EFFECTS OF INTEREST RATE CAPPING ON THE FOREIGN EXCHANGE RATES IN KENYA: CASE STUDY OF COMMERCIAL BANKS LISTED AT NAIROBI SECURITIES EXCHANGE (NSE)

BY

FREDRICK NGURE NDAMBIRI

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SUMMER 2019
EFFECTS OF INTEREST RATE CAPPING ON THE FOREIGN EXCHANGE RATES IN KENYA: CASE STUDY OF COMMERCIAL BANKS LISTED AT NAIROBI SECURITIES EXCHANGE (NSE)

BY

FREDRICK NGURE NDAMBIRI

A Research Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SUMMER 2019
STUDENT’S DECLARATION
I declare that this work is original and it has not been submitted for academic credit to any other college, institution or university.

Signed: ______________________   Date: ______________________
Fredrick Ngure Ndambiri (ID No 647902)

This project report has been submitted for assessment with my approval as the chosen supervisor.

Signed: ______________________   Date: ______________________
Dr. Francis Mambo Gatumo

Signed: ______________________   Date: ______________________
Dean, Chandaria School of Business
ABSTRACT
This research project investigates the effect of interest rates capping on the foreign exchange rate in Kenya. This inquisition sought to follow-up on the aftermath consequences with the amendment of the Banking (Amendment) Act of 2016, whose enactment set a ceiling for the interest rates charged on loans. This report looks into the effect of interest rates capping on the foreign exchange rates. The specific objectives of the study included; examination into the effect of interest rates capping on the foreign exchange rates, and assessment into the effect of interest rates capping on the foreign exchange trade volume.

The study employed quantitative research design using a correlational research approach, which was found to be viable in utilizing quantitative data in explaining a complex phenomenon such as the effects of monetary policies like setting a ceiling for the interest rate. The primary units of analysis included the listed commercial banks in Kenya. The study used financial statements obtained from the Central Bank of Kenya and the audited financial statements from the identified commercial banks, for the past two years, ever since the Kenya Banking Amendment Act of 2016 came into force. The main interest of focus was the monthly interest rates, the monthly exchange rates and the foreign exchange trade volume for the financial year, 2017/2018. Inferential statistics, through adoption of linear regression was used to make causal relationships between interest rate, exchange rate and foreign exchange trade.

The study established moderate positive correlation coefficient, recording an r-value of 0.438 between interest rates and exchange rates. Furthermore, the study found that interest rates account for 19.2% in the variability of the exchange rate. The findings also show that a marginal unit change in exchange rates for every unit change in interest rates. The study also established that there exist a negative correlation coefficient between interest rates and foreign exchange trade volumes. The findings revealed a correlation coefficient r-value of -0.946, which indicates a strong negative correlation and subsequently establishing that, interest rates account for an overwhelming 89.5% in variability for the foreign exchange trade.

The study concludes that Interest rates capping sets a ceiling on the levels of projected margins for the credit financing which contributes to much leaner spreads hence limiting returns for the traditional funded income and less finance for the foreign exchange trade.
Further, the study concludes that interest rates capping wields a negative impact on the foreign exchange trade volume.

The study recommends for review and amendment to the monetary regulatory framework which will focus on scrapping the set ceiling for the interest rate. The study also sets a recommendation for an introduction of regulatory mitigation policies to shield commercial banks from direct radical regulatory interventions by the national government in unplanned manner. Finally, the study recommends that in future, clear consultative framework should be designed to enable consultation between the government and the private sector before the introduction of such radical reforms like the interest rate capping regulation.
ACKNOWLEDGEMENT

First, my gratitude goes to our Almighty God for His mercies and grace and for giving me confidence and encouragement laced with strength, knowledge and vitality that has guided me throughout my academic journey which concluded with making this research project a reality.

Secondly, I wish to express my sincere gratitude and very special thanks to my graduate supervisor, Dr. Francis Gatumo, for his immeasurable guidance, support, encouragement and time input that has given me without which this research project would not have been the same.

Finally, I extend sincere appreciation to my classmates and staff at the United States International University-Africa, and my colleagues at work for the assistance they extended to me in one way or the other during the period of undertaking my graduate studies.

May the almighty God bless them all.
DEDICATION

I dedicate this research project to my family for their inspiration, love, support and encouragement, throughout my academic journey. Thank you very much. May the Almighty God bless you abundantly.
# TABLE OF CONTENTS

STUDENT'S DECLARATION ................................................................. ii

ABSTRACT .................................................................................................. iii

ACKNOWLEDGEMENT ........................................................................... v

DEDICATION .............................................................................................. vi

LIST OF TABLES ......................................................................................... x

ACRONYMS AND ABBREVIATIONS ........................................................ xi

CHAPTER ONE ........................................................................................... 1

1.0 INTRODUCTION .................................................................................. 1

1.1 Background of the Study ................................................................. 1

1.2 Statement of the Problem .............................................................. 4

1.3 General Objective ........................................................................... 5

1.4 Specific Objectives ........................................................................ 5

1.5 Significance of the Study .............................................................. 5

1.6 Scope of the Study .......................................................................... 6

1.7 Definition of Terms ........................................................................ 6

1.8 Chapter Summary .......................................................................... 8

CHAPTER TWO .......................................................................................... 9

2.0 LITERATURE REVIEW ...................................................................... 9

2.1 Introduction .................................................................................... 9

2.2 Interest Rate Capping on the Foreign Exchange Rate ..................... 9

2.3 Interest Rate capping on the Foreign Exchange Trade Volume ........... 16

2.4 Chapter Summary .......................................................................... 25
CHAPTER THREE ...........................................................................................................26
3.0 RESEARCH METHODOLOGY .............................................................................26
3.1 Introduction ........................................................................................................26
3.2 Research Design ..................................................................................................26
3.3 Population and Sampling Design ......................................................................26
3.4 Data Collection methods ....................................................................................28
3.5 Research Procedure ............................................................................................28
3.6 Data Analysis Methods .......................................................................................28
3.7 Chapter Summary ................................................................................................29

CHAPTER FOUR .........................................................................................................30
4.0 RESULTS AND FINDINGS ..................................................................................30
4.1 Introduction ........................................................................................................30
4.2 Demographic Data ..............................................................................................30
4.3 Descriptive Statistics ..........................................................................................31
4.4 Effect of Interest Rate Capping on Exchange Rates .........................................32
4.5 Effect of Interest Rates on Foreign Exchange Trade Volume ............................34
4.6 Multivariate Regression for Exchange Rates and Trade Volumes ....................36
4.7 Chapter Summary ...............................................................................................38

CHAPTER FIVE ..........................................................................................................39
5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS ..........................39
5.1 Introduction ........................................................................................................39
5.2 Summary of the Findings ...................................................................................39
5.3 Discussion of Findings .......................................................................................40
5.4 Conclusions ........................................................................................................43
5.5 Recommendations ..............................................................................................44
REFERENCES ..................................................................................................................46
APPENDICES ..................................................................................................................57
APPENDIX I: MARKET CAPITALIZATION OF THE LISTED COMMERCIAL BANKS ..................................................................................................................57
APPENDIX II: VARIABLES MINIMUM, MAXIMUM, MEAN, STD. DEVIATION AND SKEWNESS ..................................................................................................................57
APPENDIX III: DESCRIPTIVE STATISTICS MEAN, MEDIAN, MODE AND SKEWNESS ..................................................................................................................58
APPENDIX IV: RESEARCH AUTHORIZATION LETTER ..........................................................................................59
APPENDIX V: NACOSTI RESEARCH LICENSE ..................................................................................60
LIST OF TABLES
Table 3.1 Tabulated Exchange Rates (KSH vs USD) ..........................................................27
Table 4.1 Market Capitalization of the Listed Commercial Banks .................................30
Table 4.2 Descriptive statistics for the Indicative Rates Variables ..............................31
Table 4.3 Model Summary for Interest Rates and Exchange Rates .............................33
Table 4.4 ANOVA for the influence of Interest rates on exchange rates ......................33
Table 4.5 Coefficient for Interest Rates ........................................................................34
Table 4.6 Model Summary for Interest Rates and FX Trade Volume .......................35
Table 4.7 ANOVA for Interest Rates and FX Trade Volumes .....................................35
Table 4.8 Coefficients table for exchange rates and financing decisions ....................36
Table 4.9 the Model Summary for the Multivariate Regression ..................................36
Table 4.10 ANOVA for Multivariate Regression ..........................................................37
Table 4.11 Coefficients for Independent and Predictor Variables ...............................37
ACRONYMS AND ABBREVIATIONS

CBK : Central Bank of Kenya
CBR : Central Bank Rate
CDS : Central Depository System
CPI : Consumer Price Index
ETS : Electronic Trading System
ERD : Exchange Rate Depress
KBRR : Kenya Banks Reference Rate
KNBS : Kenya National Bureau of Statistics
RER : Real Exchange Rate
ROE : Returns on Equity
ROI : Returns on Investments
CHAPTER ONE

1.0 INTRODUCTION
1.1 Background of the Study

The advance in technology has been a fundamental driver in the global businesses processes in the financial sector (Amenawo, Riman & Akpan, 2016). This has been central in affecting international trading, through the reliance on electronic platforms. Foreign exchange trading involves a chain of numerous financial systems linked through sophisticated electronic platforms, enabling the players to accrue optimal operational benefits considering the opportunity it presents in reaching a global marketplace (Getachew, 2015). The foreign exchange market portends to be the largest financial market in the world; more so, large banks are the greatest players in this market. The greatest volume of currency is traded in the interbank market. This is where banks of all sizes trade currency with each other and through electronic networks. Large banks account for a larger percentage of total currency traded in the international financial markets.

Banks facilitate foreign exchange transactions for clients and conduct speculative trades from their own trading desks (Amenawo et al., 2016). The primary revenue stream for commercial banks is the returns accrued from the lending portfolio (Ahmed, 2015). The revenues generated from lending operations are channeled towards other revenue generating operations such as the foreign exchange trading. The returns gained from the lending portfolio are subject to the interest rates charged for all the credit products (Lagat & Nyadama, 2016). Any shifts in the interest rates component impact a simultaneous outcome on the lending portfolio. Inadvertently, the performance of the lending portfolio subject to shifts in interest rates would impact on the commercial bank's investments in the foreign exchange trading (Getachew, 2015).

Commercial banks charge higher interest rates to riskier borrowers in anticipation of defaults, as such interest rate accounts for loan loss provisions in the decomposition (Maina, 2015). The interest rate also accounts for overhead costs, taxes, and required reserves, all the above are factors that contribute to higher spreads (Hamid, 2011). In addition, overhead costs are those attributable to loans, which are identified by calculating the share of loan interest revenue in total revenue. Thus, shifts in interest rate spread margins would impact on the volumes commercial banks commit for foreign exchange
trading. Profit margin is a residual after adjusting for loan loss provisions, the tax rate, reserve requirements, and overheads (Hassan & Khan, 2010).

