

**THE EFFECTS OF INTEREST RATES ON STOCK RETURNS OF
LISTED COMMERCIAL BANKS IN KENYA**

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DECLARATION

I, the undersigned, declare that this project is my original work and that it has not been presented to any other college, institution or university for academic credit.

I further declare that all materials cited in this paper which are not my own, have been duly acknowledged.

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This research project has been presented for examination with my approval as the appointed university supervisor.

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DEDICATION

This work is dedicated to my dear wife Everline Magati, my beloved sons: Ephy Dima, Enrico Dima and Denzel Dima for their love, support and understanding during my absence from home while undergoing this course.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENTS	iii
DEDICATION.....	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS AND ACRONYMS	x
ABSTRACT.....	xi
CHAPTER ONE: INTRODUCTION.....	1
I.1 Background of the Study	1
1.1.1 Interest Rate	3
1.1.2 Stock Returns.....	4
1.1.3 Interest Rate and Stock Returns.....	5
1.1.4 Listed Commercial Banks in Kenya.....	7
1.2 Research Problem.....	8
1.3 Objective of the Study.....	10
1.4 Value of the Study.....	10
1.4.1 Contribution to Theory	10
1.4.2 Contribution to Policy	11
1.4.3 Contribution to Practice.....	11
CHAPTER TWO: LITERATURE REVIEW.....	12
2.1 Introduction	12

2.2 Theoretical Review	12
2.2.1 Classical Theory	12
2.2.2 Post Keynesian Theories	13
2.3 Interest Rates in Kenya	14
2.4 Determinants of Stock Returns	16
2.5 Empirical Studies on Interest Rate and Stock Returns.....	17
2.6 Stock Market and Listed Commercial Banks in Kenya	19
CHAPTER THREE: RESEARCH METHODOLOGY	21
3.1 Introduction	21
3.2 Research Design.....	21
3.3 Target Population	21
3.4 Data Collection Tools and Procedures	22
3.5 Data Analysis	22
CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION.....	25
4.1 Introduction	25
4.2 Descriptive Statistics	25
4.3 Correlation Analysis.....	27
4.4 The Trend of Central Bank Interest Rates in Kenya	28
4.5 The Extent of Stock Returns of listed Commercial Banks in Kenya.....	29
4.6 Sensitivity of Central Bank Interest Rate Changes on Stock Returns of Listed Commercial Banks in Kenya.....	30
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS	34

5.1 Introduction	34
5.2 Summary of Findings	34
5.3 Conclusion.....	36
5.4 Recommendations of the Study	36
REFERENCES.....	38
APPENDICES:.....	41
Appendix I: List of Commercial Banks Listed In NSE	41

LIST OF TABLES

Table 4.1: Descriptive Statistics for Listed Commercial Banks Stock Returns	25
Table 4.2: Descriptive Statistics for Market Return, CBR, Treasury rate and NSE Index Change	26
Table 4.3: Pair-wise Correlation Analysis of the Study Variables	27
Table 4.4: Regression Analysis of Stock Returns versus Market Return and CBR Change ...	30
Table 4.5: Regression Analysis of Stock Returns versus CBR, Treasury Rate and NSE Index Change	32
Table 4.6: Regression Analysis of CBR Change versus NSE Index Change and Market Returns	33

LIST OF FIGURES

Figure 4.1: The Trends of Central Bank Interest Rates	28
Figure 4.2: Extent of Stock Returns.....	29

LIST OF ABBREVIATIONS AND ACRONYMS

BLR	-	Base Lending Rate
CAPM	-	Capital Asset Pricing Model
CBK	-	Central Bank of Kenya
CBR	-	Central Bank Rate
GDP	-	Gross Domestic Product
IMF	-	International Monetary Fund
MPC	-	Monetary Policy Committee
NSE	-	Nairobi Securities Exchange
Repo	-	Repurchase Rate

ABSTRACT

Interest rate is the borrower's cost on a loan and the lender's reward on investment. Interest rates affect individual's decisions about whether to spend more or save. It also affect business decisions about whether to expand operations or invest in financial markets and as such savers must evaluate the interest they will earn, and the rate of return on their investment, to select the financial instrument that offers them the best deal. Interest rates are fundamental to a capitalist society and are normally expressed as a percentage rate over the period of one year. Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation.

On the other hand, commercial banks occupy a significant position in the transmission of monetary policy through the financial market. Furthermore, commercial banks have assets and liabilities which are interest rate sensitive, and their stock returns are believed to be particularly responsive to changes in the central bank base lending rates. Therefore, this study investigated the sensitivity of central bank interest rate changes on stock returns of listed commercial banks in Kenya for nine year period, from 2006 to 2014. The study used a hybrid of cross sectional and longitudinal quantitative surveys method, applying regression model on the secondary data from the 11 listed commercial banks in Kenya. The study found out that the sensitivity of average monthly changes in central bank interest rates (CBR) on the stock returns of the listed commercial banks in Kenya from 2006 to 2014 varied, depending on the characteristic of the individual bank. Hence, listed commercial banks' managers in Kenya should monitor, keenly, the changes in the central bank interest rates and make investor related decisions accordingly.

CHAPTER ONE: INTRODUCTION

I.1 Background of the Study

The impact of monetary policy, such as the central bank interest rate sensitivity, on banks' stock market returns has been a main concern for bank managers, regulatory authorities, academic communities and investors. The failure of most commercial banks have been particularly linked to the adverse impacts of fluctuations in interest rates (Kasman, Vardar, & Tunç, 2011). Korkeamäki (2011) found out that most commercial bank managers view interest rate sensitivity as the second most significant risk factor, after credit risk. In addition, determination of the relationship between commercial banks' stock market returns and their financial risk parameters, such as central bank interest rate changes, can provide financial managers and commercial banks' regulators with additional information, including information on how to improve commercial banks' stock market returns through better management of interest rates sensitivity.

Traditional asset pricing theories assert that the value of an asset equals the present value of the future cash flows derived from the asset (Lumby & Jones, 2015). Changes in the central bank interest rate can affect individual bank's stocks by changing the expectation of future cash flows and the required rate of return (Yin & Yang, 2013). Yin and Yang (2013) argued that an increase in the central bank interest rate signals a contractionary monetary policy to the market and leads to an expectation of less cash inflow in the future. At the same time, the shareholders' required rate of return increases, as the increase in the central bank interest rate increases market interest rates and returns in bond. It is also expected that a decrease in the central bank interest rate should have the opposite effect.

The popular post Keynesian's theories, including Keynes liquidity preference, neoclassical synthesis ISLM and Basil Moore's Horizontalist or endogenous money are the major theories of interest rate (De-Juan, 2007; Wray, 1992). However, for post-Keynesian monetary theory to be truly distinct from various neoclassical versions of money theory, both the loanable funds approach and the natural rate of interest concept incorporated in the neoclassical synthesis ISLM theory had to be discarded (Lavoie, 1996). Hence, the Horizontalist theory of interest rates proposed by Horizontalist, such as Basil Moore, was proposed (De-Juan, 2007). The Horizontalist theory claims that the central bank of a country is in a position to set nominal rates and even real rates of interest by adjusting the nominal rates to the actual or expected inflation rate (Lavoie, 1996). The theory argues that what the rate of interest exactly depends on is not really significant provided it does not necessarily increase with the level of economic growth. The Horizontalist highlights that the rate of interest can be determined exogenously with respect to the income generation process (Rochon, 2006). Hence, the theory asserts that the rate of interest is exogenous. The central bank only indirectly influences the monetary aggregates and it can fix the base interest rate with absolute precision, within the limits of existing conventional financial knowledge (Frijns, Indriawan, & Tourani-Rad, 2015). Consequently, base interest rate is an administered rate, analogous to the rates set by managers of oligopolies selling their products, such as commercial banks.

