THE EFFECT OF LENDING INTEREST RATES ON STOCK RETURNS OF COMMERCIAL BANKS LISTED IN NAIROBI SECURITIES EXCHANGE IN KENYA

BY

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DECLARATION

This research project is my original work and has not been submitted for examination in any other university.

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This research project has been submitted for examination with my approval as the University supervisor.

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To my family for their continued support.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
B/M	Book to Market
CBK	Central Bank of Kenya
CBR	Central Bank Rate
DJIA	Dow Jones Industrial Average
EMH	Efficient Market Hypothesis
GDP	Gross Domestic Product
KSE	Karachi Stock Exchange
NSE	Nairobi Securities Exchange
P/E	Price Earning
ROI	Return on Investment
SPSS	Statistical Package for Social Science

ABSTRACT

The stock returns of quoted companies are greatly affected by changes in central bank rates which affect lending rates due to changes in the cost of capital. This fluctuation in interest rate has played a key role in the witnessed poor performance among not just the quoted but also the unquoted commercial banks. For the last five years, Kenya has witnessed bank failure Dubai Bank Ltd, Imperial Bank and Chase bank and more recently, Equity bank recorded decline in its stock returns and net profits and attributed this anomaly to interest rates. Even though this is the case, the correlation between stock returns and interest rate is unclear. The effects of changes in lending interest rate to the stock returns of financial institutions that are registered with Nairobi security/stock exchange is not clearly documented in Kenya. This study aimed to establish the effect of Lending rates on stock returns of commercial banks listed at the NSE between the year 2012 and 2016. By using an explanatory research design on secondary data collected between 2012 and 2016 as well as running ordinary least square and correlation analysis, the study established that an increase in lending rates leads to a decrease in stock returns of commercial banks listed at NSE. The study also established that deposit rates have a positive and significant effect on stock returns of commercial banks listed at NSE while inflation rate and GDP growth rate don't have a significant effect on stock returns. The study findings led to the recommendation that the commercial banks listed at NSE should come up with lending policy which aims to adjust the lending rates accordingly in order not to go beyond a point where it negatively affects its share prices. The study also recommends that there is a need for the commercial banks listed at NSE to adjust its deposit rates upwards but below the lending rates in order to attract more depositors thus improving its share prices at NSE and thus pushing stock returns upwards.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The relationship between the movements of stock prices and interest rates has received quite a lot of attention worldwide and has been empirically investigated by various scholars. The relationship between the two is of interest not only to economic theorists but also to investors Williams (2014) explains that the central association linking stock market return and interest charges is that interest rates and stock prices are negatively correlated. Stock market returns is negatively influenced by higher interest rates as a result of tightening monetary policy.

Uwuigbe, Olusegun and Agu (2012) assert that equity value is reduced by higher interest rates as shown by the dividend discount model. Further, they explain that fixed income securities are normally attractive as a result of the higher interest rates as an alternative to holding stocks. Higher interest rates minimize the propensity of financiers to invest and borrow in equities and consequently increase the price of transaction thus significantly influencing the return margin (Nirmala, Sanju & Ramachandran, 2011).

Lower interest rates due to expansionary monetary policies enhance the stock market (Uddin, 2009). The financial theory shows that valuation is determined by the returns of the opportunity cost of investing in something else. Interest rate is the key determinant of the

investment options. Kurihara (2006) underscores that interest rate is the cost that individuals pay for use of other persons money. This study will focus more on the lending rates that's fee charged by commercial banks in lending money out.

The stock market is a highly volatile area of business that requires investors to have relevant information in order to make informed decisions. However available information may be of minimal or adverse help if not well interpreted. Ologunde, *et al.* (2006) show various macroeconomic factors influencing the stock market to include; exchange rate, interest rates, gross domestic product, money supply and current account. Investors have high interest in knowing the share price of a company.

The stock price is an indicator of the firm's stock market performance and its variability indicates the macroeconomic stability. Iqbal (2001) asserts that the emerging economies are faced with macro-economic instability. He further, explains that interest rate and share prices are essential and very significant factors that determine the growth of an economy. Interest rates are regulated by the central bank. A study done in Kenya shows that lending rates averaged 16.37 percent from 1971 until 2015 with a highest rate of 32.28 percent recorded in April 1994 while the lowest rate of 9 percent recorded in January 1972.

Dehuan and Jin (2008) argue when banks are offering high interest rates for their deposits, the investors may choose to invest in the banks and thus a reduction in the share prices due to reduced demand for the same. On the contrary, lower interest rates brings about an

inverse impact of the demand for stocks thus results to increases of share prices as the investors will invest more on stock market than they will in banks due to the low interest rates. The correlation between dividend prices and interest estimate is of critical value to the economists as they play an incredibly critical part in the development of a nations' economy, (Aydemir & Demirhan, 2009).

Increased interest rates discourages investors in making a high risk equity investments as compared to lower riskier interest containing equity investments like treasury bills, preset deposits and saving permits, (Arango, Gonzalez & Posada, 2002). Pallegedara (2012) explains that the central bank uses interest charges as a means of regulating the rise in prices of a country. Variations in the proportions of interest by the central bank have inverse impacts on the stock market performances and mostly the stock prices. This thus eventually influences the overall economic performance of a country.

Arango, Gonzalez and Posada (2002) establish that determining the ultimate proportion of interest is a crucial choice of strategy that nations need to reflect on and review often. This is grounded on the understanding that liberalization augments competition and competence in the economic segment. An extensive deposit-lending interest rate spread could be symbolic of banking sector inadequacy or a replication of the level of financial development .Entrenched in the spread is information on the efficiency of financial intermediation, effectiveness, monetary policy impact, among others (Maredza, 2015).

1.1.1 Lending Interest Rate

Malhotra and Tandon (2013) define lending rate as rate that is charged by the commercial banks on loans borrowed. The rates normally should comply with the little and moderate term funding demands of the private segment. Kibe (2003) states that interest rates are typically distinguished according the objectives of financing and the creditworthiness of the borrowers. Countries differ in the terms and conditions on interest rates thus restraining their comparability. Uddin (2009) establish that interest rate exposure is significant to financial institutions. According to Shiller (2003), interest rate movements' impacts on the commercial bank performance to a great extent, the banks acknowledge this influence in the asset and liability management practices.

Ngugi (2014) explains that increase in funds rate by the central banks does not immediately impact on stock prices. Hassan Al-Tamimi and Mohammed Al-Mazrooei (2007) posit that an increase in funds rate discourages commercial banks from borrowing from the central bank has it becomes more expensive to borrow. Increased funds rate results to triple inverse impact. The first effect is increased lending rates which increases the mortgage interest rates and credit card which directly affects individuals and businesses. This consequently results to decreased amount of money that consumers can spend because household are left with minimal disposable income after they have spent on the bills. Williams (2014) assert that whereby borrowing is made expensive by the commercial banks companies normally do not borrow as much. He further shows that less business spending results to decreased revenues as it slows down company's growth.

Mirza (2008) explains that fluctuations in interest rates impacts not only on assets and liabilities value but also the overall value of the firm's strategies. According to Kurihara (2006), interest rate is the key determinant of individuals' willingness to lend and save cash.

Al-Shubiri (2010) underscored that interest rates changes frequently thus different loan categories offers numerous interest rates. The banks normally are faced with default risk; therefore they charge interest on loans so as to provide compensation for bearing such risk. According to Maredza (2015), Banks are faced with the risk of inflation, when they lend out money since prices of commodities may go up by the time money is paid back thus decreasing the original purchasing power of the money, thus banks will charge interest rate to protect future rises in inflation.

1.1.2 Stock Returns

Interest rate movement impacts greatly on consumers and businesses behavior and affects the stock market as well. The total sum of all forecasted cash flows discounted back to the present is one key method of valuing a company. Stock price is calculated as the sum of future discounted cash flows divided by available shares. Modern economies do perceive stock exchange as their backbone as it serves a crucial need of raising cost of capital at a reasonable cost as compared to other sources of finance (Walter, 1956).

