sought to establish the number of years that an employee has worked. Table 4.3

displays the results.

Table 4.3 Banks' Period of operation

	Frequency	Percent	Cumulative Percent
1-10 years	51	54.38	54.38
11-20 years	27	29.03	83.41
21-30 years	10	10.75	94.16
31 and Above	5	5.84	100.00
Total	19	100.00	

The above table 4.3 analyzed banks' period of operation which indicated that employees who

have worked from 1 year to 10 years had higher percentage of 54.38% followed by 11 years to

20 years which had 29.03%; 21 years to 30 years and lowest percentage was employees with 31

years and above having 5.84%. The variance in years of operation could be the energy required

in commercial banks and also the long working hours which gave higher percentage of years

between 1- 10 years.

4.5 Job Title

The study sought to establish the of job titles of workers. Table 4.4 displays the results

Table 4.4 Job Title

		Frequency	Percent	Cumulative Percent
Valid	Top Level Manager	23	24.73	24.73
	Middle Level Manager	70	75.27	100.00
Total		93	100.00	

Results n Table 4.4 above showed that majority were middle level managers which had 75.27% and top level managers indicated 24.73%. Results meant top levels don't have positions in commercial banks which are bank managers.

4.6 Banks' Shareholders

The study sought to establish the majority of shareholder. Table 4.5 displays the results

4.5 majority shareholder

		Frequency	Percent	Cumulative Percent
Valid	Local (over 51%)	3	27.27	27.27
	Foreign (Over 51%)	8	72.73	100
Total		11	100.0	

Results in table 4.5 about majority shareholding indicated that locally owned banks had 27.27% and this as a results on how thank bank was basically formed. Foreign owned commercial banks had the biggest percentage of 72.73%. The results meant that because of Foreign Direct Investment (FDI), foreign investors through hedging found it is less risky to invest in commercial banks in Kenya.

4.7. Years of Operation in Kenya

The study sought to establish the years of operation in Kenya. Table 4.56 displays the results

Table 4.6 Years of Operation in Kenya

		Frequency	Percent	Cumulative Percent
Valid	1 – 5 years	0	0.00	0.00
	6 – 10 years	0	0.00	0.00
	11 – 15 years	3	27.27	27.27
	16 – 20 years	8	72.73	100.0
Total		11	100.00	

Table 4.6 gave results years of operations of commercial banks in Kenya. Results showed that majority of banks have operated between 16-20 years and gave a 72.73% followed by banks which have operated for period ranging from 11-15 years. The analysis indicated that no commercial banks which have operated below 5 years under the study. The results meant that it takes time for banks to be listed as commercial banks in Kenya under rule of Central Bank os Kenya (CBK).

4.8. Descriptive Statistics

In a descriptive analysis, the average and standard deviation of the study's relevant variables are displayed, revealing the interdependence of the independent variables. The range of values that each variable can take on is also shown, along with the lowest and maximum values.

Table 4.7 Descriptive Statistics

	N	Min	Maxi	Mean		Std. Dev	Vari
	Statis	Stat	Stat	Sta	Std. Error	Statistic	Statistic
INFLATIO RATE	93	2.14	5.71	3.62	.23	.95	.90
ECONOMIC RECESSION	93	2.29	4.67	4.23	.13	.55	.31
GOVERNMENT DEBT	93	1.14	5.86	3.51	.350	1.40	1.96
MONETARY SPECULATION	93	3.00	5.00	4.03	.11	.47	.22
FOREIGN EXCHANGE	93	1.73	5.33	3.09	.20	.82	.68
Valid N (listwise)	93						

Data from original sources were analyzed descriptively in the research (Questionnaire). Table 4.7 represents descriptive statistics for inflation rate, economic recession, government debt, monetary speculation and foreign exchange. The average of inflation rate, economic recession, government debt, monetary speculation and foreign exchange for the period of study was 3.62,

4.23, 3.51 and 4.03 respectively. Mean statistics indicated which variable strongly influence foreign exchange rate and table 4.7 showed that economic recession greatly affect/influences foreign exchange with mean of 4.23 followed by monetary speculation with mean of 4.03 followed by inflation rate with mean of 3.62 and last variable was government debt with smallest mean of 3.51. The maximum value for the inflation rate, economic recession, government debt, monetary speculation and foreign exchange for the period was 5.71, 4.67, 5.86, 5.00 and 5.33 respectively. The minimum values of inflation rate, economic recession, government debt, monetary speculation and foreign exchange 2.14, 2.29, 1.14, 3.00 and 1.73 respectively. The deviation from the mean value was 0.95, 0.55, 1.40, 0.47 and 0.82 for inflation rate, economic recession, government debt, monetary speculation and foreign exchange respectively. The standard deviation of the data was within +/- 2 standard deviations from the mean, indicating that the distribution was normal. This means that commercial banks' bottom lines are affected by interest rates.