A lot of countries in Sub Saharan Africa, still experience high levels of interest rates, even though majority of them have undertaken structural adjustment reforms that leads to the liberalisation of interest rates in several countries in the region, including Kenya (Were & Wambua, 2014). However, Were and Wambua (2014) argued that "two decades after the financial sector in Kenya was liberalized in the early 1990s to allow market-determined

interest rates, concerns about high interest rates have continued to persist and attracted a lot of debate in both public and policy forums”. In addition, Tarus, Chekol, and Mutwol (2012) argued that interest rates were liberalized in Kenya with the main objective of improving efficiency in the intermediation process by reducing the interest risks, which in turn was to improve the listed commercial banks’ stock returns. According to the authors, this still seems to be a major challenge within the Kenyan banking sector. Therefore, this study attempted to investigate the sensitivity of central bank interest rates on stock returns of listed commercial banks in Kenya.

1.1.1 Interest Rate

The rate of interest is simply defined as the cost of credit, normally expressed as a percentage of the credit, and is therefore governed by supply of and demand for credit (Lumby & Jones, 2015). The banking system through its ability to give credit and offer savings services can be influenced, and to some extent their stock market returns are affected, by the interest rate levels. Therefore, changes in interest rates are watched closely by bond and fixed income traders, as the resulting price fluctuations will affect the overall market returns of the securities (Gitman, Joehnk, & Hubbard, 1999). Korkeamäki (2011) argued that corporate managers, including those of commercial banks, view changes in interest rate as the second most significant risk factor, after credit risk.

Given the importance of banking institutions in facilitating financial intermediation, several studies have been conducted in Kenya on the changes of interest rates, mostly to identify the determinants of interest rate spread (Tarus et al., 2012; Were & Wambua, 2014). Others such as Irungu (2013); Okech (2013) and Githae (2012) have looked at the effect of interest rate spread on the financial performance of commercial banks in Kenya. This study in addition

attempted to contribute to the epistemology of financial management in the area of interest rate by focusing on the trend of the of changes of central bank (CBK) rates in Kenya for nine year period, from 2006 to 2014, and how these changes impacts on the stock returns of listed commercial banks in Kenya. The CBK rates were the main focus since the commercial banks have no influence on their determinations.

Section 36 (4) of the Central Bank of Kenya Act specifies that the Central Bank shall publish the lowest rate of interest it charges on loans to banks and that rate shall be known as the Central Bank Rate. The level of the base lending rate is reviewed and announced by the Monetary Policy Committee at least every two months and its movements, both in direction and magnitude, signals the monetary policy stance. The central bank rate is the base interest rate for all monetary policy operations in order to enhance clarity and certainty in monetary policy implementation. The Kenyan commercial banks, including the listed ones, then set their individual lending rates based on the central bank base lending rate, which may have either a positive or negative influence on the individual commercial banks' performance. Therefore, this study attempted to determine the effect of the central bank base lending rate on the stock returns of listed commercial banks in Kenya.

1.1.2 Stock Returns

Stock returns are the returns or benefits that the investors make out of the stock market (Madura & Fox, 2014). This return could be in the form of profit through trading or in the form of dividends given by the company to its shareholders from time-to-time. The most common form of generating stock market return is through trading in the secondary market. In the secondary market an investor could earn stock market return by buying a stock at lower price and selling at a higher price. Stock market returns are not fixed ensured returns and are

subject to market risks. Therefore, in contrast to the fixed returns generated by the bonds, the stock market returns are variable in nature. Further, the reasoning behind stock market return is to buy cheap and sell at a higher price.

However, risk is part and parcel of the market and an investor can also get negative returns in case of wrong speculations. Therefore, the capital asset pricing model (CAPM) is one of the best measures of stock returns for listed firms such as commercial banks, since the measure incorporates risk factor as one of the variables for determining stock returns (Lumby & Jones, 2015). Olweny (2011) argued that CAPM has a number of assumptions and some of them do not hold in the real world, but he noted that the measure is still useful in evaluating financial decisions. In addition, Najand and Noronha (1998) also noted that the direction of causality and the specification of the relationship between stock returns and monetary policy factors, such as interest rate sensitivity still remains unresolved. Hence, this study attempted to analyse the extent of stock market returns of listed commercial banks in Kenya over the nine year period, from 2006 to 2014 using CAPM, and determine how stock returns relates with the changes of central bank interest rates.

1.1.3 Interest Rate and Stock Returns

The level of prevailing market interest rates may provide a single instrumental variable representing the changes in the investment opportunity within an economy (Tai, 2000). According to Tai (2000), this implies that studies might want to include the interest rate sensitivity as one possible extra-market factor which affects the stock returns of firms, using the capital asset pricing model (CAPM). Therefore, many studies have suggested that changes in interest rate is one of the major factors in most of the stock markets which

influence stock returns of firms such as commercial banks (Fernandez-Perez, Fernández-Rodríguez, & Sosvilla-Rivero, 2014; Frijns et al., 2015).

In other words, monetary policy decisions, such as central bank interest rates, influence various short-term interest rates which in turn, affect the discounted present value of expected future cash flows and may thus increase or decrease stock returns of firms (Zare, Azali, & Habibullah, 2013). The authors noted that most studies have come to a general consensus that stock returns are inclined to monetary policy decisions of the central bank, such as interest rates. Furthermore, according to Yin, Yang, and Handorf (2010), how bank stock returns react to monetary policy changes, such as central bank interest rates, not only reveals their effect on bank performance but also barometrically determines the efficacy of monetary policy in regulating the economy.

In addition, during the financial crisis period, banks have become the main subject of many monetary policy interventions, especially through the central bank interest rates (Fiordelisi, Galloppo, & Ricci, 2014). In line with the above argument, it is particularly important to understand what the main determinants of bank stock returns and their response to monetary policy changes are (Ricci, 2015). According to Fiordelisi and Molyneux (2010) bank common stock prices and bank stock returns, depend on both macroeconomic and bank-specific factors. Among these factors, a crucial role is played by changes in monetary policy, such as central bank interest rate changes, because of the interest rate sensitivity of both bank assets and liabilities (Yin & Yang, 2013). Yin et al. (2010) present a detailed discussion of how interest rate changes may affect bank stock returns.

However, most of these studies have found that interest rate sensitivity is a major factor for the overall stock market returns, amongst other factors such as bank size, funding sources and soundness of the bank (Yin & Yang, 2013) . Few studies, such as Yin and Yang (2013); Kasman et al. (2011); Yin et al. (2010) and Tai (2000), which have looked at interest rate as a determinant of stock returns of commercial banks have been done from developed economies with more efficient stock markets like United States (US). Thus, it is interesting to examine whether the changes of central bank interest rates have a potential influence on stock returns of commercial banks from a developing economy region with a developing stock market, such as Kenya.

1.1.4 Listed Commercial Banks in Kenya

Commercial banks play an essential role in the economy of a nation, such as Kenya, by undertaking financial intermediation functions (Were & Wambua, 2014). Commercial banks are involved in receiving funds from the public by accepting demand, time and saving deposits or borrowing from the public or other banks, and using such funds as whole or in part for granting loans, advances and credit facilities and for investing funds by other means (Tarus et al., 2012). According to Tarus et al. (2012) there are 44 commercial banks operating in Kenya and the sector has experienced higher interest rate sensitivity over the nine year period, from 2006 to 2014. According to the Central Bank of Kenya (2014a) report, 11 of the 44 commercial banks have been listed on the Nairobi Securities Exchange.