According to Williams (2014), investors normally benefits from the variations in the charges for stock on the trade of shares on the market for stocks. These benefits accrue through appreciation of stock price or dividends paid out. Arango, Gonzalez and Posada (2002) state that dividend yield significantly influences share prices. They further explained that stock price fluctuates due to differing expectations that individual about a firm at different period of time. . Maredza (2015) explains that because investors have different expectations concerning a company they are willing to buy and sell shares at different prices.

The predetermined cash flows will drop significantly whereby a firm is seen to make less revenues and subsequently cutting back on its growth spending (Mirza, 2008). Arango, Gonzalez and Posada (2002) explain that whereby a large number of companies on the stock exchange experiences decline in stock prices the whole market and indexes that most individuals trade in will go down. Kurihara (2006) showed a significant correlation between investment ratios and share prices. These investment ratios in commercial banks are directly influenced by the prevailing lending interest rate and thus explaining the impact of lending rate on share prices.

1.1.3 Effect of Interest Rates on Stock Returns

The stock market efficiency is viewed as the backbone of the economic growth of any nation globally. Williams (2014) establishes that interest rate is amongst the key macroeconomic factors that directly impacts on economic growth. Lending interest rates

fluctuations have significant effects on most of internal variables including; liquidity, earnings and stability, and also technical influences such as forecasting. This directly impacts on a firm's equity ratio as well as its profitability (Mirza, 2008).

Shauna (2003) establishes that investors shift their money from the securities exchange to the commercial banks when the banks raise depositors' interest rate. This tends to reduce the stock prices and ultimately stock returns of the banks due decreased demand for shares by the investors. High interest rates negatively influences the profit margin of the commercial banks as it results to decreased share prices and stock returns due low demand for the same (Ologunde, Elumilade & Asaolu, 2006). Kurihara (2006) showed an inverse association between interest rates paid on deposits and the commercial banks Stock returns.

Williams (2014) underscores that commercial banks will earn a high interest income when they increase their lending rates. This will be reflected on the banks profit, as a result there will be increased demand the banks shares which subsequently raises the share prices thus raising the stock returns. According to Kurihara (2006), lending rates affects companies' performance negatively as it decreases amount available for the firm's growth leading to reduced profits and thus low share prices leading to low stock returns.

1.1.4 Listed Commercial Banks In Kenya

Commercial banks, Central bank of Kenya, foreign exchange bureaus and Non-banking financial institutions all form a conglomerate of Kenya's financial sector. The Kenyan banks are typified by open structures working in unstable settings. According to Williams (2014), the continued existence of banks relies on their capability fitting with the settings. In Kenya commercial Banks play an important role as intermediaries. They mobilize resources by getting funds from investors, savings and sale of assets and distribute the money in terms of loans. Loans are issued at a higher interest rate than the rate on savings so that they realize profits (Central Bank of Kenya, 2016). However, loans expose banks to the greatest level of risk that requires a good corporate governance to mitigate it. There are 40 licensed commercial banks in Kenya out of which 10 are indexed at the Nairobi Securities Exchange, (NSE, 2016).

According to NSE, stocks of listed banks started recording declines, sending the industry into a low as the market reacted to the surprise closure of the banks. The announcement by some financial institutions such as Imperial Bank, Dubai Bank Kenya and Chase Bank being placed in receivership, discouraged some investors from buying banks' stocks and bonds. A 4.8 billion shilling bond for Chase Bank was trading at the Nairobi Stock Exchange and 2 billion shillings debt was to commence trading the day Imperial bank was placed under receivership. National Bank Ltd., a listed bank at the NSE, had been forced to repeat its bad debt position and provisioning, and to fire five top managers over the imperfect disclosures. The listed lender was not placed under receivership because it

posed a systemic risk to the banking sector due to its market share and it was also the banker for all governmental departments (NSE, 2016).

1.2 Research Problem

Banks core business is to lend. Funds available for lending are from deposits from banks customers and funds from the investors via share capital. Any investor is interested in payout or from selling the share if the prices go up. Lending rate would therefore influence the shareholders decision (Mirza, 2008). Hypothetically, if interests are high the net profit would be high thus high dividend payout, high demand for the shares and thus an increase in the share price. A study by Lee (1998) shows that interest movement's influences on earnings and overall value of the banks. The banks acknowledge this influence in the asset and liability management practices. Kurihara (2006) explains that fluctuations in interest rates impacts not only on assets and liabilities value but also the overall value of the firm's strategies.

The stock returns of quoted companies are greatly affected by changes in central bank rates which affect lending rates due to changes in the cost of capital. Kirui, Wawire & Onono (2014) for instance argued that the share prices subsequently stock returns of quoted commercial banks at NSE were greatly affected by the changes in CBR. This fluctuation in interest rate has played a key role in the witnessed poor performance among not just the quoted but also the unquoted commercial banks. For the last five years, Kenya has witnessed bank failure Dubai Bank Ltd, Imperial Bank and Chase bank

(CBK, 2016). More recently, Equity bank recorded decline in its stock returns and net profits and attributed this anomaly to interest rates (KBA, 2017).

Studies carried out by Hsing (2004); Arango (2002); Gazi and Mahmudul (2009) found a considerably negative association linking share charges and interest rates. On the other hand Gupta *et al* (1997) showed that correlation linking the proportion of interest and share prices steadily shifts from considerably negative to no correlation and also found an insignificant positive relation between the two variables. A study by Chirchir (2012) found an insignificant association between share prices and interest rates. Nyamute (1998) investigated the influences of macroeconomic factors like the supply of money, rates of inflation, and terms of trade and rates of interest on dividend yields and established a positive link connecting the rates of interest and the cost of share.

Asiemwa (1992) sought to ascertain the influence of investment ratios on the performance of shares of listed firms in the NSE. The study showed that share prices are significantly affected by dividend for each stock, interest for each share, stock returns and dividend yield. Results revealed a strong and significant relationship between share prices and investment ratios. These investment ratios in a bank are directly affected by the prevailing lending interest rate and therefore a connection between the lending rate in a bank and share prices of the bank ought to exist, though it is not yet defined.

Locally, a few studies have been done that have dwelt on interest rates and firms performance. Mwaura (2003) investigated the influence of cost of liquidity on the monetary performance of listed manufacturing companies in the NSE. Ogutu (2007) sought to establish the volatility of interest rates in the Kenyan economy. Kibe (2003) investigated the associations linking the rates of interest rate extension and profitability of financial institutions. All the above studies none have examined the relationship linking earning rates for lending and share prices of listed financial institutions in the NSE.

The correlation involving share returns and interest rate is an important issue as international trade has tremendously increased and global financial markets are integrating to a large extent. Stock market crises are preventable through the control of lending rates whereby the lending rates and stock prices relate. Chirchir (2012) explains that the influence of variations in lending interest rate to the share returns of financial institutions that are registered with Nairobi security/stock exchange is not clearly documented in Kenya. This study aimed to meet its mandate by finding an answer to the following research question: What is the impact of lending interest rates on stock returns of financial institutions listed in the Nairobi Securities Exchange?

1.3 Research Objective

To investigate the impact of lending interest rates on share returns of financial institutions indexed in Nairobi securities exchange in Kenya.

1.4 Value of the Study

Despite the fact that the research results intend to add value to the existing body of knowledge it will also be of significance to the potential investors and policy makers as they will get to understand the interactions between stock prices and interest rates which will assist them in making investment decisions.

Investors of any organization are interested in the return of investment. This study is expected to help the investor know how his investment is affected by the lending rates changes. It can assist the investor to be involved in setting the lending rates rather than leave the role to the regulators of the bank. The CBK is the regulator of the lending rates for all commercial banks. Findings of this study would enable the commercial banks to know how changes in the lending rates have an effect on the economy as they do affect the ROI and thus the ability to attract the investors. The performance of the share price is crucial for the management. A decrease in the share price might be interpreted as poor management. Thus the, management of the bank would be interested in knowing how movement of the lending will affect the share prices. The findings provide a benchmark upon which other related studies can be done on the performance of firms and interest rate.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This part contains the reviewed past studies and the theories that guide the research, the previous empirical studies carried out relevant to the study. Finally the study presented the summary of the major ideas for the study.