Studies by Demigurc-Kunt and Huizinga (1999), Demigruc-Kunt, Laeven and Levine (2003), and Tennant (2006), asserts that increase in reserve requirements are associated with a growth in interest rate spreads since banks pass on the cost of holding unloanable funds to consumers via an increase in lending rates or a reduction in deposit rates. However, reserve requirements relative to the size of the spread were small for the Organization for Economic Co-operation and Development account for less than 10% of the average spread between the periods 1991 to1996 (Maina, 2015). Martin (2010), while making a comparative analysis estimated that 50% of the spread is attributable to reserve requirements, based on the zero-profit methodology. The level of country risk was a key factor that boosted spreads as severe sociopolitical instability in the Solomon Islands was a key factor behind commercial banks ‘high spreads (Zikmud, Babin & Griffin 2010). Further, a weak legal system contributed to the accumulation of nonperforming loans in Kenya, which in turn pushed up lending rates and increased net interest margins (Ngugi, 2001).

In line with Mishkin (2008), the alternate rate of the foreign money wherein a portfolio holds the bulk of its investments determines that portfolio's real return. Because of this, declining trade rate decreases the purchasing strength of income and capital gains derived from any returns (Okoth, 2013). Furthermore, the currency exchange rate fee affects other earnings elements including interest charges, inflation or even capital profits from home securities. Even as alternate quotes are decided via several complicated factors that frequently leave even the most experienced economists flummoxed, traders need to still have some knowledge of the way currency values and trade rates affect the rate of return of their investments.

Currency exchange prices are determined by the forces of demand and supply. Otuori 2013 notes that in some countries, forex rates are extensively used to determine the balance of payment. Levich (2001) observed that no theory expressly determines the exchange rate, however, Eiteman et al (2001), explained exchange rates are largely influenced by developments, direct investments, political climate, and the prevailing exchange rate between two nations. The exchange rates are not constant but change with
time, but consumer prices are more stable since the supply chain and shoring up currency stabilizes the prices (Okoth, 2013).

Inflation forms a central factor in determining the lending rates of commercial banks (Chioma, Adamna & Clementina, 2014; Omondi, 2014). According to Chand (2008), inflation depreciates the value of money such that a percentage increase in inflation results in a similar percentage fall in the value of the country's currency. Fall in the value of national currency exposes it to more pressure from other stronger international currencies, notably; the US Dollar, British Pound, Euro etc. Chioma et al (2014), observed that the primary performance measure that is used by commercial banks is the profitability ratio. It is all about how inflation affects profit levels and how profit level influences the investment decision of banks vis-à-vis lending. Profitability in the banking sector has been extensively examined in developed countries, especially in North America and Europe (Chioma et al., 2014).

The external debt in Kenya is denominated in foreign currency of the US dollar, British Pound and Japanese Yen with the dollar having the highest percentage (Odera, 2015). The Kenya shillings depreciation against these currencies especially the US dollar corresponds with external indebtedness. The financial data indicates that the Kenyan Shilling depreciated by 13.9% against the US dollar from 14.4% in 1984 to 16.4% in 1985 and averaged 16.4% during the period 1985-1987 while the debt indicators debt to GNP ratio and debt to exports ratio rose over the same period. Similar trends were repeated during the 1990- 1993 when the Kenya shillings depreciated by 150% from KSH. 22.9 in 1990 to KSH. 58.0 in 1993 and 1999-2000 where the shilling also depreciated by 26.1% from KSH. 61.9 in 1998 to KSH.78 in 1999.

Cytonn (2017) evaluated the past instances, through which attempts were made to influence the interest rate capping. Cytonnn noted that in 2001, there was an attempt to amend the CBK Act and cap the lending rates at 4.0% above the 91-day T-bill and the deposit rates at 4.0% below the 91-day T-bill, bringing the spread to 8.0%. Also in 2013, the Kenya Parliamentary Budget office proposed the pegging of the deposit rates to the lending rates. In both of the attempts to impose regulatory restrictions, resulted in a negative impact on the performance of the financial sector.
The Banking (Amendment) Act of 2016 was passed by the parliament of Kenya on July 28th, 2016 and was eventually enacted on 24th of August, 2016 after being accepted into law by President Uhuru Kenyatta. The exchange market rate on 25th July 2017, 30 days before the enactment of the interest rate caps was as follows; The exchange value for KSH versus the US Dollar, the purchase was at KSH. 101.4478 and Sell value was at KSH. 101.6422 (CBK, 2016). This indicates that the exchange rate was at 0.19% gain value in basic trade volumes. The average trade value on the 25th of July 2016, was KSH. 101.5450. The trade values on 23rd September 2016, for KSH versus the US Dollar, 30 days after the implementation of the Banking (Amendment) Act of 2016, was as follows; Purchase, KSH. 101.1128 and Selling at KSH. 101.3072, this represents an average trading mean value of KSH. 101.2100 (CBK, 2016). The average exchange rate, on 23rd of September 2016, indicated a reduction in the mean trade exchange rate, by 0.33%, underscoring a reduction in gains generated from foreign exchange trade after the implementation of the interest rate caps.

1.2 Statement of the Problem

Commercial Banks identify foreign exchange trading as one of the vital revenue contributor and an important component of bank revenue diversification. Exchange rates are subject to numerous fiscal factors both internal and external (Miller, 2013). Commercial banks primary source of revenue is through the lending portfolio, where banks assign interest on the borrowings advanced to credit products (Cytonn, 2016). This means that banks primary revenue stream are significantly reliant on the existing interest rates, from which they determine how much they can pay depositors and subsequently how much they are likely to generate when they charge borrowers (Kimani, 2016; Miller, 2013). The revenues from which the commercial banks generate from its primary credit transactions, contribute to the capital investments that commercial banks advance in their foreign exchange trading. With restrictions set for interest rates, it's likely to affect the primary bank's operations and subsequently impact on its revenues (Cytonn, 2016; Olaka, 2017). There is little knowledge as to what will be the impact of interest rate caps on the foreign exchange trade volumes by commercial banks.

Hassan and Khan (2010) carried out a study on the influence of interest rates changes on the investment options for commercial banks. They established that as lending rates go up, banks on average attract a riskier pool of projects that require higher returns on
investment. The further explained that higher interest rates force many creditworthy borrowers to opt out of borrowing, which negatively impacts on the commercial bank's credit portfolio. Ndung'u (2012) investigated the environmental variables that impacted on Foreign exchange trading among the commercial banks. Kenya's Banking (Amendment) Act of 2016 capped the interest rate at 4% of the indicative Central Bank Rate (CBR). This marked the most comprehensive change in the local trading policies at an unprecedented level. There has been no clear picture as to what was the impact of the interest rate capping on the foreign exchange trade volumes, hence necessitating the need for this study. This study investigated the effects of interest rate capping into the foreign exchange trade volumes in Kenya by listed commercial banks.

1.3 General Objective

The general objective of this study was to investigate the effect of interest rate capping on the foreign exchange rates in Kenya.

1.4 Specific Objectives

The study was guided by the following objectives;

1.4.1 The study sought to determine the impacts of interest rate capping on the foreign exchange rates in Kenya.

1.4.2 The study sought to evaluate the effects of interest rate capping on the foreign exchange trade volumes in Kenya.

1.5 Significance of the Study

The findings of this study will benefit the following;

1.5.1 Kenya Bankers Association

The enactment of the Banking Amendment Act of 2016 signified a radical change in the financial sector in Kenya. A surmountable portion of commercial bank activities involves lending services which are subject to interest rates in the market. The Kenya Bankers Association (KBA) will benefit from this study as it will highlight the grey areas in operating with a restricted market environment. The study will offer recommendations
that will likely to assist the KBA in building a sustainable framework to enable them to survive under the regulatory changes.

1.5.2 The Government

The findings of this study will offer insights into the impacts of interest rates capping on the foreign exchange trade in Kenya. The findings of this study will help in offering academic input into the potential impacts of capping interest rates in the country and the consequences of the currency value in trading against other global currencies. This will go a long way in offering the policymakers in government evidence that they can use in formulating regulatory framework which impacts of the financial sector in relation to the foreign exchange market in Kenya.

1.5.3 Researchers and Academicians

The findings of this study will add knowledge into the subject of interest rates capping and the subsequent outcome in the performance of the foreign exchange market. The findings will also offer important resource amongst the researchers in financial markets as it will open a new discussion on the impacts of government control of the financial sector on the performance of local currency against the international currencies in the foreign exchange trading.

1.6 Scope of the Study

The study focused on the commercial banks that are listed at the Nairobi Securities Exchange (NSE). The study was limited to the factors that influence exchange rate determination notably; interest rate spread, interest rates listed at the capital markets for at least 3 years. The study examined the exchange rates fluctuations and trade volumes for a period of 24 months, from June 2016 to June 2018.

1.7 Definition of Terms

1.7.1 Interest Rate Spread

Interest rate spread is the difference between what a bank earns on its assets and what it pays on its liabilities (Ngugi, 2001).
1.7.2 External debt

Refers to all the unpaid portion of external financial resources which are needed for development purposes and balance of payment support which could not be repaid as and when due (Emmanuel, 2013).

1.7.3 Interest Rate/Lending Rate

In this study the interest rates represents the independent variable. The interest rate refers to the rates paid by the borrower for the use of money that they borrow from the lender. Interest rates are normally expressed as a percentage rate over the period of one year. (Marcus, 2012)

1.7.4 Exchange rate

In this study the exchange rates represents the dependent variables. The exchange rate can be defined as the value of a foreign nation's currency in terms of the home nation's currency (Calvo, 2006).

1.7.5 Trade Volumes

In this study the foreign exchange trade volume represents the dependent variable. This is the number of successfully completed transactions in a day of trading across the foreign exchange market between buyers and sellers (Galati, 2000).

1.7.6 Foreign Exchange Risk

Foreign exchange risk is the risk that an entity will be required to pay more (or less) than expected as a result of fluctuations in the exchange rate between its currency and the foreign currency in which payment must be made (Hommel, 2008).

1.7.7 Inflation rates

In this study inflation represents the dependent variable. Inflation rates are the recorded charge in consumer prices within one year in comparison to the previous year (Miller, 2013).
1.8 Chapter Summary

This chapter presents the background of the study, the statement of the problem, the objectives of the study, significance and the definition of key terms. Next section is chapter two, which presents the empirical literature review, where previous studies will be reviewed on the subject of interest rates capping and foreign exchange rates. Chapter three examines the research methodology that was used in the study. Chapter four covers data presentation and analysis, and finally chapter five covers the summary of the main findings, discussion of the findings, the conclusions of the study and finally presents the recommendations of this study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction
This study seeks to evaluate the influence of interest rate capping on the foreign exchange rates in Kenya. This section of the study covers the literature review which encompasses the extensive overview of the study topic by highlighting past studies carried out on the topic by previous scholars. The Chapter shall evaluate the past writings on the interest rates factors including; past studies on interest rate spread, exchange rates, external debt, and inflation and their impact on foreign exchange trade.

2.2 Interest Rate Capping on the Foreign Exchange Rate

According to Calvo (2006), the foreign exchange rate is the estimated value of the currency in terms of the domestic currency. This simply means that the exchange rate can be equated with the amount which the local currency can purchase for a single unit. The commercial banks play a central role in the execution of the foreign exchange rates. Wong et al. (2008), acknowledge that any change in the domestic markets macroeconomic variables wield a strong impact in the shifts of foreign exchange rates with the ability to negatively affect overall bank performance.