The financial services within the commercial banks in Kenya have remained expensive, as evidenced by high interest rate sensitivity and account fees (Beck et al., 2010). Furthermore, Barako and Gatere (2008) also argued that in a survey conducted by the Central Bank of Kenya, a number of financial institutions in Kenya, including commercial banks have no risk

management frameworks, which always help organisations to manage risks such as interest rates sensitivity. In the recent economic recovery strategy, the government of Kenya acknowledged that the commercial banks in Kenya, including the listed banks were experiencing difficulties that would undermine the achievement of the objectives set out in the strategy, including inadequate returns from the banking sector and persistence of wide interest rate sensitivity leading to a high cost of credit (Beck et al., 2010). Therefore, this study endeavoured to contribute towards the economic recovery strategy by identifying the trend of the sensitivity of interest rates in Kenya for nine year period, from 2006 to 2014, analysing the extent of stock returns of listed commercial banks in Kenya over the nine year period, from 2006 to 2014 and investigating the sensitivity of interest rates on stock returns of listed commercial banks in Kenya

1.2 Research Problem

Commercial banks, including listed banks play a fundamental role in the economy by undertaking financial intermediation functions of saving and lending (Ongore & Kusa, 2013). However, according to Tarus et al. (2012) the banking sector in Kenya has experienced higher interest rates. For instance, annual average lending rate for the last six years 2006-2010 was 14%. In Kenya interest rates were liberalized in July 1991 with the aim of improving efficiency in the intermediation process by reducing the interest rate changes (Tarus et al., 2012). Nevertheless, according to the authors this seems not to have been realised in Kenya.

However, Beck et al. (2010) noted that the Kenya's net interest rates are at par with most of Sub-Saharan Africa countries. Further, Beck et al. (2010) noted that while there are some countries in Latin America that have higher interest rate changes than Kenya, a recent

comparison shows that Kenya was ranked number 8 out of 37 countries in terms of interest rates sensitivity in 2008 and 12th of 66 countries in net interest margins from 2001-2009. According to Beck et al. (2010), in general, the evidence still points at the Kenya's interest rates margins as being relatively high. In addition, in the last two decades studies have shown that commercial banks in Sub-Saharan Africa, including Kenyan commercial banks listed in NSE, are more profitable than the rest of the world (Ongore & Kusa, 2013). According to the authors, one of the major reasons behind high return in the region was investment in risky ventures and high interest rates charged by the commercial banks, which are majorly influenced by CBR.

It is believed that the stock returns of commercial banks can be affected both by internal and external factors (Al-Tamimi & Hussein, 2010). The external factors are sector wide or country wide factors, such as central bank interest rates which are beyond the control of the commercial banks and affect their stock returns (Yin & Yang, 2013). However, most empirical studies of sensitivity of central bank interest rate and stock returns tend to focus mostly on financial institutions from developed economies whose stock markets are perceived to be somehow efficient (Fernandez-Perez et al., 2014; Yin & Yang, 2013).

In developing and underdeveloped economies, such as Kenya, capital markets are believed to be underdeveloped and most businesses and individuals depend on commercial banks for financing their investments (Tarus et al., 2012). Given the importance of banking institutions in facilitating financial intermediation, several studies have been conducted in Kenya on the sensitivity of interest rates, mostly to identify the determinants of interest rate spread (Tarus et al., 2012; Were & Wambua, 2014). Others such as Irungu (2013); Okech (2013) and Githae (2012) have looked at the effect of interest rate spread on the financial performance of

commercial banks in Kenya. Few or no studies have been done in Kenya to determine the influence of changes in central bank interest rate on the stock returns of listed commercial banks. This study therefore, made an effort to bridge the literature gap by answering the following research questions: how is the trend of changes in the central bank interest rates in Kenya over the nine year period, from 2006 to 2014? ; what is the extent of stock market returns of listed commercial banks in Kenya over the nine year period, from 2006 to 2014?; and how do changes in central bank interest rates contribute to the stock returns of listed commercial banks?

1.3 Objective of the Study

The aim of this study was to investigate the sensitivity of central bank interest rate changes on stock returns of listed commercial banks in Kenya for nine year period, from 2006 to 2014.

1.4 Value of the Study

1.4.1 Contribution to Theory

Stock returns and financial performance analysis of commercial banks has been of great interest to theory building, management practise and policy makers since the Great Depression Intent the 1940's (Ongore & Kusa, 2013). This study is important in determining the theory behind the central bank interest rates changes and its influence on stock returns of listed commercial banks in Kenya.

1.4.2 Contribution to Policy

The regulatory bodies that are responsible for the licensing, regulation and supervision of operators in the banking sector and capital markets, including policy formulation, monitoring and evaluation, can make informed decisions on the basis of the findings of the study.

1.4.3 Contribution to Practice

Determination of the relationship between commercial banks' stock returns and their financial risk parameters, such as central bank interest rate changes, can provide financial managers and commercial banks' regulators with additional information, including information on how to improve commercial banks' stock market returns through better management of central bank interest rates volatility.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The rate of interest is simply defined as the cost of credit, normally expressed as a percentage of the credit, and is therefore governed by supply of and demand for credit. The banking system through its ability to give credit and offer savings services can be influenced, and to some extent their stock returns are affected, by the interest rate levels. Hence this chapter reviewed literature on interest rates and stock returns of listed commercial banks in Kenya, starting with the theories of interest rates and its sensitivity in Kenya. The chapter further reviewed literature on stock returns and how the returns relate to the changes in interest rates. In addition, the chapter also reviewed the empirical findings on interest rates and stock returns, concluding with the current status of stock market and commercial banks in Kenya.

2.2 Theoretical Review

Several alternative theories of interest rate have been developed (Brillant, 2014). According to De-Juan (2007) the theories can be classified into classical and post Keynesian.

2.2.1 Classical Theory

The classical theory, also referred to as loanable funds approach, was proposed by classical economist, Keynes who held the view that economic activities were guided by some kind of invisible hand i.e. through the self interest motive and price mechanism, and that government interference was unnecessary (Keynes, 1937; Ohlin, Robertson, & Hawtrey, 1937; Wray, 1992). According to loanable funds theory, the interest rate is simply the price of loan, and is therefore governed by the supply of and demand for loan, with no influence from the government economic policies, such as the banking system (Brillant, 2014).

Although the theory has a certain amount of validity, it has been criticized by many economist, such as Keynes (1937) and Ohlin et al. (1937). The critics argued that the theory assumes money is borrowed entirely for the purchase of capital assets which is not true, since money can also be borrowed for purchase of consumer goods.

2.2.2 Post Keynesian Theories

The main proponents here are Keynes, John Hicks and Basil Moore. The post Keynesian's theories, also referred as monetary theories, include Keynes liquidity preference, neoclassical synthesis ISLM and Basil Moore's Horizontalist or endogenous money (De-Juan, 2007; Wray, 1992). Keynesian liquidity preference theory, which is also called the monetary theory of interest rate, was put forward by Keynes in 1936 (Brillant, 2014). In other words, Keynes rejected the classical loanable funds theory when he defined the interest rate as a reward for not hoarding money (Wray, 1992). Unlike the Keynesian liquidity preference theory where interest rate is determined by the stock equilibrium, in the ISLM model, however, the interest rate is determined at the point where the goods, bonds and monetary markets are in equilibrium. In other words, interest is determined as a result of both stocks equilibrium and the flows equilibrium (Gerrard, 1995).

The Horizontalist theory claims that the central bank of a country is in a position to set nominal rates and even real rates of interest by adjusting the nominal rates to the actual or expected inflation rate (Lavoie, 1996). The theory argues that what the rate of interest exactly depends on is not really significant provided it does not necessarily increase with the level of economic growth. The Horizontalist highlights that the rate of interest can be

determined exogenously with respect to the income generation process (Rochon, 2006). Hence, the theory asserts that the rate of interest is exogenous.