2.2 Theoretical Review

The study involves the reviewing of various interest rate theories such as efficient market hypothesis, behavioral finance theory, loanable fund theory and theory of financial intermediation.

2.2.1 Efficient Market Hypothesis

Advanced by Fama (1970), the theory explains that share prices replicate existing information in the market. According to the theory it impossible to make abnormal returns based on available information. Therefore, investors wanting higher returns can only do so by making riskier investment decisions as opposed to market timing and stock selection. In his contribution to the EMH, Jensen (1978) underscored that it is hard to attain above irregular returns in a well-organized market as the cost of a share indicates

all the existing information. Nevertheless, new information in the market causes reaction by the investors which results in a variation in share prices.

Fama (1970) identified three types of market competence; better shape of effectiveness, good shape of effectiveness and poor shape of cost of effectiveness. In weak form efficiency stock prices reflects all the historical information. Jensen (1978) postulated that historical information cannot be used to estimate or value current stock prices since it is already reflective in current prices. Good shape of effectiveness illustrates that share prices reflects all historical and past information on stock as well as the publicly accessible and available information (Fama, 1970). Strong form market efficiencies reflect all the available information that is public and private information as well as historical information. Therefore there exists no arbitrage opportunities for abnormal profits as a result of using historical and publicly available information (Fama, 1970).

Efficient market theory has been utilized to analyze macro-economic variables and asset prices around the world. Fama and Schwert (1977) using the efficient market hypothesis notes that investor's competition to acquire information would lead to reflection of macroeconomic variables to be fully incorporated in the stock prices. Beechey, Gruen and Vickery (2000) argued that using the effective market assumptions, stock markets should reflect available macro-economic information. In addition, stock market prices should reflect expectations in the market and thus policy makers should not be worried about national macroeconomic policies since it is captured in the stock prices.

The theory is relevant in explaining dividend costs of companies indexed on stock trading. It argues that the available information in the market such as information on interest rates determines the share prices of stocks. It argues that if changes in interest rates are announced, this information would quickly be assimilated in stock prices at the NSE, as financiers seek to adjust their investment needs. The theory provides a link between information on interest rate and the share price which this study builds on.

2.2.2 Behavioral Finance Theory

Kahnemann and Tversky (1979) outlined behaviors and biases that hinder human beings from acting rationally. According to the theory investors are irrational and motivated by emotions in making investment decisions. Oslen (1998) characterized the irrational investors' behaviors as representative heuristic, anchoring, and the availability bias. According to him these bias cause people to hold stereotypes, make decisions founded on a whimsical starting point, and evaluate the probability of an occurrence based on similar past events.

The theory argues that there are two types of investors; regime A one are those who base their decisions on expectations of returns to mean revert based on the changes in interest rate and regime B investors who not expect a decrease in stock prices even after interest rates changes. Investors base their decisions on expectations of returns to imply regress. If it doesn't take place this does not happen the stock prices will have a delayed reaction to the income. Consequently, when regime A shareholders' expect interest rates to imply

regress and the same does not happen, then stock prices will rise. Regime B investors on the other hand base their investment decisions on security prices. They expect security prices to continue in a given trend. Consequently, regime B investors will not expect a decrease in stock prices even after interest rates changes. Similarly, the DHS model assumed investors are informed and uninformed. Informed investors use judgmental biases while uninformed investors do not.

The theory hinges to the study by linking the decisions of the investors in regard to their expectations in changes in interest rates and the expected returns in terms of the share prices. The theory argues that there are two types of investors ; group one are those who base their decisions on expectations of returns to mean revert based on the changes in interest rate and group two investors who not expect a decrease in stock prices even after interest rates changes. The theory presents two relationships between interest rates and share prices, negative and positive relationships.

2.2.3 Loanable Funds Theory

The theory equates the supply of savings with the demand of loans (Seccareccia, 1998). Lavoie (1997) expounded on Wicksell's theory loanable funds he postulated that the proportion of interest in an economy is influenced by the need and supply for loanable funds. Further he showed that money borrowed is solely for investing in capital assets; the decision to invest is made wholly on interest; and that the decision to spend is entirely on interest. Keynes (1936) viewed money as a liquid asset and interest rate to be the loss

of the liquidity. Keynes (1936) made assumptions that people hold money for three reasons: to transact, for precaution purposes and for speculative purposes. Thus if people were to hold on money irrespective of the reason, the interest rate will be affected as the supply of the money will decrease.

The theory is relevant in linking interest rates to share prices. According to the theory, higher interest rates on loans would put off borrowers for acquiring new loans which would lead to lesser investable funds for the public thus making the price of publicly traded stocks to fall due to decreased demand. A rise in the cost of interest would also increase the cost of capital for companies resulting in lower expected future earnings. Share prices and indices would thus plunge as well. The theory provides a negative link involving the rates interest and the cost of shares of stocks.

2.3 Determinants of Stock Returns

There are various factors that influence stock returns. Macro-economic as well as other factors influence stock market prices. The section presents the determinants of stock returns.

2.3.1 Inflation Rates

Inflation rates have an influence on the prices of stocks and returns. According Uwuigbe, Olusegun and Agu (2012), inflation has significant and strong impacts on the cost of shares of indexed companies at the Nigerian securities exchange. In a similar study

conducted in the Shanghai Stock Exchange, Jin Dehuan and Zhenhu Jin (2008) found that inflation rates significantly correlates with share profit returns in the preceding years. As the levels of inflation rates rose in Shanghai, the stock prices reduced leading to low stock returns.

Irmala, Sanju and Ramachandran (2011) found that inflation rates had a very strong negative correlation to the stock prices for companies listed in India. High inflation rates in India led to a decline in the stock returns and stock market capitalization in Indian Stock Exchanges.

2.3.2 Exchange Rates

Khan and Amanullah (2012) found that exchange rates had an insignificant effect on the levels of stock prices and returns for listed companies. When a longer period of time is considered, it negatively determines stock returns. Similarly, George and Anokye (2008) found an inverse relationship between exchange rates and the returns for companies listed in the Ghana Stock Market.

2.3.3 Gross Domestic Product

GDP is the total production in the economy (Uddin, 2009). The total output of any economy has a direct positive relationship to the stock returns listed in the stock exchange. Nathan Taulbee (2005) argued that GDP significantly determines the share prices of stocks. Al-Tamimi (2007) found a considerably positive link involving dividend

prices and gross domestic product in New Zealand's stock markets. In the study conducted over the period 1990 to 2003, the levels of gross domestic product had a positive relationship to the levels of stock returns.

2.3.4 Money Supply

In a study utilizing Singapore Stock Exchange prices and returns, Jin Dehuan and Zhenhu Jin (2008) found that there existed a relationship between the levels of cash supply in the market and the cost of shares in the stock exchange. Sanjeet Sharma (2011) on the other hand also argues that stock prices and returns were influenced by the levels of money supply in the economy. Fisher (2009) established that cash supply has a considerable effect on the dividend earnings in Britain.

2.4 Empirical Review

Amarasinghe (2015) in the study, lively connection involving the rates of interest and the price of shares: Practical facts from the Colombo share market utilized monthly data for a seven year period spanning 2007 – 2013 using all share price index data and interest rates. Granger Causality tests and regression analysis were conducted on the data after stationary tests using Augmented Dickey Fuller Tests. The study found that a considerable connection involving the rates of interest and the cost of share market.