Foreign exchange primarily means the conversion of currencies from one type to another (Ahmed, 2015). Foreign exchange trade takes place around the clock which means that it's a virtually non-stop process. Common currencies in terms of trade volumes per day include the US Dollar, The Euro and the Japanese Yen (Pugel, 2007). Transactions over the foreign exchange trading form an important component of the financial sector operation which is the largest and the most sophisticated in the entire world (Lagat & Nyandema, 2016). Bergen (2010) examined the factors that influence exchange rates and found that interest rates, inflation, and exchange rates are all highly correlated. According to Bergen (2010), by manipulating interest rates, central banks can exert influence over both inflation and exchange rates, and changing interest rates impact inflation and currency values. Higher interest rates offer lenders in an economy a higher return relative to other countries. Therefore, higher interest rates attract foreign capital and cause the exchange rate to rise.
2.2.1 Interest Rate Spread and Financial Environment

According to Ahmed (2015), foreign exchange rate movements form a critical risk to banking institutions. Ahmed explained that in the worst case, large foreign exchange losses contribute to bank failures (2015). Changes in foreign exchange stocks put reduce the ability of banks to generate profits Owoeye and Ogunmakin (2013). Using loan loss to total advances ratio and capital deposit ration, the scholars examined the impact of fluctuating exchange rates on the profitability of banks in fixed models recommend that the effects of rate of exchange on bank profitability are sensitive to the kind of proxy accustomed capture bank performance. Loan loss to total advance quantitative relation shows that unsteady rate of exchange could have an effect on the flexibility of lenders to manage loans leading to high levels of unserviceable loans whereas capital deposit quantitative relation doesn't have a vital relationship with cash rates of exchange.

In their study, Pattnaik and Mitra (2001) noted that interest, inflation, and forex rates are connected. Central banks use interest rates to control inflation and forex rates. Research by Bhole and Dash, (2002) tried to establish the correlation between rates charged on interest and currency exchange rates in India. In their evaluation, the scholars found the interaction between the interest rate and the exchange rate has been a subject of debate for a long time among economic scholars. The Mundell-Fleming theory explains that an increase in interest rates can make the exchange rates as well as depreciation to stabilize and avert major economic consequences.

Ani, Ugwunta, and Okanya (2013) carried out an investigation reforming forex rates affects found that reforming exchange has a negative impact on the Nigerian financial market. The scholars hold the premise that financial sector liberalization can have a positive impact on the economic growth. The argument indicates that even after undertaking exchange rate reforms, the local economy failed to pick up and stabilize the exchange rates enough to attract foreign investments or stop capital flight. Nigeria's Naira has not sufficiently increased in value like other currencies in the financial market. The scholar's findings indicate that financial reforms can generate an economic boom in the short run but not sufficient to last for a longer period. Ani et al. (2013), noted that Nigeria's economic situation indicate that financial reforms can fail to generate the desired results despite the fact that financial reforms can lead to positive economic development.
Rasaq (2013) submitted that the exchange rate is a crucial economics variable that is employed as a parameter for deciding international aggressiveness and therefore it's considered an indicator of aggressiveness of currency of any country. The rate of exchange commercialism is a crucial issue to banks as interchange financial gain, commissions and charges from interchange operations have been thought of one if the vital income sources to financial institutions (Manyo, Sabina & Ugochukwu 2016). In-depth evaluation of banks activities indicates that banks rely on the difference between rates as their stock in trade. Babazadeh and Farrokhnejad (2012) noted that banks capitalize on exchange rate fluctuations and speculate on its value with the aim of making profits.

Owoeye and Ogunmakin (2013) observed that exchange rates have an influence on interest rates which consequently affects profitability through the cost of loans. Higher Forex rates boost the returns banks expects to gain from disposing of foreign currency. High-interest rates affect the demand for loans but have the capability to increase revenues (Sayedi, 2013). The variables pointed out though uncontrollable have a big impact on the bank's revenues and maybe as a result of government regulations imposed on the banking sector. According to Ojo and Alege (2014), the exchange rate directly affects the prices or the profitability of trading stock which the commercial banks use to speculate and earn revenues.

According to Razi, Shafiq, Ali, and Khan (2012), commercial banks play a critical role as brokers in financial transactions besides monitoring how currency rates fluctuations can affect the bank's profits. The authors further observed that Forex rates have largely affected the profitability of business entities dealing with foreign direct investment hence have the capacity to bring in uncertainty and risks to forex trading. Wong, Wong, and Leung (2008) argued that large foreign exchange losses brought about by foreign exchange rate fluctuations pose a risk to is a source of risk to financial institutions placing a big burden on commercial banks profitability.

### 2.2.2 Determination of interest Rate Spread and impact on foreign exchange trade

Manyo et. al. (2016), observed that in order to accommodate profit-making ventures, financial institutions and their employees should have extensive knowledge on the bank's profiteering from its foreign exchange dealings The banks should be in a position to evaluate risks involved in Forex trade as the required amount of funds they should have in
their foreign exchange reserves support their banking operations and create wealth for shareholders. Therefore, continued fluctuations of the rate of exchange on the competitiveness of the domestic zone in relation to foreign markets. The move allows the banks to gauge the risks and uncertainties emanating from unexpected changes in local and international economic environment (Ahmed, 2015). The studies by Ahmed (2015) and Manyo et al. (2016), didn't elaborate the estimated quantitative effect of trade volume changes as an outcome of significant changes on the regulatory framework on primary market rates, specifically the interest rates.

Getachew (2015) posited that shifts in exchange rates wield concurrent effect on the national economy and the performance of players in the financial sector such as investment firms and commercial banks. Charles (2006) established currency exchange rate is a vital economic fine-tuning tool and is also a complex economic planning tool. The study maintains that a decrease in the rate of exchange cushions the local economy when the cost of production escalates at a lower rate than the depreciation cost, even as the prices of imports grows equal to the full cost of depreciation. Obadan (2006) defended the role that rates of exchange plays in connecting the price system across nations thus helping investors to compare the prices of stocks easily. Exchange rate fluctuations impact imports and exports by altering the price of goods and services

Adesola and Taiwo (2013) noted that favorable exchange rate strategies must be directed at stabilizing the real exchange rate (RER) which preserves the internal and external stability in an economy. The internal balance is economic here is defined in terms of the level of economic actions aimed at satisfactorily taming inflation while full utilization of resources. On the other hand, external stability refers to efforts towards having sustainable current account deficits and payment balances for a lasting flow of capital. Any changes in RER can lead to changes in external and internal balances. Commonly, the exchange rate has vital effects on international trade since a stable internal and external balance in the economy and acts as a tool of economic regulation

Uncertainties and exchange rate volatility expose the national economy to financial risks (Getachew, 2015). According to Sabri (2011), observed that foreign exchange is in jeopardy when commercial banks hold assets and liabilities in currencies of other nations. The move also affects the bank's capital as well as revenues occasioned by volatile rates of exchange. Rates of exchange can either increase or decrease at any given time. The
unpredictable movement of exchange rates affects the commercial bank's revenues. The direct foreign exchange risk can be either Transactional or it can be Translational. Transactional risk occurs when transactions occur in foreign currencies while translational risks occur when the value of the assets held in foreign currencies are translated into the local currency. The indirect exchange rate risk emanates from economic exposure which reflected through demand for a bank loan and the bank loan performance. There, the exchange rate is a critical foreign exchange trade factor that yields a significant impact on the national economy. Getachew (2015) recognizes that government policies on credit rates, such as capping or the liberalization of the financial sector should be resolute to protect the economy from the exposures to global financial trading. The studies fail to demonstrate the significant risk exposure to the actual exchange rates in the market in times where the basic rates were under regulatory controls.

According to Okoth (2013), inflation is a critical indicator that highlights the health of an economy. Practically, the inflation can be split into two parts related to demand (demand pull inflation) or supply (cost-push inflation). According to Edwards (2002), counties with open economy face inflation issues emanating from local and international factors. Duarte & Stockman (2002) noted that low inflation rates stimulate increasing currency rates since the buying power of the currency increases when measured up against other currencies. Okoth (2013) observed that the causes of external factors are the increase in the global goods costs or unstable rate of exchange. The effects of currency exchange rates on inflation are based on the choices of foreign exchange policies in a country. The prevailing exchange rate regime plays an important role in reducing or lowering the risks of unstable rates of exchange that can affect the economy (Eichengreen, 2004).

Fraga, Goldfajn, and Minella (2003) observed that Inflation is the concept that is utilized in explained the increase of averages prices in the economy an indicator that money is losing its value Currency loses value due to inflation and when the demand of goods outstrips the supply. The scenario commonly takes place when an economy is experiencing shortages of labor and raw materials making people demand higher prices for similar commodities. People can charge higher prices for the same goods or services. Rising costs of imported commodities like oil can cause inflation.
The relationship between the interest rate and the level of inflation also known as the Fisher effect or the Fisher hypothesis can be traced to Irvin Fisher. According to Bacigalupo (2007), the Fisher effect explains the reason behind the changes in interest rate can be attributed to changes in the purchasing power of money. It states that the nominal interest rate is made up of the real interest rate and expected inflation. The nominal interest rate compensates for the loss in value of purchasing power of money due to inflation. The implication is that the nominal interest rate reflects market information concerning fluctuation in purchasing power of money. When inflation is high the purchasing power of money falls at the initial rate of nominal interest. The rational economic agents, therefore, are obliging adequate compensation for any erosion of their purchasing power as a result of an increase in general price level (Cheon, Kim & Podivinsky, 2010).

According to Kwame (2012), the connection between inflation uncertainty and interest rates has several theoretical explanations. The interest rate is one of the vital indicators in the transmission mechanism of inflation uncertainty on economic performance. In a situation of high-interest rates instigates fall in output by decreasing consumption and investment. More importantly, for many emerging economies, where debt sustainability is a problem, higher interest rates increase the debt burden and destabilize the financial system by leading to massive capital outflows (Blanchard 2003).

Cheong et al., (2010) observed that there have been mixed reactions by economists about the relationship between inflation uncertainty and interest rates from both theoretical and empirical points of view. One group has come up that there is an inverse relationship between inflation uncertainty and nominal interest rates. When inflation uncertainty exists in an economy, it reduces investment and savings of risk-averse economic agents and put downward pressure on both demand and supply of loanable funds. If the decrease in the demand for loanable funds is larger than the reduced savings in the supply side, the nominal interest rates at equilibrium are lowered. Otherwise, the reverse also holds. Others are of the view that when there is inflation uncertainty, risk-averse investors who dominate the market of loanable funds simply add a risk premium to the nominal interest rates to compensate for the increase in inflation uncertainty.

According to Arabi (2010), Cheon et al. (2010), and Okoth (2013), inflation leaves severe repercussions on several aspects. First, the population suffers if the prices of goods and services increase while their income remains constant. Second, inflation affects the value
of investments if revenues are too low to counter the rising inflation can reduce the value of an investment if the returns prove insufficient to compensate them for inflation. Third, inflation causes intermittent economic boom over a period of time due to the volatile economic situation. Long-term inflation has longer effects on the economic situation of a country. If money is losing its value, businesses and investors are less likely to make long-term contracts. This discourages long-term investment in the nation’s productive capacity.