In other words, the Horizontalist theory argues that the base interest rate is not a market phenomenon, but a bureaucratically determined rate, which may be more or less influenced by the political class and national financial systems (Lavoie, 1996). The country's central bank has discretionary control over the interest rate. However, according to the theory, the central bank only indirectly influences the monetary aggregates and it can fix the base interest rate with absolute precision, within the limits of existing conventional financial knowledge (Frijns et al., 2015). Consequently, base interest rate is an administered rate, analogous to the rates set by managers of oligopolies selling their products, such as commercial banks.

2.3 Interest Rates in Kenya

The Kenyan interest rate determination scenario is best explained by the Horizontalist theory. Section 36 (4) of the Central Bank of Kenya Act specifies that the Central Bank shall publish the lowest rate of interest it charges on loans to banks and that rate shall be known as the Central Bank Rate. The level of the base lending rate is reviewed and announced by the Monetary Policy Committee at least every two months and its movements, both in direction and magnitude, signals the monetary policy stance. The central bank rate is the base interest rate for all monetary policy operations in order to enhance clarity and certainty in monetary policy implementation. The Kenyan commercial banks, including the listed ones, then set their individual lending rates based on the central bank base lending rate, which may have either a positive or negative influence on the individual commercial banks' performance.

Therefore, this study attempted to determine the effect of the central bank base lending rate on the stock returns of listed commercial banks in Kenya.

In line with recommendations from the International Monetary Fund, Kenya has pursued a conservative monetary policy focused on keeping inflation and interest rates low. The central bank targets a core inflation rate of 5% over the medium term ("Country Reports: Kenya," 2015). According to the Country Reports of 2015, in 2006, the new policy instrument that introduced the Central Bank Rate (CBR) was implemented, which the Central Bank uses to lend money overnight to commercial banks. The rate also serves as a signalling instrument for monetary policy. The CBR is set by the central bank's Monetary Policy Committee at monthly meetings.

However, the Central Bank of Kenya also sets other interest rates, such as interbank rate, Repurchase (Repo) rate and the treasury bills rate. The Interbank rate is the rate of interest charged on short-term loans made between banks. Banks borrow and lend money in the interbank market in order to manage liquidity and meet the requirements placed on them. The interest rate charged depends on the availability of money in the market, on prevailing rates and on the specific terms of the contract, such as term length.

On the other hand, whenever the banks have any shortage of funds they can borrow it from the central bank. Repurchase (Repo) rate is the rate at which the central bank lends short-term money to the banks against securities. A reduction in the repo rate will help banks to get money at a cheaper rate. When the repo rate increases borrowing from the central bank becomes more expensive. It is more applicable when there is a liquidity crunch in the market. The reverse repo rate is the rate at which the banks park surplus funds with reserve bank,

while the repo rate is the rate at which the banks borrow from the central bank. It is mostly done when there is surplus liquidity in the market.

According to Central Bank of Kenya (2014a), during the years, the Monetary Policy Committee has tried to retain the policy rate, the Central Bank Rate (CBR), at lower level to continue anchoring inflationary expectations and ensure price stability. Liquidity management by the CBK through open market operations have been geared towards ensuring that the short term interest rates are aligned to the CBR to ensure continued stability in the interbank money market. Furthermore, the weighted average interbank interest rate has been fluctuating over the periods due to fluctuations of liquidity in the money market, supported by net redemptions of Government securities and Government payments (Central Bank of Kenya, 2014a). According to the report, the Repo rate also has been fluctuating with a declining trend from an average of 9.38 percent in December 2013 to an average of 8.29 percent in December 2014. Therefore, in addition to determining the effect of the CBR on the stock market returns of listed commercial banks in Kenya, the study also attempted to identify the trend of central bank interest rates in Kenya for the fifteen year period, from 2000 to 2014.

2.4 Determinants of Stock Returns

It is believed that the stock returns of commercial banks can be determined both by internal and external factors (Al-Tamimi & Hussein, 2010). According to the authors, the main internal determinants of stock returns include bank size, liquidity and industry's concentration. In addition, Tarazi and Gallato (2012) found that the external factors such as annual changes in GDP, inflation rates, exchange rates and interest rates are the major external determinants of commercial banks stock returns. However, according to Brigham

and Gapenski (1996), the required rate of return of an investment is determined by, the economy's real risk-free rate of return plus the expected inflation rate during the holding period plus a liquidity premium plus a risk premium.

The required rate of return therefore depends on both systematic and the unsystematic risk. The two elements are separated clearly when the return for a single stock is related to the return on the market portfolio of all stocks. Of the two, systematic risk is the most dominant determinant of the required rate of return. The market offers the investor a risk premium in excess of his risk less rate of return for taking systematic risk (Lumby & Jones, 2015). According to Elton, Gruber, Brown, and Goetzmann (2009) it is the systematic risk that is important to the investor. Therefore, beta values in CAPM, which measures the systematic risks, can be computed using the market model since forces within the market and the stock market have common significant influence on changes in prices in many if not all stocks. Nevertheless, CAPM has a number of assumptions and some of them do not hold in the real world, but it is still useful in evaluating financial decisions (Olweny, 2011). Hence, this study attempted to analyse the extent of stock returns of listed commercial banks in Kenya over the nine year period, from 2006 to 2014 using CAPM, and determine how stock returns relates with central bank interest rates.

2.5 Empirical Studies on Interest Rate and Stock Returns

Commercial banks occupy a significant position in the transmission of monetary policy through the financial market (Ballester, Ferrer, & González, 2011). Commercial banks have assets and liabilities which are interest rate sensitivity, hence, the commercial banks' stock returns are believed to be particularly responsive to changes in the central bank base lending rates. However, according to Yin and Yang (2013) there have been only a few studies that

focus on how bank stocks react to monetary policy shocks, such as central bank base lending rate. The few studies that have been done, starting with the earlier one of Thorbecke and Alami (1994) who found out that commercial banks stock returns are more sensitive to central bank interest rate changes than stocks returns of other industries, have given varied empirical results.

Another early study by Madura and Schnusenber (2000) tested how monetary policy changes, including federal or central bank interest rates affect bank stock returns over 1974–1996. They found out that there is a strong inverse relationship between the central bank interest rate changes and commercial bank stock returns. Applying a different data set that covered 1988–2007, Yin et al. (2010) confirmed the inverse relationship between commercial bank stock returns and central bank interest rate changes. Furthermore, they found that commercial banks' stock returns only respond to surprise changes in the central bank base lending rates. Yin and Yang (2013), studying the listed commercial banks of United States for the 10 year period, from 1988 to 2008, also found out that the bank stock returns are negatively related with changes in the central bank interest rates, which was consistent with prior empirical findings in the literature.

In addition, Yin and Yang (2013) argued that the existing literature on commercial bank stock returns and changes in the central bank interest rate changes suggests that the influence of central bank interest rate changes on commercial bank stock returns vary across banks, depending on specific bank characteristics. Madura and Schnusenber (2000) also found out that stock returns for large banks and banks with low capital ratios are more sensitive to monetary policy changes such as central bank interest rates. Therefore, the purpose of this study was to investigate the effects of central bank interest rate on the listed commercial

banks stock returns in Kenya for fifteen year period, from 2000 to 2014 using CAPM to calculate the banks' stock returns and equation 4, adopted by Yin and Yang (2013), for regression analysis.