Abugri (2008) in a cross sectional study spanning 4 countries in South America i.e. Brazil, Argentina, Mexico and Chile utilized monthly data collected for the period 1986 to 2001. Using Granger Causality Tests and Co integration to establish if interest rates movements can be employed to forecast share market price movements. The study found a considerably negative connection with the rates of interest and the cost of shares in Brazil, Argentina. In Mexico however, the connection involving the rates of earnings and share prices was positive while in Chile there was no considerable impact of interest rates on stock prices.

Thang (2009) aimed to find out how interest s rate affected share prices of listed firms in Thailand. The study conducted time series analysis using VECM model and established a negative link involving the rates of earnings and share costs in the market of Thai firms.
Gazi and Mahmudul (2009) also linked stock index and interest rates. They compared data across 15 countries using panel data approach. The study relied on data collected on a monthly basis and the findings revealed that the rate of interest rate had a considerably negative link with the cost of shares.

Fisher (2009) sought to link money supply and performance of the share prices among the listed firms in Britain. The study used secondary data and analyzed using ordinary least square regression model. The study findings revealed that there is a strong and significant association between levels of money supply and share prices of listed companies.

Muriuki (2014) in the analysis of macro-economic variables of inflation and interest rates on stock market returns in the Nairobi Securities Exchange utilized monthly data on interest rates for 91 day treasury bills and stock market prices. Using OLS regression analysis to establish link involving treasury bills rates and stock market prices, Muriuki (2014) found that interest rates and inflation rates combined contributed to a 66.9% change in the stock market prices. In addition, the study found that there was a positive relationship between interest rates and stock market prices for companies listed in the NSE.

Kitati, Evusa and Maithya (2015) linked macro-economic variables Stock Market Prices of firms listed using data collected on a five year period between 2008 and 2012 and found that interest rates had a negative effect on the stock market prices. Interest rates influenced individual company shares as well as the all share index and the 20 share index in the Nairobi Securities Exchange.

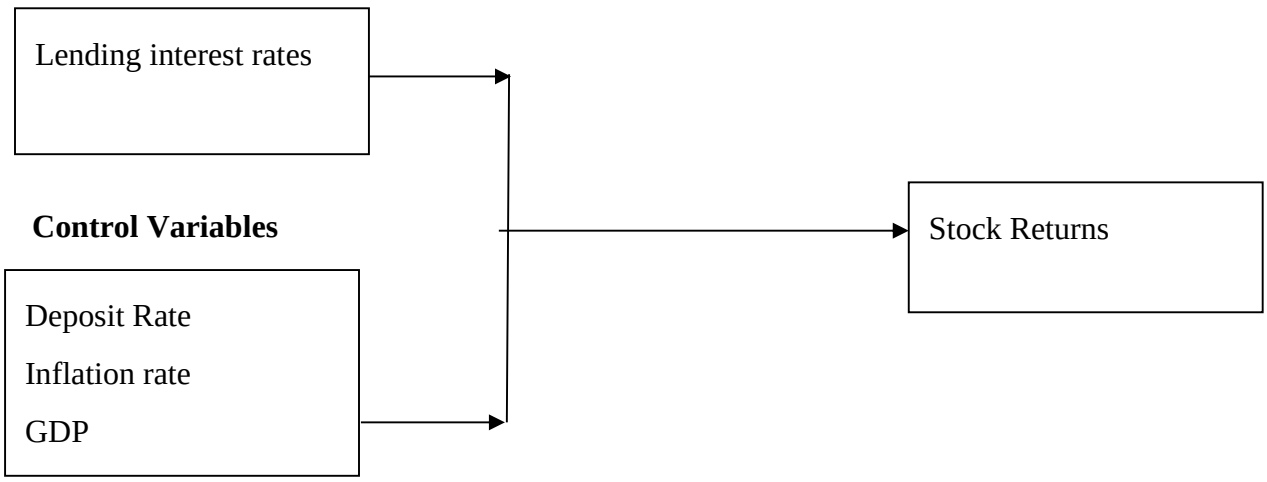
Njeri (2014) sought to establish the effects of lending rates on the share prices of commercial banks listed in the NSE. The study adopted an explanatory research design and conducted a census on all the listed commercial banks. Using secondary data and regression analysis, it was established that there is a strong inverse relationship between the lending interest rate and the commercial banks' share prices.

Kilongosi (2005) also linked the net bank interest rate to its risk by focusing on the listed commercial banks in Kenya. The study used secondary data to achieve its objectives. Bothe correlations and regressions were used to achieve the study objectives. It was established that that there is a need for the commercial banks to focus on non-interest rate related activities so as to boost their financial performance.

2.5 Conceptual Framework

The conceptual framework presents a figurative representation of the relationship among the variables. The lending interest rate is the independent variable while the stock returns are the dependent variable. In addition, it is hypothesized that deposit rate, inflation rate and the GDP growth are control variables. This relationship is as shown in Figure 2.1.

Figure 2.1: Conceptual Model



2.6 Summary of Literature Review

A couple of researchers have studied the effect of macroeconomic variables on stock market performance, or related topics, both locally and internationally. Very few studies have focused on interest rates alone, and specifically the commercial bank lending rate. Also, most of these studies have been carried out in developed markets, such as the USA or Europe and Australia. In Kenya, researchers such as Mwaura (2003), Chirchir (2012) and Kibe (2003) have researched on similar topics.

This literature review evidently established a research gap in Kenya, given that most of the studies conducted in this area were done in developed markets. Most of these studies were done on similar macroeconomic factors such as the foreign exchange rate, inflation, and other interest rates without really focusing on the bank lending rate. This study aimed at establishing the effect of the interest rate on stock returns of commercial banks listed in the NSE.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, target population, sampling design, data collection procedures and procedures for data analysis.

3.2 Research Design

This study utilized an explanatory research design. Mugenda and Mugenda (2003) argue that that an explanatory research design brings a causal relationship between variables. In order to establish how lending interest rates affect stock returns, this research design was appropriate for this study. It helped answer the how research question of this study.

3.3 Population and Sample Design

The study population consisted of the listed commercial banks at the NSE which were 11 according to the NSE (2016) report. All the elements within the population were included in the study, thus the study conducted a census survey. This is because they were few.

3.4 Data Collection

The study utilized secondary data for a period of five years spanning January 2012 – December 2016. This duration was justified for use because it is long enough and

excludes major events which influence stock returns such as political instability. Data relating to share prices was obtained from the NSE. The lending interest rate was generated from commercial banks listed in the NSE.

3.5 Data Analysis

After data had been collected, it was edited and analyzed using descriptive and regression analysis. This helped bring out the relationship in the study variables.

3.5.1 Regression Model

A multivariate regression model was used. The model is as indicated:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where Y – Stock returns of commercial banks

X_1 – Lending Rates

X_2 – Deposit Rates

X_3 – GDP

X_4 – Inflation

ε – Is the error term

β – Predictor variables coefficients

Table 3.1 Measurement of Study Variables

Variable	Type	Measurement
Lending Rates	Independent Variable	Banks' lending rates (%)
Deposit Rates	Control Variable	Banks' deposit rates (%)
GDP	Control Variable	Economic growth rate (Percentage)
Inflation	Control Variable	Annual rate of inflation (Percentage)
Stock returns	Dependent Variable	(Share Price year 1- Share Price Year 0) + Dividends / Share price year 0

3.5.2 Diagnostic Tests

Before running the ordinary least square regression model, the study conducted tests to ensure adherence to classical linear regression assumptions that is Autocorrelation and Multicollinearity. Multicollinearity test ensured that the independent variables are not highly correlated. Durbin Watson test was used to test for Autocorrelation.

3.5.3 Test of Significance

The study conducted an ANOVA test to test the significance of the regression model while t statistic was used to test the significance of the beta coefficients. Testing was undertaken at 95% confidence intervals.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter presents the findings of the data collected and analyzed. The presentation is for the trend analysis, descriptive findings and inferential analysis. Secondary data was used in the study. The data was collected on a five year period from the year 2012 to the year 2015. The stock returns were calculated using the share prices. Daily closing share prices were used to average the annual share prices for each listed commercial bank.