4.9 Pearson's Correlation Coefficient.

The study used correlation technique to assess the association between the inflation rate, economic recession, government debt, monetary speculation and foreign exchange with the Karl Pearson correlation coefficient (rho) analysis which gives a statistic that lies between -1 and +1

Table 4.8 Pearson's Correlation Coefficient

		FOREIGN EXCHANGE	INFLATION RATE	ECONOMIC RECESSION	GOVERNMEN T DEBT	MONETARY SPECULATIO
	Pearson Correlation	1	.126	-.044	.162	-.189
FOREIGN EXCHANGE	Sig. (2-tailed)		.643	.871	.549	.484
	N	93	93	93	93	93
	Pearson Correlation	.126	1	-.579*	.706**	-.640**
INFLATION RATE	Sig. (2-tailed)	.643		.019	.002	.008
	N	93	93	93	93	93
	Pearson Correlation	-.044	-.579*	1	-.059	.541*
ECONOMIC RECESSION	Sig. (2-tailed)	.871	.019		.827	.031
	N	93	93	93	93	93
	Pearson Correlation	.162	.706**	-.059	1	-.310
GOVERNMENT DEBT	Sig. (2-tailed)	.549	.002	.827		.242
	N	93	93	93	93	93
	Pearson Correlation	-.189	-.640**	.541*	-.310	1
MONETARY SPECULATION	Sig. (2-tailed)	.484	.008	.031	.242	
	N	93	93	93	93	93

*. Correlation is significant at the 0.05 level (2-tailed).

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

4.9.1 Relationship between Inflation Rate and Foreign Exchange

From the data in table 4.8, we can see that there is a positive correlation between inflation and

the value of the currency. The results suggest that the correlation between inflation rate and

exchange rate was very small and statistically insignificant (p=0.05). When inflation rate

increases by one percent, on average, foreign exchange will increase by 12.6 percentages, holding other variables constant.

4.9.2 Relationship between Economic Recession and Foreign Exchange

Above, Table 4.8 of the correlation matrix revealed a connection between the economic downturn and the currency exchange rate. A negative correlation of -0.044 was found, which was not statistically significant at the 0.05 level. When everything else stays the same, a 4% drop in the value of the currency occurs when the economic slump deepens by 1%.

4.9.3 Relationship between Government Debt and Foreign Exchange

Government debt and foreign exchange have a slight positive connection of 0.162, however this is not statistically significant at the 0.05 level (see table 4.9 above for details). If we assume that everything else stays the same, this indicates that a one percentage point rise in government debt results in a 16.2 percentage point increase in foreign exchange.

4.9.4 Relationship between Monetary Speculation and Foreign Exchange

An insignificant ($p > 0.05$) -0.189 negative correlation between monetary speculation and foreign exchange was shown in table 4.9. When all else stays the same, a one percentage point rise in monetary speculation causes an 18.9 percentage point decline in the value of foreign currency.

4.10 Multicollinearity Test

Multicollinearity test was done to avoid partial effect of independent variables when it comes to decision making in research. A good regression model should not produce Multicollinearity among the independent variables.

Table 4.9 Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	INFLATIORATE	.181	5.531
	ECONOMICRECESSION	.411	2.431
	GOVERNMENT1	.312	3.203
	MONETARYSPECULATION	.539	1.857

The correlation between the study's independent variables is displayed in table 4.9, which was derived using a multicollinearity test. Both the tolerance collinearity statistics and the Variance Inflation Factors were used to test for multicollinearity (VIFs). Table 4.9 detailed the values for the variation inflation factor (VIF) and the tolerance (2010). For VIF $>= 10$ and tolerance $>= 1$, multicollinearity issues arise. The table indicated, however, that the VIF was less than 10 and the tolerance was less than 1, indicating that there was no major multicollinearity problem and no major rise in the variance of regression coefficients when interpreting the findings.

4.11 Model Summary-regression
Table 4.10 Model Summary

Model	R	R Square	Adjusted R Square	Change Statistics	
				F	Sig F Change
1	.239[a]	.057	-.286	.166	0.951

a. Predictors: (Constant), MONETARYSPECULATION, GOVERNMENTDEBT, ECONOMICRECESSION, INFLATIORATE

Table 4.10 displays the outcomes of running the regression output. The p-value of the F-test is used in basic regression analysis to determine if the model as a whole is statistically significant.