Kwame (2012) explained that interest rate highlighted the financial shifts in prices paid by a borrower to account for the opportunity cost lost by the lender after loaning out the capital. Interest rates also represent the returns a lender hopes to get by parting with the liquidities. The interest rates cut both ways since when it increases holders of excess funds expect to reap more by lending the idle resources to investors for higher returns at a later date. Consequently, high-interest rates turn away borrowers. In an equilibrium status, the interest rates will equal the demand and supply in the market. Deutsche Bundesbank Report (2001) acknowledge that RER is a crucial determinant of saving and the Real interest rate is an important determinant of saving and investment behavior of companies and individual citizens.

Heidari and Bashiri (2010) observed that the rate of inflation has far-reaching implications for the performance of the economy. The higher rate of inflation reduces aggregate demand, production, employment, trade deficits and balance of payment as suppliers of funds for booming economic divert their resources into an interest yielding activities. In other instances, medium to low inflation rates spurs economic activities like production hence raising GDP, increase employment and stabilize the balance of payment issues (Obi, Nundeen & Wafure 2009). According to Vale (2004), the relationship between inflation and economic growth comes from a framework that has two assets: money and capital. An increase in the return on money would lead to a decrease in the capital (investment) portfolio since they are substitutes in household portfolios. In other words, a high inflation (a fall in return of money) impacts positively on capital accumulation and consequently leads to growth.

Arabi (2010) links inflation uncertainty and output growth positively. That is when there is a high uncertainty about monetary growth and therefore inflation, it makes a return on real money balances uncertain, which leads to a decrease in demand for real money
balances and consumption. Therefore, economic agents would increase precautionary savings by making funds available for investment and hence output growth. Availability of funds for investment is not the only factor that promotes output growth in an economy. When other output growth promoting factors can also affect growth in an economy. Obi et al (2009) examined Fisher effect in Nigeria and concluded that the relationship between interest rates and inflation hold in the short-run but holds in the long-run in its weak form between the periods, 1970-2007, which confirmed Berument, Kilinc, and Ozlale (2007). They used the co-integration and error correction method. Mitchell-Innes (2008) also investigated whether there is a link between nominal interest and inflation rates in South Africa during the period of inflation targeting (2000-2005). The result suggested that the Fisher hypothesis does not hold in the short-run but there is a co-integration between inflation and interest rates which is not one to one. The attributed the reason on the South African Reserve Bank (SARB) to the cause of the problem. The reason was that SARB has the mandate of stabilizing the economy of which short-run interest rate is controlled. Mitchell-Innes (2008), used three months bankers' acceptance rate and ten-year government bond to proxy for short and long terms interest rates respectively. The relationship was tested using Johansen's co-integration test. Although different periods and models were employed in South Africa for investigating the validity of the Fisher hypothesis, all confirm each other's result.

Studies by Arabi (2010) and Vale (2004) have failed to highlight the role of interest caps in shifting inflation rates for the economy, even external to stringent market regulations for the financial sector. The studies by Cheon et al (2010), Kwame (2012) and Obi et al. (2009) were all conducted in a different context and wielded different conclusions on the role of interest caps in commercial banks strategies in market liquidity for an uncertain inflationary effect. Like the study, the studies fail to capture a comprehensive inferential reference in different contexts like Kenya, where market caps were recently introduced.

2.3 Interest Rate capping on the Foreign Exchange Trade Volume

Foreign exchange trade volumes can be defined as the number of transactions completed in a single day of trading across the foreign exchange market between buyers and sellers (Galati, 2000). The literature on trading volumes goes back to decades ago, where studies by Cornell (1981), Harris (1986) and Kaporff (1987) highlighted the existence of a positive correlation between the variability in the currency values and the volumes of trade.
According to Kamunge (2013), Interest spread is the difference between bank lending defined as the difference between the lending fee and the deposit tariffs. Interest spread is not equal world over. It is contrary to the degree of effectiveness of the financial industry which is part of the competitive environment. The specific nature of financial industries is the major reason behind the interest spread across the globe. According to Jayaraman and Sharma (2003), countries with weak finance industries use intermediation costs to spur production are much larger. Independent studies by Chand (2002) and Asian Development Bank (2001), highlighted the causes for higher interest spread. Folawewo and Tennant (2008) examined the factors causing interest rate spread in 33 Sub-Saharan African countries majorly concentrating on macroeconomic factors. Their study findings indicated that interest rate spread is affected by government borrowing habits, public sector budgeting shortfalls, discount prices, inflation, money supply, reserve requirement, economic growth, and population density. Ngugi (2001) observed that the exchange rates in Kenya are largely affected by prevailing financial policies, restrictive monitory regulations, poor efficiency banks, and rising costs of. Afanasieff, Lhacer, and Nakane (2002), in Brazil, concluded that the factors most relevant to explaining interest rate spread behavior are macroeconomic variables such as inflation. Saunders & Schumacher (2000) offered evidence that uncertainty caused by inflation in banks' economic environment is one important cause of bank spreads.

2.3.1 Exchange Rate Influence on the Financial Sector and International Trading

Folawewo and Tennant (2008) in a paper prepared for the 13th Annual African Econometrics Society Conference in Pretoria, Republic of South Africa analyzed the determinants of spreads between banks' deposit and lending rates in Sub Saharan Africa countries (SSA). They found that macroeconomic policy variables such as inflation play a significant role in explaining variations in the interest rate spread in the region. Khawaja and Din (2007) concluded that a rise in inflation increases the credit risk premium, and hence the spread that banks demand, as higher rates hamper the repayment capacity of borrowers.

In line with studies carried out by Maudos & Guevara (2004; Williams (2007); Khawaja & Din (2007) on banking practices in different nations, the scholars found that administration expenditure was key in commercial bank spreads in Pakistani. Wong and Zhou (2008) and Khawaja and Din (2007), argued that the level of competition in the
Pakistani banking industry was considered the key element for banking reach. Ngugi (2001) studied factors determining interest rate spread in Kenya's banking sector for the pre-liberalization period and post-liberalization period. She found out that interest rate spread increases due to yet to be gained efficiency and high intermediation costs. Both implicit and explicit taxes widen the interest spread as they increase the intermediation costs (Ngugi, 2001).

Studies by Wong and Zhou (2008) banks interest rate margins in China established that the interest rates were affected by the operating costs. Furthermore, a study by Tennant and Folawewo (2008) determined that statutory reserve provisions, discount rate, and amount of cash supply as per the requirements of the central bank established a positive trend on interest rates in during 1988-2005 and not the banking operating costs. Research by Chirwa and Mlachila (2004) established that microeconomic fluctuations and policies exerted a huge impact on the bank on bank interest rates. The study outcome also indicated a delicate balancing act between ensuring bank solvency and lowering the cost of financial services offered to bank clients.

Kipng’etich, (2011) set out with an objective of establishing the relationship between interest rates and financial performance of commercial banks in Kenya. To achieve the objective of the study regression models were developed using financial performance as the independent variable and interest rates as dependent variables. In the model, ROE was defined as the profitability indicator. Secondary data was collected from published reports for a period of five years between 2006 and 2010. The study used regression analysis to establish the relationship between interest rates and ROE. The results obtained from the regression model shows that there is a positive relationship between interest rates and the financial performance of commercial banks in Kenya. Banks should therefore prudently manage their interest rates and other factors which influence profitability to improve their financial performance.

Hawtrey and Liang (2008) maintained that the high cost of business is connected with high-interest rate spreads charged by commercial banks in Jamaica. The aspects causing high-interest rates are dismissed by some company leaders and some policymakers as besides the point. Birungi (2005) tailored the Ho and Saunders (1981) theory to include the impact of administrative overhead. The scholar found that interest rates were affected by aggressive operating expenditure, risk mitigation employed by banks, and other
variables like opportunity costs of cash reserves, settling hidden interests rates, and the management practices.

Maudos and Guevara (2004) following on the works of Angbazo (1997) included operating costs in their model. The scholars established that the interest margins were affected by the costs of operations, risk measures undertaken by banks, opportunity costs, and interest rates repayments, and management technical know-how. The findings of the study by Williams (2007) agreed with the findings of Maudos and Guevara (2004) study that including operating costs for the case of Australia, as suggested in an earlier study on Australian bank net interest margins by McShane and Sharpe (1985). The study by Wong and Zhou (2008) on commercial banks net interest rates in China, also established evidence that supports the inclusion of operating costs on the Ho and Saunders model.

Ghasemi and Rostami (2016) rationalized that interest rate spread is a crucial economic factor in several nations over the world. Economic experts hint that efficient commercial banks with higher performance reduce their operating costs and allocate more resources to improve their market share. According to the views of Ghasemi and Rostami (2016), competition creates a more efficient and the competitive environment may create more efficient banking processes. Government regulations, as well as the legal requirements, prevent monopoly in banking which leads to improved spread rate (Ahmadian & Kyanvnd, 2015).

The high spread rate signals the problems in the banking regulatory background. This is to say that a high spread rate improves the bank's profitability, financial stability, and increased tolerance against unexpected shocks (Doliente, 2005). The study also noted that the high spread rates does not always signify the effectiveness of the banking system but tend to point to poor regulations in the banking system. Nazarian & Nejad (2010) noted that banks with poor performance always try to reduce lending rates to gain a bigger share of the market. The High spread tariff shows the presence of poor efficiency in the banking system and lack of competition in the market. On the contrary, the scholars noted that high-interest rate spread tariffs signify poor regulations and high level of distorted information besides showing the high risks associated with banking (Ghasemi & Rostami, 2016).
Siddiqui (2011) directed an investigation on the assurance of premium spread of business banks. The research tried to assess the impact of financing costs on the business banks venture choices and remote trade exchanging. The investigation utilized broad information models to inspect bank-particular determinants of financing interest spread tariffs from a sample of 14 out of 22 business banks in Pakistan from 2000-2008. Rising regulatory expenses, nonperforming credits and reinvesting profits in other areas altogether can cause an expansion in the spread of loan cost. The assessment, however, established that expanding rivalry in the Pakistani financial industry was uneven. The investigation found that noteworthy distinction in the bank's administration style supports a fixed effects model (Kamunge, 2013). Increased interest spread may prompt institutional wastefulness in a country's financial system which can restrain the commercial banks from trading more foreign stocks.

Perez (2011) evaluated the factors affecting interest rate spreads in Belize using accounting data and then sought to classify the issues affecting interest rate spreads using a panel dynamic least squares model. Perez (2011) concluded that banks market share and loans in default are two main causes of the spread. Based on these findings, the research recommended policy changes to reduce information distortion and spur competition among the Belizean financial institutions. In their study, Ng'etich and Wanjau (2011) sought to ascertain the impact of the interest rate spread non-performing loans in banks in Kenya. The study concluded that interest rate spread influenced the performing loans in banks by increasing the cost of loans, interest rate capping which has far-reaching implications on the performance of bank assets. Regulations like interest rate capping help to regularize the loaning and help alleviate moral hazards particular to nonperforming loans. The prevailing credit risk management approach affects the value of a bank's interest rates spread as interest rates are set against the associated non-performing assets which attract higher costs.