4.2 Trend Analysis

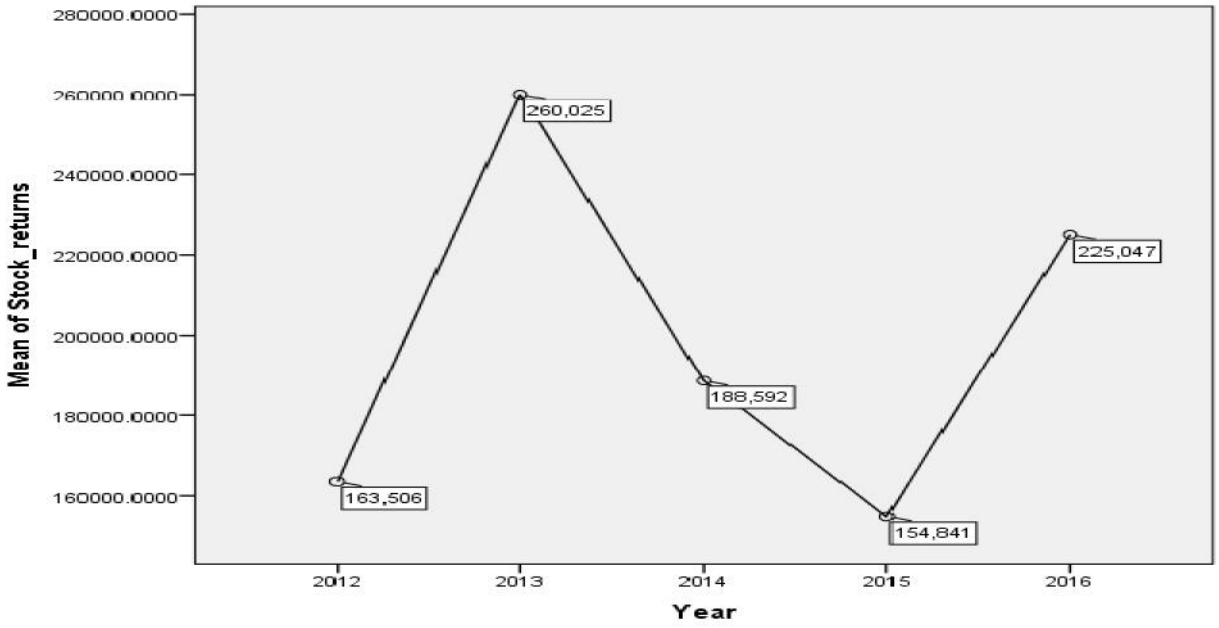
The study established the trends to indicate the changes in stock returns, lending rates, deposits rates, GDP growth rate and inflation rate for the study period spanning five years. The trends are important in establishing the stationarity of the data used.

4.2.1 Trend Analysis of Stock Returns

The daily share prices and dividends from the year 2012 to 2016 was averaged to obtain the annual share price which was used to calculate the stock returns for each commercial bank in the study period. The trends of the stock returns were then established as shown in Figure 4.1. The findings shows that there was an increase in stock returns of listed commercial banks between the year 2012 and 2013 followed by a steady decrease

between the year 2013 and 2015. In the year 2015 and 2016, there was an increase in the stock returns of the listed commercial banks. The decrease between 2013 and 2015 can be attributed to political anxiety due to the 2013 general elections.

Figure 4.1 Trend Analysis of Stock Returns

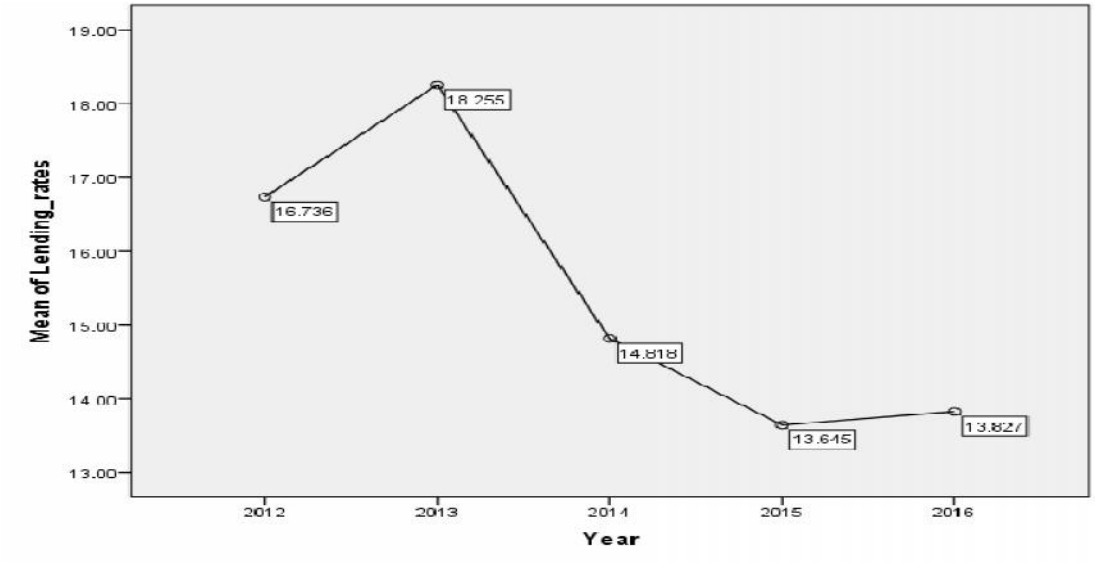


Source: Research Findings

4.2.2 Trend Analysis of Lending Rates

The trends for lending rates reveals that the on average, the lending rates increased in the year 2014 after which it adopted a decreasing trends which can be attributed to the introduction of the law that regulates the lending rates by commercial banks in Kenya.

Figure 4.2 Trend Analysis of Lending Rates

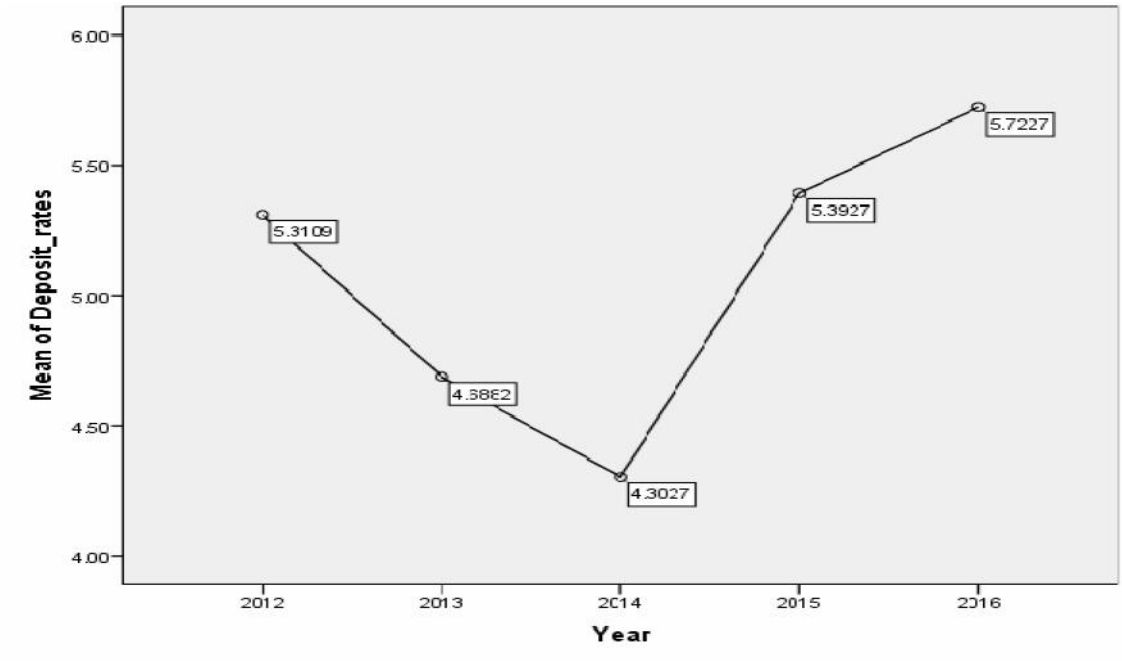


Source: Research Findings

4.2.3 Trend Analysis of Deposit Rates

The trends for deposit rates were unsteady in the study periods. There was an average decrease between the year 2012 and 2014 but from 2014 the rates increased. The decrease in deposits rates can be attributed to the political instability in the year 2013.