This study's model was not statistically significant at the 5% level (p=0.951), with three significant digits after the decimal point. With an R-squared value of 0.057, the variables in the model explained 5.7% of the total variance in foreign exchange rates. After accounting for the total number of predictor variables in the model and assuming that all other variables impacting foreign exchange are held constant, the adjusted R-squared value revealed that the model explained around 28.6% of the variability in commercial banks' FX. For further analysis and fitness of the model some variable can be dropped for model to account for 70%.

4.12. ANOVA Analysis
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Table 4.11 **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.582	4	.145	.166	.951[b]
	Residual	9.643	11	.877		
	Total	10.225	15			

a. Dependent Variable: FOREIGNEXCHANGE
b. Predictors: (Constant), MONETARYSPECULATION, GOVERNMENT1, ECONOMICRECESSION, INFLATIORATE

Table 4.11 above on ANOVA results, researcher finds results from the predictor's variable, government debt, economic recession, inflation rate, and monetary speculation to study foreign exchange of volatility of commercial banks. At a 95% confidence level, the significance results indicated that all of the predictors had no meaningful impact on foreign exchange; ($P= 0.951> 0.05$).

4.13. Regression Model Analysis

Table 4.12 **Regression Model Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	4.949	4.901		1.010	.334		
INFLATIORATE	-.163	.598	-.188	-.273	.790	.181	5.531
1 ECONOMICRECESSION	-.021	.675	-.014	-.030	.976	.411	2.431
GOVERNMENT1	.131	.308	.222	.423	.680	.312	3.203
MONETARYSPECULATION	-.406	.696	-.233	-.583	.571	.539	1.857

a. Dependent Variable: FOREIGNEXCHANGE

4.13.1 Model Equation

From the regression model analysis table 4.12 above, model equation was;

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e$$

$$Y = 4.949 - 0.163 - 0.021 + 0.131 - 0.406 + \varepsilon.$$

Where:

Where;

Y= Foreign Exchange Rate Volatility

X_1= Inflation Rate

X_2 = Economic Recession

X_3 = Government Debt

X_4 = Monetary Speculation

$€$ = Error Term

Regression results the coefficients on inflation rate, economic recession and monetary speculation and foreign exchange were negative while about government debt and foreign exchange was positive. The interpretation is that a unit change in inflation rate, economic

recession and monetary speculation leads to decrease of foreign exchange by 16.3, 2.1 and 40.6

respectively. A unit change in the government debt causes a 13.1 unit rise in foreign exchange.

4.14 Hypothesis Testing for Relationship between Inflation Rate, Government Debt, Economic Recession and Monetary Speculations

Table 13 Hypothesis Testing

Hypotheses Statement	T Stat	Sig.	Conclusion
H_01: Inflation rate has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya.	-.273	.790	Reject H_01 Since (0.790 > 0.05)
H_02: Government debt has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya.	.423	.680	Reject H_02 Since (0.680 > 0.05)
H_03: Economic recession has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya.	-.030	.976	Reject H_03 Since (0.976 > 0.05)
H_04: Monetary speculation has no significant influence on foreign exchange rate vitality of listed commercial banks in Kenya.	-.583	.571	Reject H_04 Since (0.571 > 0.05)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study's findings and conclusions, as well as any applicable suggestions, are presented in chapter five. The overall goal of this research was to look at the factors that influence foreign exchange rate volatility across Kenya's listed commercial banks. The study's summary, conclusion, and recommendations were based on the following goals of the study.

i.   To determine the impact of inflation on the foreign exchange rate volatility of Kenya's commercial banks that have been mentioned

ii. To investigate the impact of government debt on the foreign exchange rate volatility of Kenya's publicly traded commercial banks.

iii. To investigate the impact of the economic downturn on the volatility of Kenya's listed commercial banks' foreign currency rates.

iv. To determine the impact of monetary speculation on the foreign exchange rate volatility of Kenya's commercial banks that are listed

5.2. Summary of Key Findings

Several empirical investigations, each followed by a critique of the same conclusions, found that the majority of them used a multiple regression model to explore the association between commercial banks and foreign currency volatility. The research also found that the papers examined fell short of addressing the impact of macroeconomic factors volatility on commercial bank financial performance. The eleven banks that are listed on the NSE were the study's target population. Questionnaires were used to obtain primary data because they are the most effective

way of gathering reliable information about the variables under investigation. The SPSS programme output was used to analyze regression coefficients.

5.2.1 To evaluate the influence of inflation rate on foreign exchange rate volatility of listed commercial banks in Kenya.