2.6 Stock Market and Listed Commercial Banks in Kenya

Kenya has one stock market, the Nairobi Securities Exchange (NSE), where the debt securities of the listed corporations, such as bonds and preference shares are bought and sold. The market has increased in activities over the past periods, attracting even state-owned corporations, which are partially owned by the government (Randa & Gubbins, 2013). The authors argued that the securities' market is booming with securities' prices rising strongly in the past. The stable average market capitalization over the five-year period of the study, with a high growth of 40% recorded in 2010, driven by strong performances across all sectors of the economy in the same year. Nonetheless, the NSE index has shown some slight decline, but with an increase of 1 186 points (36.5%) in 2010. The stability of the stock exchange is believed to allow listed corporations, such as commercial banks, to have an option of raising external finance through the stock market. Hence, the stock market activity, measured the return, may have an impact on the individual stock returns of listed commercial banks.

On the other hand, the banking sector in Kenya has undergone noteworthy transformation over the last decade or so (Randa et al., 2013). The authors argued that these reforms have improved the resilience of the sector to domestic and international shocks. They also noted that the state presence in the sector has been shrinking, and with it the share of non-performing loans in bank portfolios. Randa et al. (2013) also argued that Kenyan banks are doing better than their counterparts in Sub-Saharan Africa in terms of the share of lending to small and large corporations. Though the weighted average of commercial banks' lending

rates have been increasing over the study period, from the lowest of 13.32% in 2007 to 20.04% in 2011, the overall domestic credit has been grown by 124%, from Kshs. 671 Billion in 2007 to Kshs. 1.5 Trillion in 2011 (Central Bank of Kenya, 2014e). On the other hand, the outstanding debt of the government has also increased by 82%, from Kshs. 715.5 Billion in 2007 to Kshs. 1.3 Trillion in 2011.

In the recent economic recovery strategy, the government of Kenya acknowledged that the commercial banks in Kenya, including the listed banks, were experiencing difficulties that would undermine the achievement of the objectives set out in the strategy, including inadequate market returns from the banking sector and persistence of wide interest rate sensitivity leading to a high cost of credit (Beck et al., 2010). Therefore, this study attempted to contribute towards the economic recovery strategy by identifying the trend of the central bank interest rates in Kenya for nine year period, from 2006 to 2014, analysing the extent of stock market returns of listed commercial banks in Kenya over the nine year period, from 2006 to 2014 and investigating the sensitivity of the central bank interest rates on stock market returns of listed commercial banks in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a review of the research methods which were applied in this study. The chapter represents the overall research methodology which includes the type of data to be gathered and its origin, the way the collected data was analysed and interpreted, and how it helped in answering the study research questions (Altinay & Paraskevas, 2008). The chapter begins by presenting the research design followed by the population and sampling. The chapter further outlines the data collection tools and procedures and the data analysis techniques, including the models of diagnostic tests to be used in this study.

3.2 Research Design

The study applied a hybrid of cross sectional and longitudinal surveys. Rindfleisch, Malter, Ganesan and Moorman (2008), in their study of cross-sectional versus longitudinal, argue that both the designs have limitations and a combination gives a strong output. Therefore, the combination of the techniques allowed the researcher to investigate effects of debt financing across corporations and also get the trend over a period of nine years from 2006 to 2014.

3.3 Target Population

The population was defined in terms of the number of commercial banks established under the banking Acts of Kenya as at June 30, 2014. The population frame data was from the Central Bank of Kenya. According to the Central Bank of Kenya (2014a) report, there are 44 established commercial banks in Kenya by June 30, 2014. Eleven of the 44 commercial banks have been listed on the Nairobi Securities Exchange.

The sample size for the study was made up of the eleven listed commercial banks in Kenya selected using stratified non-probability sampling technique. The non-listed commercial banks were excluded from the study, since their stock returns are not based on their stock market performance. According to Zhang, Wang, Su, Liu, Shen and Bi (2007), a census study is more straightforward and suitable to be used in a local setting where the population frame exists with certainty. The study therefore, used a census technique and collected data from all the 11 listed commercial banks in Kenya.

3.4 Data Collection Tools and Procedures

The study used secondary data both in the computation of individual stock market returns and the relationship between the changes in CBK rate and stock returns. The CBK interest rates were collected from the Central Bank of Kenya official website while the stock returns variables for the period from 2006 to 2014, to be used in equation 1 and 3 were collected from the Nairobi Securities Exchange (NSE) market. The stock market variables included the daily ordinary share prices of the listed commercial banks, daily NSE price index and the published financial statements of the banks, all for the period from 2006 to 2014.

3.5 Data Analysis

The descriptive statistical analysis method was used to identify the trend of central bank interest rates and analyse the extent of stock returns of the listed commercial banks in Kenya over the nine year period, from 2006 to 2014. A regression analysis was also done using the capital asset pricing model (CAPM). CAPM is one of the best measures of stock returns for listed firms such as commercial banks, since the measure incorporates risk factor as one of the variables for determining stock returns (Lumby & Jones, 2015). Consequently, this study

applied the CAPM model given below to calculate the individual monthly stock returns for listed commercial banks over the study period.

$$E(R_j) = R_f + (R_m - R_f) B_j \dots\dots\dots 1$$

Where $E(R_j)$ represents the required rate of return of a security, and R_f represents the risk-free rate. While, R_m is the expected market return and B_j represents the systematic risk of security j. Capital Asset Pricing Model therefore can be used to calculate the expected stock return for ordinary shares of firms, such as listed commercial banks. Risk premium is the market risk premium $(R_m - R_f)$ weighted by the index of the unsystematic risk B_j of an individual security. If the general economy is static and industry characteristics are unchanged, and management policies have continuity, the measure of B_j of a security is relatively stable when calculated for different time periods. If the condition of stability does not exist, then the value of B_j varies over different periods. Beta of the security is calculated as:

$$B_j = \frac{Cov(j, m)}{\delta^2 m} \dots\dots\dots 2$$

Where $Cov(j, m)$ represents the covariance between the security's return and the market, and $\delta^2 m$ is the market variance systematic risk is referred to as market beta.

On the other hand, panel regression model of the form used by Yin and Yang (2013) was used to determine the relationship between stock returns of listed commercial banks in Kenya and the changes in the central bank interest rates, applying the regression method. The basic model of the relationship between bank stock returns and changes in the central bank interest rate as suggested by Yin and Yang (2013) is as follows:

$$R_{it} = \alpha + \gamma_m \cdot R_{mt} + \gamma_u \cdot \Delta I_{ut} + \varepsilon_t \dots \dots \dots 3$$

Where R_{it} is the holding-period return of the ith bank stock from $t = 1$ to t ; R_{mt} is the market return, a control variable, representing the one-month holding period return of the market index on the day of the event (the announcement of a change in the central bank interest rate) and ΔI_{ut} is the component of central bank interest rate changes.

This helped in determining the effect of central bank interest rate on the stock returns of listed commercial banks in Kenya over the fifteen year period. To establish the significance of individual variables in the regression model, the T-test was applied at 95% levels of confidence. In addition, the data analysis was done using both the Microsoft Excel and Minitab software and the presentations and discussions of the results shown in chapter four.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis and results for the study which have been discussed under key sub-sections in line with the study objective. The presentation starts with descriptive statistics of the major variables, followed by Pearson correlation analysis for the regression model variables used in the study. In addition, the chapter presents the regression analysis results and discussion based on the research questions: how is the trend of changes in the central bank interest rates in Kenya over the nine year period, from 2006 to 2014? ; what is the extent of stock market returns of listed commercial banks in Kenya over the nine year period, from 2006 to 2014?; and how do changes in central bank interest rates contribute to the stock returns of listed commercial banks?

4.2 Descriptive Statistics

Table 4.1 illustrates the descriptive statistics for the Kenyan listed commercial banks' stock returns for the study period, from 2006 to 2014. The table shows that Equity bank's monthly stock return had the highest mean of 2.95, with the highest standard deviation of 1.46.