2.3.2 Exchange Rates effects on the National Economy

Evidence indicates that interest rate spread determination is based on numerous economic factors which wield significant influence on the performance of the financial sector, and the ability of commercial banks to invest in the international trade and participate in the foreign exchange trading. The World Bank in1998 evaluated the factors of the interest rate spread over 80 countries (Ghaseni & Rostami, 2016). The survey includes many
factors like variables of political economy conditions, specific and implicit tax, deposit insurance rules and customarily monetary structure and legal regulations. Researchers found that the charge per unit spread is directly littered with the ratio of net assets to total assets, the ratio of loans to total assets, bank size and overhead to total assets ratio, inflation, and short-run interest rates (Ghaseni & Rostami, 2016). The noninterest financial gain to total assets quantitative relation is reciprocally associated with the rate of interest unfolds. All mentioned variables are statistically important and growth variable of the gross domestic product appears to possess no result on the interest spread rate (Atabaki, 2006).

Matelis and Huettinger (2014) explained that external debt represents money which is borrowed by a nation from foreign lenders with a liability to pay back the debt plus interest on the debt in a using the same currency. This means that a nation which borrows money from other countries have to export goods to that country to obtain the currency (Panizza, 2008). The external debt shows the loan balance from the outstanding amount of its actual or current liabilities which needs repayment of principal at some point in the future. According to Dias (2010), loan collaterals include bonds currency, forex instruments, and cash deposits. Countries meet external loans as a source of funds which give access to resources. As a result, debt levels should be manageable for the loaned to meet its current and future loan responsibilities without straining its resources or requiring loans to be rescheduled or written off (Matelis & Huettinger, 2014).

External debt is a factor largely influenced by government policies towards development programs and financial industry. According to Matelis and Huettinger (2014), it's vital that the attitude of countries governments be aligned towards development strategy and its relation to a trade policy and capabilities that external debt could be beneficial – not a burden. The external loans give the country's the ability to change loan purpose if required. It also permits other business or foreign entities to fund the growth opportunities that will arise. Also, external debts allow nations to pay for imports, development agenda, and enable a county to achieve its development goals (Pradhan, 2009). On the other hand, external loans can lead to loss of ownership of critical assets.

Ahuja (2013) explained that the two systems that a country could operate as floating and fixed exchange tariffs. The floating exchange rate system permits the country's currency to adjust freely as determined by demand and supply of foreign currencies. The fixed
exchange rate is controlled by the government through the Central Banks which acquires and disposes of certain amounts of foreign currency to regulate the demand and supply of the commodity. Musgrave and Musgrave (2014) established that the exchange rate structure operated by a nation has the capacity to affect the stability of the country's economy. Depending on the elasticity involved, the value of the local currency compared to foreign exchange impacts the balance-of-payments, local inflation, savings, investments, and the political economy.

Nwanne and Richard (2015) cited the 1993 study by Ayayi and Jongmoo while evaluating the impact of foreign debts on the values of a currency. The research used a model which combined cash and asset feature of the rate of exchange including foreign loans, to establish the effects of foreign loans on the values of a country's currency. The study based on a sample of developing nations indicated that foreign debt had a negative impact of the currency of 12 countries under investigation. The study further revealed that foreign loans have a significant negative effect on the value of a country's currency. Foreign loans appeared to be commonly linked to capital flight and trade deficit, leading to depreciation of the local currency. However, nations like Israel and Singapore had a positive effect from foreign loans since the foreign debts stimulated high demand for domestic assets from foreign investors.

Alam and Taib (2013) investigated the relationship of external public debt (EPD) with budget deficit (BD), current account deficit (CAD), and exchange rate depreciation (ERD) by empirically analyzing panels of a group of six debt-trap countries (DTC) and eight non-debt-trap countries (NDTC). The study applied the panel OLS regression with fixed and random effects modeling (FEM and REM, respectively) to show a positive relationship of EPD with BD, CAD, and ERD with varying strength of the relationship in DTCS and NDTCS. It further showed that a strong coefficient of EPD, BD, and ERD indicated an explosive borrowing, a higher demand of EPD and heavy utilization of foreign exchange while a lower coefficient of EPD, BD, and ERD indicated less borrowing, less demand of debt and less utilization of foreign exchange. A lower coefficient of CAD suggested that borrowed funds were not directed towards, adjustment in the current account in NDTCs, signaling a prudent public debt management in NDTCs compared to DTCs.
Masaku (2014) assessed the impact of Kenya’s external debt on exchange rate changes. The study established an increasing trend in external debt and exchange rate changes. The study also established that external debt and interest rates had a positive effect on the rate of exchange while foreign assets had no impact on the exchange rates. On the contrary, inflation rate and FDI revenues had a negative and major impact on the exchange rate. The study by Masaku (2014) noted that Kenyan external debt accounted for up to 63% of the foreign exchange fluctuations. The study also concluded that Kenya’s external debt positively and majorly impacts the country’s rate of exchange.

Sene (2004) evaluated the interaction between external public debt and equilibrium RER in developing economies based on Obstfeld and Rogoff model. The study found that extended debts tend to increase RER in the end. A study by Lin (1994), evaluated the effects government debt on RER using the two-country overlapping generations (OLG) model with production and found that increases in government debt reduce the RER of a country. In addition, Ogege and Ekpudu (2010) explained that the rise in external debt negatively impacted the performance of the national economy, which affects negatively on the financial sector and also the foreign exchange trade.

Cook and Devereux (2005) conducted a study on the influence of the capital inflows from external sources on the fixed exchange rates and how it impacted on the fiscal policy. The study investigated whether government incentive in the capital market through implicit and explicit borrowing guarantees and subsidies depending on the exchange rate policy. The result was in the face of a fixed exchange rate the economy engaged in high external borrowing. To eliminate the borrowing, they suggested that the monetary authority must follow a flexible exchange rate rule in which capital inflows led to exchange rate appreciation. Odera (2015), while citing the 1998 assessment by Gressani and Faini on the approach to overvalued exchange rates, explained that in response to volatility in the financial sector attributed to external debt, the over-valuation of exchange rates was quite costly. In addition, the assessment also found that overvalued exchange rate brought some short-run benefit in the form of lower inflation and improved budgetary performance. Odera (2015) posited that reducing the external debt burden had significant effects through the impact on the fiscal and external balances.
Neaime (2009) explained that external debt wielded significant influence on the exchange rate policies. In addition, Neaime (2009) highlighted a positive relationship between external public debt with budget deficit, current account deficit, and exchange rate depreciation. Ezirim and Muoghalu (2006), observed that the exchange rate conditions between national and foreign currencies were affected by the country's external debt levels and foreign direct investment burden. Using debt trap and non-debt trap countries, Alam and Taib (2013) investigated the relationship between external public debt with budget deficit, current account deficit, and exchange rate depreciation for a period of thirty years (1971 to 2000). An empirical analysis using the ecology of dichotomy was undertaken. The findings showed that external public debt (EPD) was positively related to budget deficit (BD), current account deficit (CAD) and exchange rate depreciation (ERD) in the panels of six DTC and eight NDTC. However, the strength of relationship varied in DTC and NDTC.

Awan et al. (2011) investigated the effects of monetary deposit, depreciation, increasing external debts from 1974 to 2008, and the poor terms of trade in Pakistani. The scholars used a log-linear form model to evaluate the relationship. The findings of the study indicated that there was a long-term interaction between external debts and the rates of exchange. The study indicated that the long-running relationship between foreign debt and exchange rates significantly pushed up the debt burden in Pakistani. Additionally, the study showed the positive correlation between external debts and budgetary deficits in Pakistani economy. The studies by Dornbusch (1984) and Awan et al. (2011) assessed the effects of exchange rate on foreign debt and not the converse.

Devereux and Lane (2003) came up with an empirical model of inter-country currency exchange rate changes. The scholars investigated the factors that affect bilateral currency price changes among nations using similar currency developed an empirical theory of bilateral exchange rate fluctuations The investigators added several financial variables including elements showing internal finances, currency liabilities and bilateral portfolio liabilities between nations. Asonuma (2013) analyzed the depreciation of forex rates before and after a loan facility had entered into default using the regular sovereign debt theory. The findings indicated that before default, exchange rate depreciation emanated from the low trading position and a high dominance of foreign currency in the market. Studies by Asonuma (2013) and, Devereux and Lane (2003) examine the aspect of exchange rates volatility in a cross-section of countries but fail to broaden the study.
components to assess the effect of interest rates capping on the behavior of exchange rates.

2.4 Chapter Summary
This section of the study examined past literature on the subject of interest rates capping on the foreign exchange rates. The study examined the impact of interest rate caps and its subsequent effect on foreign exchange trade volumes across different contexts in different economies around the world. The section also drew parallels on existing literature gaps. The next section is chapter three, which presents the research methodology covering areas including; research design, population and sampling design, data collection methods, research procedure, and data analysis methods.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This section of the study describes the methodology that was adopted in the process of gathering data required for examining the effects of interest rate caps on the foreign exchange rates in Kenya. The research methodology covered critical components which include; research design, population & sampling, data collection methods, research procedure, and data analysis methods.

3.2 Research Design
The study adopted a correlation research design. Waters (2008) defines correlational research design as a quantitative method of research in which you have two or more quantitative variables from the same group of subjects and you try to determine if there is a relationship or co-variation between the two variables i.e. a similarity between them and not a difference between the mean. The variables that were used in this study include the interest rates caps, foreign exchange rate and foreign exchange trade volumes. The study utilized existing financial data, gathered from the Central Bank of Kenya and the independent commercial banks to assess the impact of interest rate cap on the foreign exchange trade volumes by listed commercial banks.

3.3 Population and Sampling Design
3.3.1 Population
The population is defined as the collection of objects which are the focus of a scientific query (Cooper & Schindler, 2014). Kothari et. al., (2010) defined the research population as a well-defined collection of individuals or objects s known to have similar characteristics. The study focused on the listed commercial banks, which have the overall largest market share in the country and the subsequent largest market capitalization for the financial sector in the securities exchange. Data from the Central Bank of Kenya (CBK), indicate that top 6 listed banks account for about 52.94% of the overall market share (CBK, 2016).
3.3.2 Sampling Design

3.3.2.1 Sampling Frame

The sampling frame is defined as the list of all eligible sampling units (Mugenda & Mugenda, 2012). The sampling frame is the set of sources material from which the sample is selected. Therefore the sample frame comprised of a population of the listed commercial banks that account for about 52.94% of the financial sector market share. These banks include; Kenya Commercial Bank (KCB), Equity Bank, Cooperative Bank, Standard Chartered Bank (K), Barclays Bank of Kenya and CFC Stanbic Bank.

3.3.2.2 Sampling Technique

Sampling technique is the actual process through which the entities of a sample are selected (Kothari et al., 2010). The study relied on foreign exchange data from the banks that were recorded to take part in the study. The data evaluated the data on the basis of trade volumes for the period before the enactment of the Banking (Amendment) Act of 2016. This was useful in highlighting the impacts of interest rate capping on the foreign exchange rates in Kenya.