Table 4.8 above shows there is a 0.126 positive correlation between inflation and currency exchange rates. The finding is that there was an extremely weak relationship between inflation and foreign exchange, with a significance level of 0.05. Whenever the rate of inflation rises by one percent, foreign exchange rises by 12.6 percent on average, assuming all other variables remain constant. H01: Kenyan listed commercial banks' foreign exchange rate vitality is unaffected by inflation; was rejected because $0.790 > 0.05$.

5.2.2 To analyze the influence of government debt on foreign exchange rate volatility of listed commercial banks in Kenya.

Correlation table 4.9 above indicated weak positive relationship between government debt and foreign exchange of 0.162 which was not significant at 0.05. When all other conditions remain constant, this indicates that when government debt rises by 1%, foreign exchange rises by 16.2 percent. H02: Government debt has no meaningful impact on the foreign exchange rate viability of Kenya's publicly traded commercial banks; rejected because $0.680 > 0.05$

5.2.3 To analyze the influence of economic recession on foreign exchange rate volatility of listed commercial banks in Kenya.

Correlation table 4.8 shown above gave relationship results between economic recession and foreign exchange. A negative connection of -0.044 was discovered, although it was not significant at 0.05. When all other conditions remain constant, a one percent rise in economic

recession results in a 4.4 percent drop in foreign exchange. H03: Economic recession has no major impact on the viability of Kenya's listed commercial banks' foreign currency rates, was rejected because 0.976 > 0.05.

5.2.4 To evaluate the influence of monetary speculation on foreign exchange rate volatility of listed commercial banks in Kenya.

Correlation table 4.9 above showed weak negative correlation between monetary speculation and foreign exchange of -0.189 which was not significant at 0.05. When all other things remain constant, this indicates that when monetary speculation rises by one percent, foreign exchange falls by 18.9%. H04: Monetary speculation has no meaningful impact on the viability of Kenya's listed commercial banks' foreign currency rates; rejected because 0.571 > 0.05.

5.3 Conclusion

Several empirical investigations have been undertaken in countries where the results, such as Wong, Wong and Leung (2015); Opaluwa, Umeh, and Ameh (2015); Gachua (2016; Owoeye and Ogunmakin, 2016; Adetayo, 2017). Cherop (2015), Ambunya (2016), Maina (2015), Gachua (2016), Musyoki, Pokhariyal, and Pundo (2012), Ruto and Ondiek (2017), and Wanjau (2016) and it's from these investigations whereby researcher discovered a gap which contributed to the current study. As a result, the current study narrows the gap by determining the impact of macroeconomic variable volatility on commercial bank financial performance in Kenya.

The current study found a 0.126 positive link between inflation and foreign exchange rate. The conclusion is that there was a very weak relationship between inflation and foreign exchange, with a significance level of 0.05. When the rate of inflation rises by one percent, foreign exchange rises by 12.6 percent on average, assuming all other variables remain constant.

Correlation table 4.8 in chapter four the weak positive association between government debt and foreign exchange was 0.162, and that was not noteworthy at 0.05. When all other conditions remain constant, this indicates that when government debt rises by 1%, foreign exchange rises by 16.2 percent.

Correlation table 4.8 in chapter four presented the results of the relationship between economic slump and foreign exchange. Negative relationship was revealed of -0.044 which was not significant at 0.05. When economic recession rises by a percentage of one, foreign exchange falls by 4.4 percent whenever all other conditions are held constant. The same data revealed a -0.189 weak negative association between monetary speculation and foreign exchange, that was not statistically significant at 0.05. When all other things remain constant, this indicates that when monetary speculation rises by one percent, foreign exchange falls by 18.9%..

5.4. Recommendations

After the analysis and interpretation of the data acquired, recommendations were produced from the study goals, which were ruled by the research findings. The researcher advises the following based on the findings of the study data analysis and hypothesis testing:

It is critical to emphasize the need of sensible macroeconomic policies in order for a country to get the greatest advantages from commercial banks. To enable Kenyan financial institutions to reap maximum benefits and overcome the present economic crisis, interest and rate capping should indeed be removed, and new ways to deal with obstacles such as inflation and interest rates should really be devised in conjunction with appropriate monetary laws to ensure macroeconomic stability.

5.5 Suggestions for Further Studies

For future research, it is advised that another study on commercial banks be undertaken, with some variables removed, to check if the regression model can cover 70% and beyond. Further research can also incorporate secondary and primary data then compare the outcomes before drawing conclusions about the study. Other aspects to consider are rate capping, asset liquidity, and how microfinances impact commercial bank earnings, as well as the impact of CRB listing on lending, particularly during the COVID-19 period.