Table 4.1: Descriptive Statistics for Listed Commercial Banks Stock Returns

Variable	N	Mean	SE Mean	Std. Dev.	Minimum	Maximum
BBKrt	102	1.76	0.93	9.38	-26.50	38.44
CFCrt	102	1.42	1.25	12.66	-43.37	48.24
COOPrt	72	1.61	1.12	9.47	-15.31	55.12
DTKrt	102	2.18	1.00	10.14	-27.41	37.96
EQTYrt	100	2.95	1.46	14.6	-46.58	79.64
KCBrt	102	2.29	1.04	10.5	-27.71	64.62
NBKrt	102	-0.07	0.93	9.42	-21.57	28.88
NICrt	102	0.67	1.11	11.19	-42.83	35.4
SCBrt	102	1.42	0.64	6.43	-14.81	25.86

This indicates that the stock returns of Equity bank averagely performed better than all the other listed commercial banks in Kenya during the period, though it was more risky compared with the rest of the listed banks. On the other hand, National bank of Kenya (NBK) showed a mean of -0.07 indicating average negative performance over the same period, though with a maximum monthly stock return of 28.88 and a minimum stock return of -42.83. In addition, table 4.1 shows a negative minimum monthly stock return for all the banks, indicating that at some point all the banks experienced a decline on their performance.

Table 4.2 demonstrates the descriptive statistics for market return, Central Bank interest rate (CBR), treasury rate and NSE index change. The table shows that the Central Bank interest rate (CBR) has the highest mean of 9.29, with a maximum value of 18. However, the market return, which has the highest maximum return, has a low mean of 1.59, with a minimum value of -17.54. The change in NSE index illustrated the lowest mean score of 0.31 with a maximum value of 13.26 and minimum value of -17.91.

Table 4.2: Descriptive Statistics for Market Return, CBR, Treasury rate and NSE Index Change

Variable	N	Mean	SE Mean	Std. Dev	Minimum	Maximum
Market Return	102	1.59	0.69	6.99	-17.54	24.10
CBR	102	9.29	0.31	3.09	5.75	18.00
Treasury rate	102	7.97	0.35	3.48	1.60	2.56
NSE Index Change	102	0.31	0.50	5.06	-17.91	13.26

It is interesting to highlight that the mean (1.59) of the market return of listed commercial banks in Kenya is less than the risk free rate (7.97) which is the return on the Kenya Central Bank 91 days' treasury bills. Theoretically, the average return on ordinary shares of listed commercial banks (market return) should be greater than the risk free rate (Firer, Ross, Westerfield, & Jordan, 2012).

4.3 Correlation Analysis

Table 4.3 presents the Pearson correlation coefficients (r) for both the dependent and independent variables used in the study.

Table 4.3: Pair-wise Correlation Analysis of the Study Variables

	BBKrt	CFCrt	COOPrt	DTKrt	EQTYrt	KCBrt	NBKrt	NICrt
BBKrt	1							
CFCrt	0.2557*	1						
COOPrt	0.4000*	0.5354*	1					
DTKrt	0.3986*	0.3250*	0.3426*	1				
EQTYrt	0.4371*	0.2782*	0.2698*	0.3780*	1			
KCBrt	0.4423*	0.2821*	0.3553*	0.3908*	0.1519	1		
NBKrt	0.3838*	0.3208*	0.3633*	0.4558*	0.4215*	0.2885*	1	
NICrt	0.3781*	0.4700*	0.4808*	0.4009*	0.2498*	0.3941*	0.3869*	1
SCBrt	0.4520*	0.4071*	0.3787*	0.3203*	0.3430*	0.3316*	0.4186*	0.4004*
Market return	0.6829*	0.6664*	0.6956*	0.6830*	0.6392*	0.5961*	0.6750*	0.6951*
CBR	0.0336	-0.0072	-0.0988	0.0184	0.0176	0.1613	0.0022	0.0909
Treasury rate	-0.0846	-0.0637	-0.1278	-0.0817	-0.0407	0.012	-0.0353	-0.0349
NSE index	-0.1425	0.1541	0.0228	0.013	0.0532	0.0076	0.0063	-0.0255
NSE Index Change	0.7063*	0.4377*	0.6127*	0.5139*	0.4279*	0.5358*	0.5905*	0.5643*
CBR Change	-0.0574	0.1507	0.2306	0.1859	0.0382	0.1191	0.0171	0.1141

	SCBrt	Market Return	CBR	Treasury Rate	NSE index	NSE Index Change	CBR Change
SCBrt	1						
Market return	0.6411*	1					
CBR	0.1046	0.0543	1				
Treasury rate	-0.0691	-0.0851	0.7750*	1			
NSE index	-0.0289	0.0197	-0.2053	-0.2975*	1		
NSE In Change	0.6546*	0.8214*	0.1274	0.0237	-0.1265	1	
CBR Change	0.1778	0.1461	-0.0957	-0.1892	-0.0211	0.0948	1

The symbols* indicate significance at the 95% level of confidence, respectively

Table 4.3 shows that the stock return of all the listed commercial banks, except the Barclays Bank of Kenya (BBK) and Change in CBR are positively correlated, which indicates that if CBR increases then there is a possible increase in stock return of these banks, though not significant. In addition, Table 4.3 also shows a positive correlation between CBR change and market return, and a negative correlation between change in CBR and treasury bills rate and NSE index, which are insignificant. However, a significantly strong correlation exists between the stock returns of all the listed commercial banks and the market return and the NSE index. This suggests a possible influence of market return and NSE index on stock returns of listed commercial banks in Kenya.

4.4 The Trend of Central Bank Interest Rates in Kenya

In addition to the aforementioned descriptive statistics of the Central Bank interest rates, figure 4.1 illustrates the trends of the monthly Central Bank interest rates in Kenya from 2006 to 2014. The figure shows the trends of both the CBR and the 91 days' treasury bills rate (risk free rate).