Table 3.1 Tabulated Exchange Rates (KSH vs USD)

<table>
<thead>
<tr>
<th>Dates</th>
<th>KSH/USD Purchase</th>
<th>KSH/USD Sale</th>
<th>Variance</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th July 2016</td>
<td>101.4478</td>
<td>101.6422</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>25th Aug 2016</td>
<td>101.2744</td>
<td>101.4744</td>
<td>-0.1734</td>
<td>-0.17%</td>
</tr>
<tr>
<td>25th Sep 2016</td>
<td>101.1128</td>
<td>101.3072</td>
<td>-0.1616</td>
<td>-0.16%</td>
</tr>
<tr>
<td>25th Oct 2016</td>
<td>101.3067</td>
<td>101.5011</td>
<td>0.1939</td>
<td>+0.19%</td>
</tr>
<tr>
<td>25th Nov 2016</td>
<td>101.7733</td>
<td>101.9733</td>
<td>0.4667</td>
<td>+0.46%</td>
</tr>
<tr>
<td>23rd Dec 2016</td>
<td>102.2578</td>
<td>102.4578</td>
<td>0.4845</td>
<td>+0.47%</td>
</tr>
</tbody>
</table>

Source: Central Bank of Kenya (2017)

The data was sampled to cover a period of 1 year, extending for the 6 months before and after the implementation of the Banking (Amendment) Act of 2016 that introduced market restrictions for interest rates determined by commercial banks of Kenya.
3.4 Data Collection methods
The study relied on secondary data, which comprised of audited financial records, to assess the impact of interest rates capping on the foreign exchange rates and foreign exchange trade volumes in Kenya. Excel software was used to collect, compile and aggregate the financial data that was collected from the financial records. The study utilized quantitative data, obtained from the Central Bank of Kenya on the Foreign exchange rates and trading in Kenya by commercial banks listed at the NSE. Data collection is the process of gathering empirical evidence in order to gain new insights about a situation and answer questions that prompt undertaking of the research (Kothari, 2004). According to Babie (2010), the data collection procedure is the process of gathering pieces of information that are necessary for the research process. The data was collected from the 6 listed commercial banks that occupy about 52.94% of the market share and in the volumes of foreign exchange trade.

3.5 Research Procedure
Kothari et al. (2010) submitted that the research procedure is the sequence of activities that are followed when carrying out field study. The process that was used in collecting the data was by the document analysis guide. Data were collected from the Central Bank of Kenya, to assess the foreign exchange market state in the wake of capped interest rates. The data was comprised of audited financial records for the listed commercial banks. The data offered a breakdown of the foreign exchange rates, trade volumes, and inflation rates during the period of interest rates capping.

3.6 Data Analysis Methods
This study relied on secondary data in analyzing the influence of interest rate caps on the foreign exchange rates. The data was gathered from closed trading information centralizing on foreign exchange trade by commercial banks in Kenya for a period of one year. Data analysis adopted quantitative statistical data analysis model. Simple linear regression analysis technique was employed to assess the relationship between interest rate capping and foreign exchange trade in Kenya. The test was done at, 0.01 level of significance. The descriptive statistics included; mean, standard deviation, median, minimum and maximum.
Data went through linear regression test to produce outcomes for the model summary, Analysis of Variance and coefficients analysis. Fixed effects regression methods are used to analyze longitudinal data with repeated measures on both independent and dependent variables. There are two basic data requirements for using fixed-effects methods. First, the dependent variable (interest rates) was measured for each individual on at least two occasions, in our case, the foreign exchange was measured more than once at a regular interval (between the immediate period before capping of interest rates and the period of fixed interest rates). The study sought to establish the relationship between interest rate caps and foreign exchange rates and subsequent foreign exchange trade volume where;

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \]

\( Y \) = Interest Rate

\( \beta_1 \) = Beta coefficient for Interest rate

\( \beta_2 \) = Beta coefficient for foreign exchange trade volume

\( X_1 \) = Exchange Rates

\( X_2 \) = Foreign exchange trade Volume

### 3.7 Chapter Summary

This part of the proposal explored in the research methodology, which is a detailed description of the process that the researcher undertook while conducting the field survey. The section covered the research design which the researcher adopted. The section also described the research procedure which was adopted in the course of field survey and finally highlighted the research analysis method which was adopted upon completion of the field survey. The following section will be Chapter four presents results and findings of the field survey.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This section of the study covers the presentation of data and the subsequent analysis utilizing valid interpretation. The study sought to examine the effects of interest rate capping on the foreign exchange rates and the foreign exchange trade volume with the unit of analysis being the commercial banks listed at the Nairobi Securities Exchange (NSE).

The study relied on secondary data focusing on items such as the monthly average interest rates, average exchange rate and the estimate volume of foreign exchange trade monthly for the financial year, 2016 – 2017. The data was obtained from published banking industry reports from the Central Bank of Kenya. A total of 6 commercial banks were analyzed in this study, whose total market capitalization is estimated to over KSH1.2 Trillion, and are estimated to account for 53% of the market share (Central Bank of Kenya [CBK], 2018; CMA, 2018). The independent variables in this study included; exchange rates and foreign exchange volumes. The dependent variable was the interest rates.

4.2 Demographic Data

The data computed in table 4.1 highlights the market capitalization for the listed commercial banks and the estimated market share in the local banking sector.

<table>
<thead>
<tr>
<th>Listed Bank</th>
<th>Market Capitalization (KSH.)</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCB Limited</td>
<td>304,112,000,000</td>
<td>13.1%</td>
</tr>
<tr>
<td>Equity Bank Limited</td>
<td>215,829,000,000</td>
<td>9.3%</td>
</tr>
<tr>
<td>Cooperative Bank Limited</td>
<td>199,663,000,000</td>
<td>8.6%</td>
</tr>
<tr>
<td>Standard Chartered Bank(K)</td>
<td>195,493,000,000</td>
<td>8.4%</td>
</tr>
<tr>
<td>Barclays Bank of Kenya limited</td>
<td>185,102,000,000</td>
<td>7.9%</td>
</tr>
<tr>
<td>CFC Stanbic Bank Limited</td>
<td>133,378,000,000</td>
<td>5.7%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>1,233,577,000,000</strong></td>
<td><strong>52.94%</strong></td>
</tr>
</tbody>
</table>

The computed findings in Table 4.1, highlights the estimated market share of the 6 largest listed commercial banks in terms of market share aggregated from the market capitalization. The findings indicate that, KCB limited is the largest listed commercial bank, with a 13.1% market capitalization value of financial industry, Equity Bank is the second with a market capitalization value of 9.3% of financial industry. The data indicates that, Cooperative Bank Limited has a market capitalization estimate of 8.6% in financial sector whereas the Standard Chartered Kenya, market capitalization of 8.4% of the financial industry value. Barclays Bank Kenya, is estimated to have a 7.9% market capitalization share of financial industry and finally CFC Stanbic is estimated to possess a 5.7% share of the market capitalization value for the financial industry.

4.3 Descriptive Statistics

The data in table 4.2 presents the descriptive statistics for the three indicate rates, which include; interest rates, exchange rates and inflation as gathered using longitudinal approach, spanning a period of 12 months (June 2017 – May 2018). Each variable is measured using an average estimate for a full financial year.

Table 4.2 Descriptive statistics for the Indicative Rates Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Mode</th>
<th>Median</th>
<th>Skewness Statistic</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Rates (KSH)</td>
<td>12</td>
<td>13.076925</td>
<td>.9513148</td>
<td>11.3766</td>
<td>13.382900</td>
<td>-.795</td>
<td>.637</td>
</tr>
<tr>
<td>Exchange Rates (KSH/USD)</td>
<td>12</td>
<td>100.522625</td>
<td>.9805720</td>
<td>99.1791</td>
<td>100.637250</td>
<td>-.294</td>
<td>.637</td>
</tr>
<tr>
<td>Trade Volumes (KSH10^6)</td>
<td>12</td>
<td>0.816739</td>
<td>.1762355</td>
<td>0.4837</td>
<td>.823312</td>
<td>-.576</td>
<td>.637</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>12</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The findings in table 4.2, indicates that, there have been significant shifts for all the primary metric indicators. The data indicates that, interest rates have been estimated to average at about 13.679670, for the 12 month period for the Financial-Year (FY), 2017/2018 year period, with a maximum peak registered at 14.2558, and minimum of 12.5992. This metrics represent the basic central bank of Kenya indicative rate, through
which the financial sector adjusts to fit different interest margins for lending and deposits. Primarily, listed commercial banks leverage significantly on credit portfolio returns to supplement finance for the foreign exchange trade. The significant stalled interest rates margins indicate that listed commercial banks have experienced continuous strain in raising finance capital for foreign exchange trade, thus indicating limited capital to invest in the foreign exchange which is non-funded banking item.

The findings also demonstrate that, exchange rates have experienced significant changes for the period of 12 months, recording an average mean of 100.522625 (Standard Deviation = 0.9805720), which represents an average measure of exchange rate between Kenyan Shilling (KSH) and US Dollar (USD) for a period of 12 months (June 2017 – May 2018). The margins of difference in changes has also remained volatile for the same period, recording a minimum annual average of 100.3178 and maximum of 101.5043. The findings from the longitudinal data indicates that the for the past 12 months the value of Kenyan shilling has shown stability for the 12 month period, and relatively flat with minute shifts linked to pressures on the macroeconomic environment.

The findings also indicate that, for the period of 12 months (June 2017 – May 2018), the foreign exchange trade volumes were significantly steady with vigorous instances of fluctuations. The average trade volume for the 12 month period was at about KSH 829,691,600. The considerable levels of exchange rate volatility is noted from the significant margins of overlies, with minimum foreign exchange volume registered being 6.9717 with a maximum rate standing at KSH.1,623,080,000. The data obtain from the published records of the commercial banks indicates that, numerous commercial banks often aggregate returns from the foreign exchange together with all returns from the non-funded banking operations such as commissions.

4.4 Effect of Interest Rate Capping on Exchange Rates

The study sought to evaluate the effect of interest rate capping on the exchange rates for the listed commercial banks. The study conducted a regression test to compute the statistical effect of interest rates capping on the exchange rates.

4.4.1 Model Summary

The data in table 4.3 presents the model summary that is obtained from the regression test between the interest rates and the exchange rates.
Table 4.3 Model Summary for Interest Rates and Exchange Rates

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.438</td>
<td>.192</td>
<td>.091</td>
<td>.17734</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Interest Rates

The results obtained in table 4.3 indicates that the model R-value generated in the assessment is 0.438, and an R-Square value of 0.192. This indicates that, interest rates account for moderate effect on exchange rates determined by listed commercial banks. The findings also indicates that, interest rates account for 19.2 % in the variability for the exchange rates values, thus 80.2 % in variability in exchange rates values can be attributed by other factors, besides the interest rates.

4.4.2 ANOVA for Interest Rates and Exchange rates

The data in table 4.4 presents the ANOVA results, deduced from the regression test between interest rates and exchange rates.

Table 4.4 ANOVA for the influence of Interest rates on exchange rates

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regresion</td>
<td>.060</td>
<td>1</td>
<td>.060</td>
<td>1.904</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.252</td>
<td>8</td>
<td>.031</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.312</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Exchange rates
b. Predictors: (Constant), Interest Rates

The findings in table 4.4, presents the findings for Variance between interest rates and exchange using a linear regression test. The study was examined at the significance level 0.01. The data deduced indicates that Fisher statistic value, F (1, 9) = 1.904, with a p-value of 0.002. The study deduces a statistical significance (p = 0.002, p < 0.01). The study therefore deduces that there exists moderate statistical association between interest
rates and exchange rates, at significant level 0.01. This implies that, interest rates contribute to a marginal variation in exchange rates.