Figure 4.3 Trend Analysis of Deposit Rates

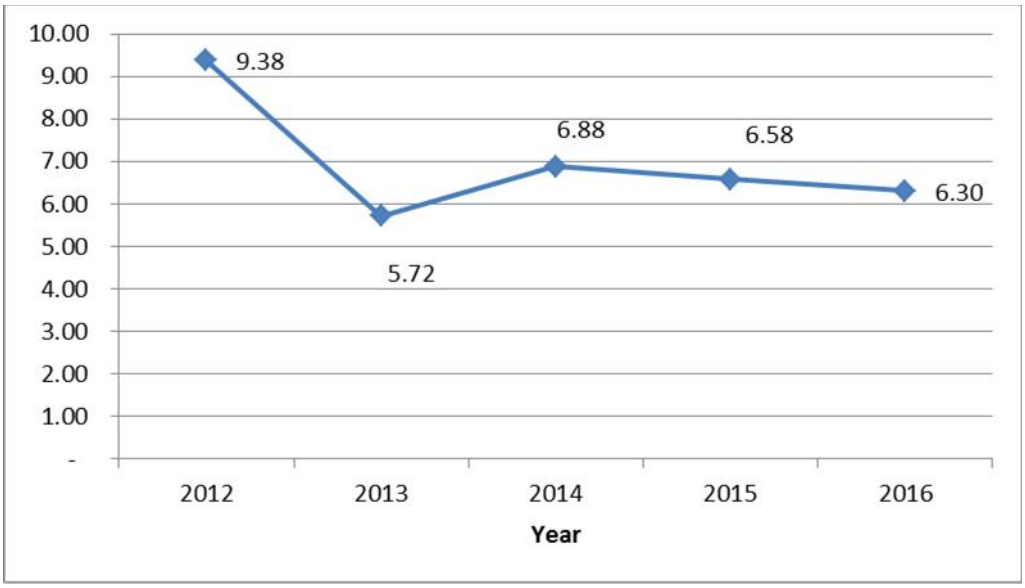


Source: Research Findings

4.2.4 Trend Analysis of Inflation Rate

The Kenyan inflation rate has unsteady increasing and decreasing trends in the study period. An increase in the inflation rate in in the year 2013 and 2014 can be attributed to disturbance in macro environment as a result of political instability. However, in the subsequent years, the decrease is gradual.

Figure 4.4 Trend Analysis of Inflation Rate

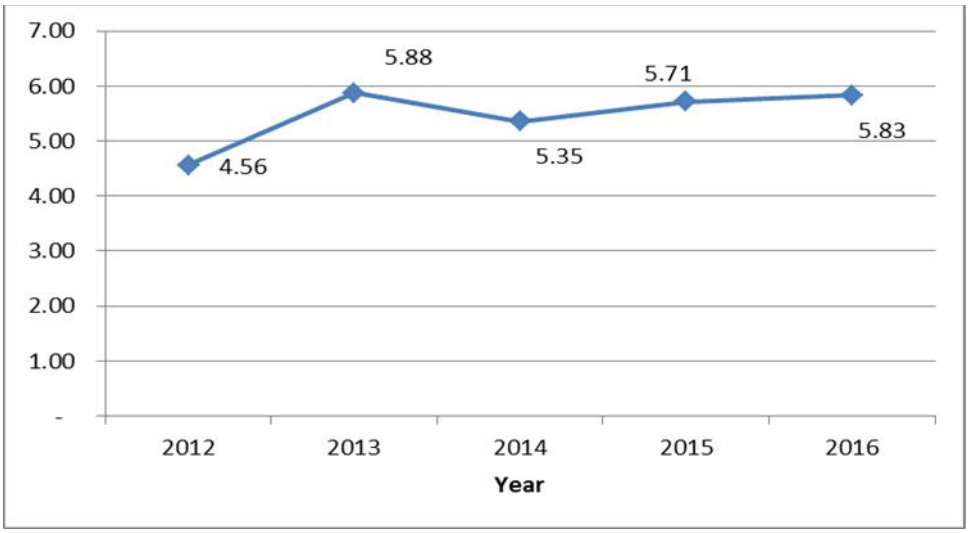


Source: Research Findings

4.2.5 Trend Analysis of GDP Growth Rate

The results show that between the year 2012 and 2013, there was an increase in the GDP growth rate which decreased between the year 2013 and 2014. However, stability started to come in the Kenyan economy later after the elections of 2013 hence the economic growth started to increase, though at a small rate.

Figure 4.5 Trend Analysis of GDP Growth Rate



Source: Research Findings

4.3 Diagnostic Tests

Since the data collected was over a time period of 5 years, there was a need to conduct diagnostic tests to establish whether it was free from multicollinearity and Autocorrelation before it was used to run a regression model. A variance inflation factor method was used to test for multicollinearity while Durbin Watson was used to test for Autocorrelation.

4.3.1 Multicollinearity Test

Multicollinearity inflates the standard errors and gives spurious results hence it is necessary to test for presence of multicollinearity before running an ordinary least square regression model. This study used a variance inflation factor (VIF) method to test for

multicollinearity of the study variables. The results as shown in Table 4.1 revealed that there was no presence of multicollinearity since all the values of VIF were below 10. This implies that the use of OLS in estimating the effect of lending interest rates on stock returns of commercial banks listed in Nairobi securities exchange in Kenya was justified.

Table 4.1 Variance Inflation Factor Test of Multicollinearity

Variable	**1/VIF**	**VIF**
Lending rates	0.83	1.204
Deposit rates	0.84	1.191
Inflation	0.72	5.64
GDP	0.83	6.075

Source: Research Findings

4.3.2 Test of Autocorrelation

One of the assumptions of classical linear regression model is that the error term of the regression model need not be correlated over time. There was hence a need to establish whether the error terms were correlated over time and hence Durbin-Watson test was adopted to establish the presence of Autocorrelation. A value of 2 reveals absence of autocorrelation, a value less than 2 reveals positive autocorrelation while a value greater than 2 reveals presence of negative autocorrelation. The findings in Table 4.2 revealed that the DW statistic was approximately 2 hence there was no problem of autocorrelation. The study hence adopted an ordinary least square regression model.

Table 4.2 Durbin Watson Test of Autocorrelation

Test	Statistic
Durbin Watson	1.998

Source: Research Findings

4.4 Descriptive Analysis

The descriptive results indicated that the mean stock returns recorded in the study period was 198402.4 with a standard deviation of 439460.8 which showed a high variation in stock returns of listed commercial banks in the study period. The lending rates had a mean of 15.45 percent with a small standard deviation of 2.33 which showed a small variation in lending rates over the study period. Furthermore, the deposit rates had a mean value of 5.08% with a standard deviation of 1.29 percent which also revealed that deposit rates had a small variation in the study period. The average inflation rate was 6.98 percent with a standard deviation of 1.28 which also revealed a small variation in the inflation rate in the study period. The findings also showed that a mean GDP value of 5.48 was recorded in the study period with a small variation as shown by a standard deviation of 0.48.