Figure 4.1: The Trends of Central Bank Interest Rates

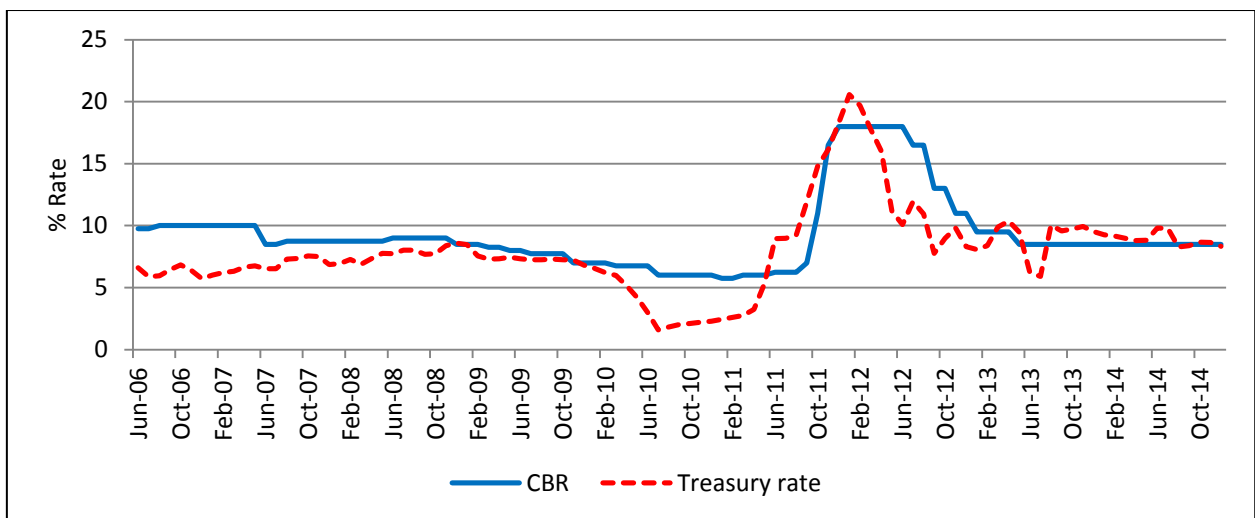
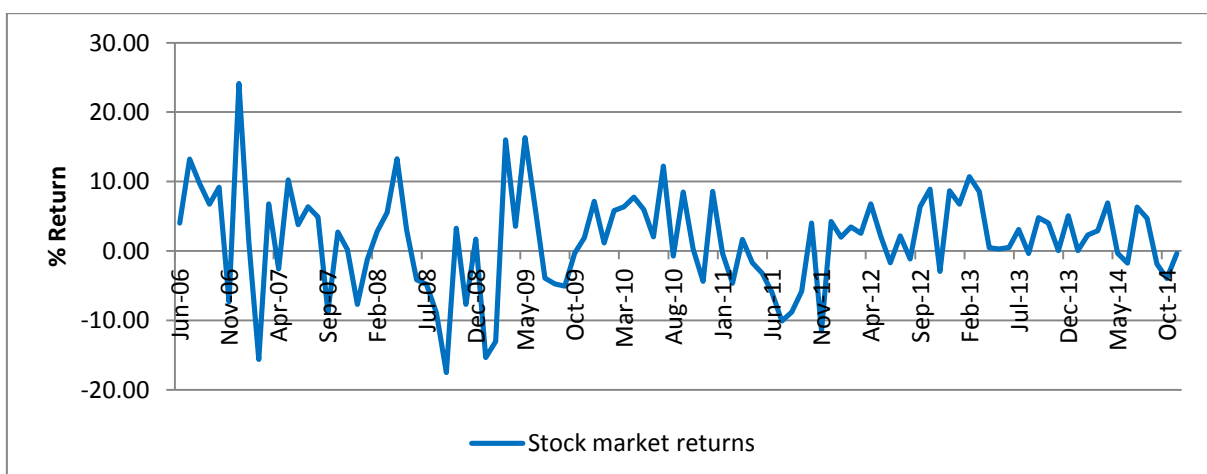


Figure 4.1 shows that both the trends of CBR and risk free rate are somehow similar. However, the risk free rate values are in most cases below the CBR values, except in early 2011 and late 2012. The CBR graph demonstrates a steady low decline trend from 2006 to 2009, with the lowest levels in 2010. Furthermore, the CBR graph shows a sharp increase from 2010, reaching the highest peak in mid 2011, followed by a decline in early 2012 and a steady downward trend towards 2014. The changes in the Central Bank interest rates have not been very drastic except between 2010 to 2013. Hence, the impact of these changes on the stock returns of listed commercial bank should be expected at minimal levels.

4.5 The Extent of Stock Returns of listed Commercial Banks in Kenya

Figure 4.2 demonstrates the extent of stock returns of listed commercial banks in Kenya from 2006 to 2014. The figure presents the monthly average stock returns for the listed commercial banks, which is equivalent to market return. The figure illustrates increases in mid 2006, 2007, 2008, 2009 and 2010. The years that stock returns decreased includes 2011, 2013 and 2014. Further, figure 4.2 shows that the highest stock returns were experienced in late 2006, while the lowest values were demonstrated in August 2008.

Figure 4.2: Extent of Stock Returns



4.6 Sensitivity of Central Bank Interest Rate Changes on Stock Returns of Listed Commercial Banks in Kenya

The main objective of the study was to investigate the sensitivity of central bank interest rate changes on stock returns of listed commercial banks in Kenya for the nine year period, from 2006 to 2014. The objective was achieved using the regression model 3, which applied the individual listed commercial bank's stock returns as the main dependent variable and change in CBR as the main independent variable, with the market return as a control variable. Table 4.4 presents the regression analysis results for study model three, using these main study variables at 95% level of confidence interval. The table demonstrates that there is a significantly strong negative sensitivity of monthly changes in central bank interest rates (CBR) on the stock returns of Barclays Bank of Kenya (BBK) from 2006 to 2014.

Table 4.4: Regression Analysis of Stock Returns versus Market Return and CBR Change

Term	Constant	Market returns coef.	CBR Change coef.			F-value	P-value	R-sq
			Increase	Constant	Decrease			
BBKrt	7.13*	0.944*	0.00	-7.54*	-7.54*	35.16	0.000	51.84%
CFCrt	-2.79	1.194*	0.00	2.43	3.21	26.49	0.000	44.78%
COOPrt	-0.23	1.069*	0.00	-0.31	1.99	21.93	0.000	49.18%
DTKrt	0.72	0.970*	0.00	-0.63	3.21	30.42	0.000	42.12%
EQTYrt	-0.06	1.366*	0.00	1.80	-3.02	23.28	0.000	42.12%
KCBrt	0.05	0.889*	0.00	0.82	1.50	18.09	0.000	35.64%
NBKrt	-0.13	0.927*	0.00	-1.27	-3.27	28.13	0.000	46.27%
NICrt	-2.19	1.111*	0.00	1.25	0.86	30.67	0.000	48.43%
SCBrt	-2.32	0.5802*	0.00	3.13*	2.86	24.63	0.000	42.99%

The symbols* indicate significance at the 95% level of confidence, respectively

Table 4.4 shows that a reduction on CBR causes a reduction of BBK stock return by -7.54, which is significant. While the coefficient (0.00) for the increase is taken as a reference point in the analysis. These results are reliable since the coefficient of the changes in CBR and the model's constant are significant at 95% interval level of confidence, with F-value and P-value

of the model being 35.16 and 0.000 respectively. In addition the R-square value is 51.84% indicating that 51.84% of changes in the stock returns of BBK are influenced by changes in CBR and market return which also have a significant strong positive coefficient of 9.44, with a significant constant coefficient of 7.13. The BBK stock return model results are consistent with the earlier findings from more developed economies like United States. Most of these studies such as Madura and Schnusenberg (2000), who tested how monetary policy changes, including federal or central bank interest rates affect bank stock returns over 1974–1996, found out that there is a strong inverse relationship between the central bank interest rate changes and commercial bank stock returns.

However, the table shows that the results of other listed commercial banks, except for the Standard Chartered Bank, illustrated insignificant positive and negative sensitivity of changes in CBR on their stock returns, though their regression models showed reliable results with significant F and P-values, with R-squares not less than 40%. Yin and Yang (2013) argued that the existing literature on commercial bank stock returns and changes in the central bank interest rate changes suggests that the influence of central bank interest rate changes on commercial bank stock returns vary across banks, depending on specific bank characteristics.

This may be the case in this study since the characteristics of listed commercial banks and stock market in Kenya is different with those for developed economies like the United States. In addition, some positive sensitivity results in table 4.4 also confirms the positive sensitivity finding of change in interest rate on stock returns of Thailand and Malaysian listed companies (Tarazi & Gallato, 2012). Further, Yin et al. (2010) applied a different data set that covered 1988–2007, for United States commercial banks and confirmed the inverse relationship between commercial bank stock returns and central bank interest rate changes. However, they

found that commercial banks' stock returns only respond to surprise changes in the central bank base lending rates, which was experienced only on few occasions in Kenya, during the study period.

Table 4.5 presents the results of a further regression analysis of stock returns of the individual listed commercial banks versus the actual Central Bank interest rate (CBR), treasury bills rate and the change in NSE index. The table demonstrates negative influence of CBR on stock returns of CFC Bank (CFC), Kenya Co-operative Bank (COOP) and National Bank of Kenya (NBK). This implies that an increase in CBR will cause a decrease in these banks' stock returns, though not significantly.