**4.4.3 Coefficient Table for Interest Rates and Exchange Rates**

The data in table 4.5 presents the coefficients figures deduced for the impact of interest rates on the exchange Rates.

### Table 4.5 Coefficient for Interest Rates

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.524</td>
<td>.206</td>
<td>2.545</td>
</tr>
<tr>
<td></td>
<td>Interest Rates</td>
<td>.031</td>
<td>.023</td>
<td>1.380</td>
</tr>
</tbody>
</table>

**a. Dependent Variable: Exchange Rates**

The findings in table 4.5, indicates that, the Beta (B) statistic value for constant deduced in the test is 0.524, whereas Interest Rate coefficients deduced was 0.031. The test was assessed at significant level 0.01.

The system equation for the Test is; Y (Exchange Rates) = A + BX

Where, A = constant value, X = Interest Rates, B = Beta value.

Therefore the equation: Y = 0.524 + 0.031X.

The study makes a finding that, for every unit offset in interest rates, triggers a 0.031 unit’s change on the exchange rates demonstrating the statistical association.

**4.5 Effect of Interest Rates on Foreign Exchange Trade Volume**

The second regression test for the study examined the effect of interest rates on the volume of foreign exchange trade by the listed commercial banks in Kenya.

**4.5.1 Model summary for Interest Rates and Foreign Exchange Trade Volume**

The data in table 4.6 presents the model summary for the effect of interest rates on the foreign exchange trade volumes.
Table 4.6 Model Summary for Interest Rates and FX Trade Volume

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-.946</td>
<td>.895</td>
<td>.882</td>
<td>.06401</td>
</tr>
</tbody>
</table>

The findings tabulated in table 4.6 highlight the model summary for the regression test between interest rates and FX trade volumes made by listed commercial banks. The R-value generated for this test is -0.946, with an R-value of 0.895. This implies that, there exists a negative (-0.946) correlation between interest rates and FX trade volumes. This indicates an inverse association. The findings also imply that, interest rates account for 89.5% of a variability in foreign exchange trade volumes, which shows that 10.5% of variability can be attributed to other factors external to the interest rates.

4.5.2 ANOVA for Interest Rates versus FX Trade Volumes

The data in table 4.7 highlight the Variance outcome computed in the regression test between interest rates versus FX trade volumes.

Table 4.7 ANOVA for Interest Rates and FX Trade Volumes

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>.279</td>
<td>1</td>
<td>.279</td>
<td>68.026</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.033</td>
<td>8</td>
<td>.004</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.312</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: FX Trade Volumes
b. Predictors: (Constant), Interest Rates

The findings presented in table 4.7, presents the regression test outcome for ANOVA, examined at 0.01 significance level. The Fischer statistic value, F (1, 8) = 68.026, which indicates a high level of association between interest rates and FX trade volumes. The test deduced a p-value of 0.000 (p = 0.000, p < 0.01). The findings imply that there exists significant statistical association between dependent variable (FX trade volumes) and predictor variable (interest rates) at significant level 0.01.
4.5.3 Coefficients for Interest Rates versus FX Trade Volumes

The data in table 4.8 presents the coefficient results for the regression test, between interest rates versus FX trade volumes.

Table 4.8 Coefficients table for exchange rates and financing decisions

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-.531</td>
<td>.162</td>
<td></td>
<td>-3.271</td>
</tr>
<tr>
<td>Exchange Rates</td>
<td>-.016</td>
<td>.002</td>
<td>.946</td>
<td>8.248</td>
</tr>
</tbody>
</table>

The findings in table 4.8 present the coefficient results for the test, which indicate that there exists an association between interest rates and FX trade volumes.

The regression equation adopted: Y (FX Trade Volumes) = A + BX, where A = -0.531 and B = -0.016. X represents the interest rates.

The equation generated; Y = -0.531-0.016X. The findings imply that, for a unit change in interest rate, an inverse change of 0.016 units will be recorded for the foreign exchange trade volumes. The findings show that, positive marginal changes in interest rates contribute to negative fluctuations (offset) for the volumes in foreign trade by the listed commercial banks.

4.6 Multivariate Regression for Exchange Rates and Trade Volumes

The study conducted a multivariate regression test, to assess the impact of interest rates on the exchange rates and foreign exchange trade volumes. The data in table 4.9 present the multivariate regression outcome for multivariate regression test.

Table 4.9 the Model Summary for the Multivariate Regression

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.846a</td>
<td>.716</td>
<td>.527</td>
<td>.2806299</td>
</tr>
</tbody>
</table>
The findings computed in Table 4.9, highlights the model summary for the multivariate regression test for the predictor and dependent variables. The test deduces an r-value of 0.846 and an r-square value of 0.716. The findings imply that there exists a strong positive correlation between the predictor variable (interest rates) and the dependent variables (exchange rates & FX trade values). The findings also indicate that, interest rates accounts for .527 (52.7%) in variability for the exchange rates and FX trade volumes, which means that 47.3 % of variability is influenced by factors external to interest rates.

Table 4.10 ANOVA for Multivariate Regression

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>.597</td>
<td>1</td>
<td>.299</td>
<td>30.791</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>.236</td>
<td>8</td>
<td>.079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.833</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The findings computed in Table 4.10, indicates that the F-statistic value for the test is 30.791, with a significance value of 0.000, F (1, 9) = 30.791, p = 0.000, p < 0.01. The findings indicate that there exists significance, variance between all the study variables notably; interest rates, exchange rates and foreign exchange rates. The findings further imply that there exists significant statistical association between interest rates, exchange rates and foreign exchange volumes.

Table 4.11 Coefficients for Independent and Predictor Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-.670</td>
<td>.186</td>
<td></td>
<td>-3.604</td>
</tr>
<tr>
<td>Exchange Rates</td>
<td>.018</td>
<td>.002</td>
<td>1.051</td>
<td>7.247</td>
</tr>
<tr>
<td>FX Trade Volume</td>
<td>-.009</td>
<td>.006</td>
<td>.203</td>
<td>1.476</td>
</tr>
</tbody>
</table>
The findings in table 4.11 present the computed coefficient results for the multivariate linear regression test for the effect of interest rates on exchange rates and foreign exchange trade volume. The multivariate regression test was carried out at 0.01 significant level. The regression equation adopted for the multivariate regression test was:

Therefore the consolidated regression equation is: \( Y = -0.670 + 0.018X_1 - 0.009X_2 \)

This implies that, in multivariate linear regression test, an offset unit change in interest rates results in 0.010 unit inverse offset in trade volumes. On the other hand, a unit change in interest rates results in a 0.018 unit change in exchange rates, which indicates that, there exists a direct statistical association between interest rates and exchange rates.

4.7 Chapter Summary
This Part of the study explored on the results and findings on the effect of interest rates capping on exchange rates and foreign exchange trade volume. The section commences by presentation of the list of commercial banks whose performance formed the basis of this study. The section then examined the descriptive statistics for the study variables notably; interest rates, exchange rates and foreign exchange trade volumes. The study relied on inferential statistics, implemented using linear regression tests, to compute the relationship between the research variables. The next section is chapter five, which covers summary, discussion, conclusion and the recommendations of the study.
CHAPTER FIVE
5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
This part of the study explores on the summary of the findings which highlights the key main findings in the study. The section will also explore on the discussion of the findings, where thematic association is made between the main findings of this study and the past literature on the effect of interest rate capping on the foreign exchange rates in Kenya. Next, the section will then draw the main conclusions from the field study and finally offer recommendations drawn from the findings.

5.2 Summary of the Findings
The main purpose of this study was to examine the impact of capping the lending rates on the exchange rates and subsequently the effect on foreign exchange trade volume. The capping of lending rates was made possible through setting a ceiling of 4.0% above the Central bank Lending Rate (CBR). To effectively examine the effect of this central bank policy, the study measured its impact on the foreign exchange trade. The study employed a descriptive research design as the methodology, utilizing secondary data, which include the financial records on covering the constructs of interest rates, exchange rates and foreign exchange trade volume.

The period of analysis for the sampled data, focused on the 6 months before and after the enactment of the Amended Banking Act of 2016. This was affected through measuring the interest rates charged by the commercial banks for a one financial year (2017-2018) against the foreign exchange rates and the foreign exchange trade volume. All the data was focused on the 2017/2018 Financial Year (FY), between the months of June 2017 through May 2018. The aggregations for interest rates, focused on the average interest rates for 12 months in the selected FY, together with aggregations for exchange rates and trade volumes for the same period.

The study performed linear regression test to assess for statistical relationship between interest rates and foreign exchange rates. The analysis established a moderate positive correlation, recording an r-value of 0.438. In addition, the study found that interest rates account for 19.2% in variability of the exchange rates. The findings further revealed a marginal unit change in exchange rates for every unit change in interest rates. The study establishes a direct statistical association between interest rates and exchange rate. This
indicates that, interest rate capping yields a direct effect on the exchange rates. The study establishes that, capping interest rates, reduces the direct reliance on funded capital which the commercial banks relies on as the basis for financing exchange trade. The study thus makes a finding that positive changes in interest rates results in moderate positive changes in exchange rates.

The study established that there exist a direct statistical association between interest rates and the foreign exchange trade volume. The linear regression test, determined an r-value of -0.946, which indicates a strong negative correlation between interest rates and foreign exchange trade volume. The study further establishes that, interest rates account for an overwhelming 89.5% in variability for the foreign exchange trade volume. The inferential results computed through linear regression reveals that there exists significant inverse effect for every quantifiable unit change in the study variables. The study establishes that a positive change in foreign exchange trade volumes is recorded for every negative unit offset change in interest rates and a similar positive margin in offset is recorded for a negative change in interest rate. The study finally establishes an inherent inverse relationship between interest rates capping by commercial banks and their foreign exchange trade volumes.

5.3 Discussion of Findings

5.3.1 Interest Rate Capping Influence on the Changes in Exchange Rates

The study established that interest rate capping contributes to stalled performance of the domestic financial activity which encourages the monetary regulators reevaluate the exchange rates to match the domestic rates. The study also established that, capped interest rates yields a moderate changes on the exchange rates. The findings agree with submissions by Ahmed (2015) who observed that exchange rates are highly volatile whenever sporadic interest rates changes are recorded for the domestic financial market, however they remain relatively stable in economies where the financial sector is stable and there is an environment of little uncertainty. In addition the findings are supported by submissions by Manyo et al. (2016) who stressed that the financial industry is connected to the global financial trade through the exchange markets which operate on the basis of exchange rates which are relative to the domestic interest rates.
The study established that for every marginal unit adjustments recorded for the interest rates resulted in concurrent marginal changes to the exchange rates. The study therefore found that upon capping of the rates the causal effect in exchange rates value reduces and remains stalled, however, other factors such as the inflation, global currencies performance and the country’s external debt will still cause adjustments of the exchange rates. These findings are consistent with Getachew (2015) assessment, who observed that the exchange rates are subject to numerous external factors beyond the interest rate, such as inflation, external dept and the status of domestic economy. The findings are also supported by the submissions of Odera (2015) who observed that, interest rates reflect the fiscal policies executed in the domestic financial market, however, external factors play a considerable role to the performance of the money markets.