Table 4.3 Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Stock returns	55	157.3512	2040172	198,402.41	439,460.84
Lending rates	55	12.2	20.8	15.46	2.33
Deposit rates	55	3.09	8.54	5.08	1.30
Inflation	55	5.7	9.4	6.98	1.29
GDP	55	4.6	5.9	5.48	0.48

4.4 Correlation Analysis

The study established the association between lending interest rates and stock returns of commercial banks listed in Nairobi securities exchange in Kenya using a Pearson Correlation analysis. The study findings presented in Table 4.4 established that lending rates have a negative and significant correlation with stock returns of commercial banks listed at NSE (R = -0.244, Sig = 0.007). This implies that an increase in lending rates is associated with a decrease in stock returns of commercial banks listed at NSE.

The findings also showed that deposit rates have a positive and significant correlation with stock returns of commercial banks listed at NSE (R = 0.253, Sig = 0.002). This implies that an increase in deposit rates leads to an increase in stock returns of commercial banks listed at NSE.

Inflation rate has a negative but not significant correlation with stock returns of commercial banks listed at NSE (R = -0.059, Sig = 0.668). This implies that an increase in inflation rate is associated with an insignificant decrease in stock returns of commercial banks listed at NSE.

Furthermore, GDP growth rate has a positive but not significant correlation with stock returns of commercial banks listed at NSE (R = 0.055, Sig = 0.690). This implies that an increase in GDP growth rate is associated with an insignificant increase in stock returns of commercial banks listed at NSE.

Table 4.4 Correlation Analysis

		Lending rates	**Deposit rates**	**Inflation**	**GDP**	**Stock returns**
Lending rates	Pearson Correlation	1				
	Sig. (2-tailed)					
Deposit rates	Pearson Correlation	-0.237	1			
	Sig. (2-tailed)	0.081				
Inflation	Pearson Correlation	0.093	0.069	1		
	Sig. (2-tailed)	0.501	0.616			
GDP	Pearson Correlation	-0.151	-0.01	-.988**	1	
	Sig. (2-tailed)	0.271	0.941	0.000		
Stock returns	Pearson Correlation	-0.244**	0.253**	-0.059	0.055	1
	Sig. (2-tailed)	0.007	0.006	0.668	0.690	
	N	55	55	55	55	55
** Correlation is significant at the 0.01 level (2-tailed).						

Source: Research Findings

4.5 Regression Analysis

The relationship between lending interest rates and stock returns of commercial banks listed in Nairobi securities exchange in Kenya was established using an ordinary least square regression model after the diagnostic tests indicated that the assumptions of OLS would not be violated. Regression analysis involved the analysis of coefficient of determination, model significance and model coefficients.

4.5.1 Coefficient of Determination

Coefficient of determination indicates the percentage changes in the dependent variable that is explained by the independent variables in a regression model. The regression analysis results presented in Table 4.5 indicates that the coefficient of determination (R squared) was 0.144 which implies that 14.4% of the changes in stock returns of commercial banks listed at NSE is explained by lending rates, deposits rates, inflation rate and GDP growth rate. The adjusted R square value of 0.076 revealed that 7.6% of the changes in stock returns of commercial banks listed at NSE is explained by only the significant variables in the study which are lending rates and deposits rates.

Table 4.5 Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.38	0.144	0.076	422528.8
Predictors: (Constant), GDP, Deposit rates, Lending rates, Inflation			

Source: Research Findings

4.5.2 Analysis of Variance (Model Fitness)

The study also established the model significance of the regression model linking lending rates to stock returns of commercial banks listed at NSE. The study findings revealed that the overall model was significant. The F statistic value of 4.104 was significant (Sig = 0.044 < 0.05), hence an indication that the model linking model linking lending rates to stock returns of commercial banks listed at NSE was significant.

To corroborate the findings, the study also used the F-distribution table to obtain the F-critical value ($F_{0.05\,(4,50)}$) calculated at α = 5%, using denominator degrees of freedom of 50 and numerator degrees of freedom of 4 and compared against the F-calculated value of 4.302. The rule of the thumb is that if F-calculated is greater than the F-critical, then the model is significant. The F-critical value from the F-distribution table was 2.557 which is less than 4.302 hence it confirms the previous findings that the model linking model linking model linking lending rates to stock returns of commercial banks listed at NSE was significant.

Table 4.6 ANOVA (Model Fitness)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.5E+12	4	3.7557E+11	4.104	0.044
Residual	8.93E+12	50	1.7853E+11		
Total	1.04E+13	54			
Dependent Variable: Stock returns					
Predictors: (Constant), GDP, Deposit rates, Lending rates, Inflation					

Source: Research Findings

4.5.3 Model Coefficients

The study findings presented in Table 4.7 established that lending rates have a negative and significant effect on stock returns of commercial banks listed at NSE (Beta = -49457.2, Sig = 0.044. This implies that unit increase in lending rates leads to a 49457.2 unit decrease in stock returns of commercial banks listed at NSE.

The findings also showed that deposit rates have a positive and significant effect on stock returns of commercial banks listed at NSE (Beta = 95593.78, Sig = 0.034). This implies that unit increase in deposit rates leads to a 95593.78 unit increase in stock returns of commercial banks listed at NSE.

Inflation rate does not have a significant control effect on the stock returns of commercial banks listed at NSE (Beta = -531036, Sig = 0.118. This implies that unit increase in inflation rate leads to an insignificant decrease in stock returns of commercial banks listed at NSE.

Furthermore, GDP growth rate does not have a significant control effect on the stock returns of commercial banks listed at NSE (Beta = 1402691, Sig = 0.128. This implies that unit increase in GDP growth rate leads to an insignificant increase in stock returns of commercial banks listed at NSE.

The significance of the coefficient using p values is corroborated by use of z or t values. At α =5%, z = 1.96 (note this being a large sample since n = 55). Z values for lending rates (2.005) and deposit rates (2.282) are greater than 1.96, hence statistically significant while that of inflation (0.719) and GDP growth rate (0.830) are less than 1.96 hence they are not significant.

Table 4.7 Model Coefficients

Predictor Variable	Beta	Std. Error	t	Sig.
(Constant)	11870257	7355831.73	1.614	0.113
Lending rates	-49457.2	17,506.98	-2.825	0.044
Deposit rates	95593.78	32,099.99	2.978	0.034
Inflation	-531036	333730.578	-1.591	0.118
GDP	1402691	906302.234	1.548	0.128
Dependent Variable: Stock returns				

Source: Research Findings

4.6 Interpretation of the Findings

The study findings showed that lending rates have a negative and significant effect on stock returns of commercial banks listed at NSE which implies that an increase in lending rates leads to a decrease in stock returns of commercial banks listed at NSE. The findings are consistent with the findings of a study by Amarasinghe (2015) who found that a significant relationship exists between interest rates and stock exchange prices in the Colombo Stock Exchange. The findings are also consistent with the findings of Abugri (2008) who found a negative relationship existed between interest rates and stock prices in Brazil, Argentina.

The findings also showed that deposit rates have a positive and significant effect on stock returns of commercial banks listed at NSE which implies that an increase in deposit rates leads to an increase in stock returns of commercial banks listed at NSE. The regression

results also showed that inflation rate does not have a significant control effect on the stock returns of commercial banks listed at NSE which implies that a an increase leads to an insignificant decrease in stock returns of commercial banks listed at NSE.

The findings are consistent with Jin Dehuan and Zhenhu Jin (2008) who found that inflation rates negatively correlates with stock returns whereby as the levels of inflation rates rose in Shanghai, the stock prices reduced leading to low stock returns. The findings are however not consistent with Irmala, Sanju and Ramachandran (2011) who found that inflation rates had a very strong negative correlation to the stock prices for companies listed in India.

The results also showed that GDP growth rate does not have a significant control effect on the stock returns of commercial banks listed at NSE which implies that an increase in GDP growth rate leads to an insignificant increase in stock returns of commercial banks listed at NSE. The findings are consistent with Nathan Taulbee (2005) and Al-Tamimi (2007) wo found that there existed a positive relationship between share prices and gross domestic product in New Zealand's stock markets.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusions and recommendations. It also presents the recommendation for further studies.