Table 4.5: Regression Analysis of Stock Returns versus CBR, Treasury Rate and NSE Index Change

Term	Constant	CBR Coef.	Treasury rate coef.	NSE Index Change coef.	F-value	P-value	R-sq
BBKrt	2.88	0.172	-0.391	1.303*	34.03	0.000	51.03%
CFCrt	3.46	-0.060	-0.228	1.104*	8.02	0.000	19.71%
COOPrt	5.34*	-0.518	0.017	1.337*	15.91	0.000	41.24%
DTKrt	3.22	0.216	-0.421	1.021*	12.37	0.000	27.46%
EQTYrt	4.18	0.052	-0.255	1.226*	7.30	0.000	18.58%
KCBrt	-1.16	0.821	-0.565	1.058*	14.66	0.000	30.70%
NBKrt	1.70	-0.275	0.055	1.121*	17.92	0.000	35.42%
NICrt	-0.48	0.526	-0.516	1.216*	16.01	0.000	32.90%
SCBrt	0.65	0.465	-0.475*	0.804*	27.26	0.000	45.49%

The symbols* indicate significance at the 95% level of confidence, respectively

Table 4.5 also illustrates positive sensitivity of CBR on stock returns of BBK, Diamond Trust Bank of Kenya (DTK), Kenya Commercial Bank (KCB), NIC Bank (NIC) and SCB. This implies that when the CBR increases, the stock returns of these banks are expected also to increase significantly.

On the other hand, the coefficients of the treasury rate are mostly negative, with positive coefficients for COOP and NBK. However, the only significant coefficient for treasury rate is for the Standard Chartered Bank (SCB), which is -0.475 implying that an increase in treasury rate may cause a reduction on stock returns of SCB by 0.475. In addition, table 4.5 shows that change in NSE index has a significant strong positive influence on all the stock returns of the listed commercial banks in Kenya. This is an additional confirmation of the results in table 4.4, which indicates that market indicators are the major predictors of stock returns of listed commercial banks in Kenya. The regression model results of table 4.5 are also reliable since the F-values of the models are all significant at 99% level of confidence with good values of R-square. This implies that the market return has a strong positive influence on the stock returns of listed commercial banks in Kenya.

Table 4.6: Regression Analysis of CBR Change versus NSE Index Change and Market Returns

Term	Constant	CBR Change coef.			F-value	P-value	R-sq
		Increase	Constant	Decrease			
NSE Index Change	-0.96	0.00	1.27	2.12	0.46	0.063	0.93%
Market return	-0.42	0.00	1.86	4.3	26.49	1.090	0.34%

The symbols* indicate significance at the 95% level of confidence, respectively

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The aim of this study was to investigate the sensitivity of central bank interest rate (CBR) changes on stock returns of listed commercial banks in Kenya for nine year period, from 2006 to 2014. The study calculated the monthly stock returns of the listed commercial banks using CAPM. The study then applied the monthly figures in the regression model, with the stock returns as the dependent variable and changes in central bank interest rates (CBR) as the main independent variable. Based on the findings of the study, this chapter concludes the research work by providing an overview of the key findings, implications, contribution to the literature and recommendations of the study. The chapter also provides suggestions for further research emerging from the study.

5.2 Summary of Findings

The key research findings gained from the study focused on the literature and study findings of main research objective. The main objective of the study was to investigate the sensitivity of central bank interest rate changes on stock returns of listed commercial banks in Kenya for nine year period, from 2006 to 2014. The study observed that commercial banks have assets and liabilities which are interest rate sensitivity, hence, the commercial banks' stock returns are believed to be particularly responsive to changes in the central bank interest rates. However, according to Yin and Yang (2013) there have been only a few studies that focus on how bank stocks react to monetary policy shocks, such as central bank base lending rate.

The literature findings from few studies that have been done, starting with the earlier one of Thorbecke and Alami (1994) found out that commercial banks stock returns are more

sensitive to central bank interest rate changes than stocks returns of other industries, have given varied empirical results. Madura and Schnusenberg (2000) found out that there is a strong inverse relationship between the central bank interest rate changes and commercial bank stock returns. Applying a different data set that covered 1988–2007, Yin et al. (2010) confirmed the inverse relationship between commercial bank stock returns and central bank interest rate changes. Furthermore, they found that commercial banks' stock returns only respond to surprise changes in the central bank base lending rates. Yin and Yang (2013), studying the listed commercial banks of United States for the 10 year period, from 1988 to 2008, also found out that the bank stock returns are negatively related with changes in the central bank interest rates, which was consistent with prior empirical findings in the literature.

The research finding of the study demonstrated that there is a significant strong negative sensitivity of average monthly changes in central bank interest rates (CBR) on the stock return of Barclays Bank of Kenya from 2006 to 2014. The finding implies that a negative change in central bank interest rate (CBR) is expected to cause a reduction of 7.74 times on stock return of BBK. This finding is in line with the major earlier studies mentioned above, such as Yin et al. (2010). However, the study results of other listed commercial banks, except for the Standard Chartered Bank, illustrated insignificant positive and negative sensitivity of changes in CBR on their stock returns, though their regression models showed reliable results. This is a confirmation of Yin and Yang (2013), who argued that the existing literature on commercial bank stock returns and changes in the central bank interest rate changes suggests that the influence of central bank interest rate changes on commercial bank stock returns vary across banks, depending on specific bank characteristics.

This may be the case in this study, since the characteristics of listed commercial banks and stock market in Kenya is different with those for developed economies like the United States. Further, Yin et al. (2010) also found that commercial banks' stock returns only respond to surprise changes in the central bank base lending rates, which was experienced only on few occasions in Kenya, during the study period. Interestingly, the research findings also showed a very significant strong positive correlation between stock return and market return, suggesting a major influence of market return on stock returns of all listed commercial banks in Kenya.

5.3 Conclusion

It can be concluded, from the study's findings, that the central bank base lending rate changes may have a strong negative sensitivity on the stock returns of listed commercial banks in Kenya depending on the characteristics of the individual bank. This may be so since Kenya is still under-developed and the main country's stock market (Nairobi Securities Exchange) is not very efficient, making most investment decisions being influenced by the macroeconomic factors such as changes in central bank interest rates and the individual bank's characteristics. In addition, it is very clear from the research findings that market returns and NSE price index is a major predictor of the stock returns of the listed commercial banks in Kenya.

5.4 Recommendations of the Study

The implications of these study results may have a major effect on the management of listed commercial banks, government policy makers and capital market regulatory bodies, both in Kenya and other developing countries. In addition, the finance students and academic

researchers may use the findings and recommendations to stimulate further research in this area. Therefore, based on the study findings, the following recommendations are made:

Listed commercial banks' managers to monitor, keenly, the changes in the central bank interest rates and make investors related decisions accordingly; the government, through the central bank of Kenya, to introduce changes in central bank interest rates which will enhance the general country's economy focusing on its effects on stock returns of listed commercial bank; and finally the Nairobi Securities Exchange regulators should encourage market activities and policies which will improve the market's efficiency, so that the changes in CBR may have minimal or no effect on stock returns of listed companies within the market.

Further, in the light of the findings of the study, two major recommendations are made for further research: a further research should be done to investigate the sensitivity of changes in central bank interest rates on the stock returns of all listed companies in Kenya; and another research should be done to determine all the major factors that influence stock returns of listed commercial banks in Kenya.

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APPENDICES:

Appendix I: List of Commercial Banks Listed In NSE

BARCLAYS BANK OF KENYA LTD

CFC STANBIC BANK LTD

CO-OPERATIVE BANK OF KENYA

DIAMOND TRUST BANK LTD

EQUITY BANK LTD

I& M BANK LTD

KENYA COMMERCIAL BANK LTD

NATIONAL BANK OF KENYA

NATIONAL HOUSING CO-OPORATION

NIC BANK LTD

STANDARD CHARTERED BANK