The study establishes that the there exist significant variance between interest rates and exchange rates. The findings indicate the exchange rates are metric indicators which determine the monetary values of currency exchanges in regional and international financial markets. The findings are in line with Manyo et al. (2016) and Odera (2015) who forewarned that the global financial market is independent of the domestic fiscal policy and when the domestic currency faces pressure, there is likelihood of strengthening of the external market. Furthermore, the findings agree with Ahmed (2015) who submitted that, with stalled interest rates the domestic credit market stalls and stabilizes but the foreign exchange market faces exposure to global monetary pressures that could pose grave market risk to the status of the local currency against the global currencies.

5.3.2 Interest rate Capping Influence on the Foreign Exchange Trade Volumes

The study established that, interest rates wield a significant influence on the volumes of foreign exchange trade. The findings also show that, capping interest rates yield negative correlation on the foreign exchange trade volume. The findings are in line with Lagat and Nyandema (2016) who observed that interest rates capping was a negative factor for the performance of the credit market. According to Lagat and Nyandema (ibid), capped interest rates will facilitate for a stalled and possible reduction in the interest rates spreads, which will mean that, the banks will have less revenues to commit for the foreign exchange trade. The findings are also backed by Getachew (2015), who observed that fiscal interventions that halt primary financial performance will eventually affect the overall commercial banks performance on the foreign exchange front, considering that
there will be less returns from the non-funded ventures driven by less funds committed on the same.

The study found that marginal adjustments recorded for the interest rates results in limited inverse adjustments in the foreign exchange trade volumes. This findings thus show that, for moderate increase in interest rates negatively impacts on the foreign exchange trade volume. Consequently the study establishes that, capping interest rates, contributes to a marginal negative causal effect on the foreign exchange trade volumes, however other external factors such as global monetary pressure and inflation, wield overwhelming influence on the foreign exchange trade. The findings are consistent with Ghasemi and Rostani (2010) who submitted that interest rates impact on the commercial banks profits and reduced or poor financial returns in the credit portfolio will mean that the commercial banks will have less financial base to fund foreign exchange trade. Further, the findings agree with Nwanne and Richard (2015) who observed that, limited stalled domestic rates, negatively affects investments on the external foreign exchange market.

The study found that regulatory intervention on the financial markets, such as the passage of measures aimed at intervening on the interest rates, resulted in chain reaction that is experienced far and wide. The capping of interest rates was found to negatively impact on the financial markets as the financial stocks experienced slow down due to the expected reduced revenues from the credit portfolio. This inadvertently resulted to the disproportionate mixed outcome of the exchange rates, subsequently slowing down the Forex trade volume. This findings support the submissions by Bergen (2010) and, Ojo and Alege (2014) who established that regulations on financial trade, such as the capping of interest rates, wielded a negative outcome on the exchange rates, which subsequently negatively influence the Forex trade volume. The regulatory intervention, even marginally is found to wield a chain reaction that subsequently results in the slowed Forex trade volume. Commercial banks, which rely on forex trade to supplement revenues from the credit portfolio are most affected as the interest rate capping impacts on their margins, which further reduces their capital investment for the Forex operations.
5.4 Conclusions

5.4.1 Interest Rate and Exchange Rates

The study concludes that interest rates have a direct effect on the fluctuations recorded for exchange rates for every trading session. Interest rates capping sets a ceiling on the levels of projected margins for the credit financing which contributes to much leaner spreads hence limiting returns for the traditional funded income. The study concludes that reduction in interest rate spread will reduce the overall margins and subsequently halt the commitment to non-funded investments such as the foreign exchange trade. Leaner capital and reduced foreign exchange trade will impact the exchange rates negatively and could stagnate and potentially fluctuate positively due to inflation resulting from reduced foreign exchange. The study therefore concludes that, interest rate capping impacts negatively on the exchange rates resulting in positive fluctuations which could be unproductive for the FX market as the reduced trade puts pressure on the macro-environment, impacting negatively on the commercial banks foreign exchange returns.

5.4.2 Interest Rates and Foreign Exchange Trade Volume

The study concludes that interest rates capping yields a negative impact on the foreign exchange trade volume. The study links interest rates changes to inverse reactive fluctuations for the trade volumes. The study concludes that interest rates capping impacts on the commercial banks non-funded returns gained from the foreign exchange trade. A reduction in funded income means that available capital for commercial banks to invest on the foreign exchange trade will be limited significantly considering that the credit income generated from the lending portfolio will reduce or stagnate hence lowering the commercial banks financial base. The study concludes that, any shocks that could be triggered by stagnated interest rates due to the capping policy will reduce commercial banks reliance on the primary revenue channels which offer better returns. The study finally concludes that, with the returns gained from the credit portfolio diminishes or stagnates commercial banks will be less motivated to explore foreign exchange trade hence reducing the volume of trade.
5.5 Recommendations

5.5.1 Recommendations for Improvement

5.5.1.1 Interest Rates Capping on the Exchange Rates

The study identifies a direct association between interest rates capping and exchange rates. The study recommends for the review of the government regulatory framework whose implementation resulted in setting a ceiling on the indicative Central bank Rate. The review should consider scrapping the need for a standardized margin of interest rates charged for all the interest rates. Through scrapping of the standardized and capped interest rates, it will encourage commercial banks to open doors for the diversification of credit programs to facilitate credit accessibility to all commercial bank clients.

The study further recommends for the introduction of stringent regulatory policies for that will seek to shield commercial banks from direct radical regulatory interventions by the national government in unplanned manner. In future, clear consultative framework should be designed to enable consultation between the government and the private sector before the introduction of such radical reforms like the interest rate capping regulation. Through adoption consultative approach, will result in enhanced prospects for success for such policies as it will create an ambient environment within the financial sector and will have strong support for both the government and the private sector.

5.5.1.2 Interest Rates Capping on the Foreign Exchange Trade Volume

The study recommends for the review of the indicative CBR, in consideration of the foreign exchange trade. The study submits that, future interventions designed to shake the financial sector, should be well analyzed in relation to the foreign exchange trade as engaged by the commercial banks. The study recommends for the support of the commercial banks reserves that are meant to facilitate foreign exchange trade. This is because, the size of foreign exchange trade volumes boost the foreign exchange reserves by commercial banks enhancing the strength of the local currency versus the global currencies. A reduction in foreign exchange volumes, increases the pressure for the local currency against stronger global currencies which portends to a weaker currency and subsequent the foreign exchange earnings. Finally, the study recommends shielding of the local commercial banks foreign exchange trade volumes, by creating an emergency fund.
by the CBK that will aid in stabilizing foreign exchange trade in case of shocks resulting from reduced trade volumes due to regulatory interventions.

5.5.2 Recommendations for Further Studies

The study examined the aspect of interest rates changes against the exchange rates and foreign exchange trade volumes to draw conclusions for the interest rate capping. During the research period, the study establishes that more areas of concern lie on the trade fronts such as the practices utilized by commercial banks agents to execute foreign exchange. As such the study recommends future scholars to examine the influence of regulatory policies such as, interest rates capping on the foreign exchange trade practices by commercial banks. The study also recommends future researchers to examine the impact of interest rates capping on the financial performance for the commercial banks non-funded portfolio. Finally the study recommends future scholars to evaluate the impact of interest rates capping on the rates of the overall gains for the foreign exchange trade.


Kimani, E. N. (2016). Interest Rate Caps in Kenya; Is this the End of the Oligopolistic Banking System?


APPENDICIES

APPENDIX I: MARKET CAPITALIZATION OF THE LISTED COMMERCIAL BANKS

<table>
<thead>
<tr>
<th>Listed Bank</th>
<th>Market Capitalization (KSH.)</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCB Limited</td>
<td>304,112,000,000</td>
<td>13.1%</td>
</tr>
<tr>
<td>Equity Bank Limited</td>
<td>215,829,000,000</td>
<td>9.3%</td>
</tr>
<tr>
<td>Cooperative Bank Limited</td>
<td>199,663,000,000</td>
<td>8.6%</td>
</tr>
<tr>
<td>Standard Chartered Bank(K) Limited</td>
<td>195,493,000,000</td>
<td>8.4%</td>
</tr>
<tr>
<td>Barclays Bank of Kenya limited</td>
<td>185,102,000,000</td>
<td>7.9%</td>
</tr>
<tr>
<td>CFC Stanbic Bank Limited</td>
<td>133,378,000,000</td>
<td>5.7%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>1,233,577,000,000</strong></td>
<td><strong>52.94%</strong></td>
</tr>
</tbody>
</table>


APPENDIX II: VARIABLES MINIMUM, MAXIMUM, MEAN, STD. DEVIATION AND SKEWNESS

<table>
<thead>
<tr>
<th>Statistic</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rates</td>
<td>12</td>
<td>11.3766</td>
<td>14.2558</td>
<td>13.0769</td>
<td>.9513148</td>
<td>-.795</td>
<td>.637</td>
</tr>
<tr>
<td>Exchange rates</td>
<td>12</td>
<td>99.1791</td>
<td>101.7890</td>
<td>100.522</td>
<td>.9805720</td>
<td>-.294</td>
<td>.637</td>
</tr>
<tr>
<td>Foreign exchange volume (10^6)</td>
<td>12</td>
<td>.4837</td>
<td>1.0834</td>
<td>.816739</td>
<td>.1762355</td>
<td>-.576</td>
<td>.637</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX III: DESCRIPTIVE STATISTICS MEAN, MEDIAN, MODE AND SKEWNESS

<table>
<thead>
<tr>
<th>N</th>
<th>Valid</th>
<th>Exchange rates</th>
<th>Foreign exchange volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Mean**: 13.076925, 100.522625, .816739
- **Median**: 13.382900, 100.637250, .823312
- **Mode**: 11.3766, 99.1791, .4837
- **Skewness**: -0.795, -0.294, -0.576
- **Std. Error of Skewness**: .637, .637, .637

*a. Multiple modes exist. The smallest value is shown*
TO WHOM IT MAY CONCERN

08TH JULY 2019

Dear Sir/Madam,

REF: PERMISSION TO CONDUCT RESEARCH- FREDRICK NGURE NDAMBIRI
STUDENT ID NO. 647902

The bearer of this letter is a student of United States International University (USIU)-Africa pursuing a master’s Degree in Business Administration.

As part of the program, the student is required to undertake a dissertation on the “Effects of Interest Rate Capping on the Foreign Exchange Rates in Kenya: Case Study of Commercial Banks Listed at Nairobi Securities Exchange (NSE).” requires him to collect data.

Please note that information provided will be treated with utmost confidentiality and will only be used for academic purposes.

Kindly assist the student get the appropriate data and should you have any queries contact the undersigned.

Yours Sincerely

Prof. Amos Njuguna
Dean School of Graduate Studies, Research and Extension

Tel: 0730 116 442
Email: amnjuguna@usi.ac.ke
This is to certify that Mr. FREDRICK NDAMBIRI of United States International University Africa, has been licensed to conduct research in Nairobi on the topic: EFFECTS OF INTEREST RATE CAPping ON THE FOREIGN EXCHANGE RATES IN KENYA: CASE STUDY OF COMMERCIAL BANKS LISTED AT NAIROBI SECURITIES EXCHANGE (NSE) for the period ending: 29 July 2020.

License No: NACOSTI/R/19/191

875256
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, scan the QR Code using a QR scanner application.