5.2 Summary

The trend analysis revealed an increase in stock returns of listed commercial banks between the year 2012 and 2013 followed by a steady decrease between the year 2013 and 2015. The trends for lending rates reveals that the on average, the lending rates increased in the year 2014 after which it adopted a decreasing trends which can be attributed to the introduction of the law that regulates the lending rates by commercial banks in Kenya. The trends for deposit rates were unsteady in the study periods. There was an average decrease between the year 2012 and 2014 but from 2014 the rates increased.

The Kenyan inflation rate has unsteady increasing and decreasing trends in the study period. An increase in the inflation rate in in the year 2013 and 2014 can be attributed to disturbance in macro environment as a result of political instability. However, in the subsequent years, the decrease is gradual. The trends for GDP growth rate showed that

between the year 2012 and 2013, there was an increase in the GDP growth rate which decreased between the year 2013 and 2014. However, stability started to come in the Kenyan economy later after the elections of 2013 hence the economic growth started to increase, though at a small rate.

The study regression results showed that lending rates and deposits rate significantly affect stock returns. Lending rates have a negative and significant effect on stock returns of commercial banks listed at NSE which implies that an increase in lending rates leads to a decrease in stock returns of commercial banks listed at NSE. Deposit rates have a positive and significant effect on stock returns of commercial banks listed at NSE which implies that an increase in deposit rates leads to an increase in stock returns of commercial banks listed at NSE.

The regression results also showed that inflation rate and GDP growth rate don't have a significant effect on stock returns. Inflation rate does not have a significant control effect on the stock returns of commercial banks listed at NSE which implies that a an increase leads to an insignificant decrease in stock returns of commercial banks listed at NSE. GDP growth rate does not have a significant control effect on the stock returns of commercial banks listed at NSE which implies that an increase in GDP growth rate leads to an insignificant increase in stock returns of commercial banks listed at NSE.

5.3 Conclusion

The findings of the study led to the conclusion that an increase in lending rates leads to a decrease in stock returns of commercial banks listed at NSE. The study also concludes that deposit rates have a positive and significant effect on stock returns of commercial banks listed at NSE which implies that an increase in deposit rates leads to an increase in stock returns of commercial banks listed at NSE.

Another conclusion by the study is that inflation rate and GDP growth rate don't have a significant effect on stock returns and that an increase in the variables does not significantly affect stock returns of commercial banks listed at NSE.

5.4 Recommendations for Policy and Practice

The findings of the study led to the recommendation that since an increase in lending rates leads to a decrease in stock returns of commercial banks listed at NSE, the commercial banks listed at NSE should come up with lending policy which aims to adjust the lending rates accordingly in order not to go beyond a point where it negatively affects its share prices.

The study also recommends that since deposit rates have a positive and significant effect on stock returns of commercial banks listed at NSE, there is a need for the commercial banks listed at NSE to adjust its deposit rates upwards but below the lending rates in

order to attract more depositors thus improving its share prices at NSE and thus pushing stock returns upwards.

5.5 Limitations of the Study

The study was limited to the commercial banks listed at NSE. The data used in the study was also limited to a five year period. However, this choice is justified since it included the year 2013 which can help distinguish between periods of shock in the economy as presented by the election of 2013 instability. Furthermore, the study focused on only two control variables whereas there can be many determinants of stock returns of listed firms. However, despite the limitations, all the statistical tests ensured that the study adhered to the necessary classical linear assumptions thus producing findings which can be relied on in making policy recommendations.

5.6 Recommendations for Further Research

The limitations of the study guided the proposition of areas for further study. The study was limited to the commercial banks listed at NSE. Future studies can aim to widen the scope to other listed firms at NSE and establish how commercial banks' lending and deposits rates affected their stock returns. The data used in the study was also limited to a five year period. Future studies can aim to increase the period to 10 years and above and establish whether similar findings can be obtained. Furthermore, the study focused on only two control variables whereas there can be many determinants of stock returns of listed firms Other future studies can focus on other control variables other than the two.

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APPENDICES

appendix I: Data Collection Sheet

Bank	Year	Lending Rates	Deposit Rate	GDP growth rate	Inflation rate	Stock returns
	2012					
	2013					
	2014					
	2015					
	2016					

Appendix II: Data

Bank	Year	Stock returns	Lending rates	Deposit rates	Inflation	GDP
1	2012	205.0889	19.3	6.74	9.38	4.56
1	2013	277.8507	19.7	3.43	5.72	5.88
1	2014	157.3512	13.8	4.38	6.88	5.35
1	2015	320.7954	13.7	5.66	6.58	5.71
1	2016	293.3063	13.8	6.38	6.30	5.83
2	2012	10642.04	15.5	6.52	9.38	4.56
2	2013	14404.41	17.8	3.89	5.72	5.88
2	2014	9219.364	13.6	3.57	6.88	5.35
2	2015	17204.18	13.6	3.41	6.58	5.71
2	2016	20037.22	13.3	4.51	6.30	5.83
3	2012	2811.078	15.5	4.31	9.38	4.56
3	2013	4145.271	18.3	4.83	5.72	5.88
3	2014	2821.719	13.9	3.97	6.88	5.35
3	2015	2423.585	14.4	7.18	6.58	5.71
3	2016	2774.851	14.1	4.69	6.30	5.83
4	2012	160641	17.9	4.87	9.38	4.56
4	2013	219632	19	5.24	5.72	5.88
4	2014	171800	14.1	6.23	6.88	5.35

Bank	Year	Stock returns	Lending rates	Deposit rates	Inflation	GDP
4	2015	157997.4	14.1	4.06	6.58	5.71
4	2016	163787.1	14.1	5.88	6.30	5.83
5	2012	1165565	15.1	7.08	9.38	4.56
5	2013	2040172	15.3	6.35	5.72	5.88
5	2014	1429336	12.5	4.47	6.88	5.35
5	2015	1120154	12.4	6.56	6.58	5.71
5	2016	1804515	12.2	6.93	6.30	5.83
6	2012	2909.845	20.8	4.41	9.38	4.56
6	2013	5579.806	20.8	6.61	5.72	5.88
6	2014	6672.347	13.9	5.94	6.88	5.35
6	2015	15648.37	13.7	6.78	6.58	5.71
6	2016	19853.89	16.4	4.91	6.30	5.83
7	2012	257728	17.5	4.54	9.38	4.56
7	2013	227142.1	16.3	4.49	5.72	5.88
7	2014	131634.9	13.5	4.58	6.88	5.35
7	2015	106500.1	13.1	7.08	6.58	5.71
7	2016	105238.7	13.2	3.58	6.30	5.83
8	2012	86592.96	15.4	6.03	9.38	4.56
8	2013	145828.5	16.9	4.85	5.72	5.88

Bank	Year	Stock returns	Lending rates	Deposit rates	Inflation	GDP
8	2014	168521.5	16.8	3.61	6.88	5.35
8	2015	136459.8	14	3.19	6.58	5.71
8	2016	133973.1	13.9	5.91	6.30	5.83
9	2012	10383.26	16	5.23	9.38	4.56
9	2013	12398.58	20.7	3.79	5.72	5.88
9	2014	7558.348	14.9	3.32	6.88	5.35
9	2015	10060.99	14.1	6.30	6.58	5.71
9	2016	12115.77	14	6.98	6.30	5.83
10	2012	14801.8	14.3	3.99	9.38	4.56
10	2013	20943.79	18.5	4.21	5.72	5.88
10	2014	15939.58	18.1	4.17	6.88	5.35
10	2015	12466.35	13.1	5.31	6.58	5.71
10	2016	13905.51	13.5	8.54	6.30	5.83
11	2012	86284.38	16.8	4.70	9.38	4.56
11	2013	169751.9	17.5	3.88	5.72	5.88
11	2014	130855.7	17.9	3.09	6.88	5.35
11	2015	124017.8	13.9	3.79	6.58	5.71
11	2016	199026.1	13.6	4.64	6.30	5.83