EFFECT OF INTEREST RATES CAPPING BY THE CENTRAL BANK OF KENYA ON THE BANKS LISTED ON THE NAIROBI SECURITIES EXCHANGE

BY
SYLVIA NYAKIO MBUA

UNITED STATES INTERNATIONAL UNIVERSITY
SUMMER 2017
EFFECT OF INTEREST RATES CAPPING BY THE CENTRAL BANK OF KENYA ON THE BANKS LISTED ON THE NAIROBI SECURITIES EXCHANGE

BY

SYLVIA NYAKIO MBUA

A Research Report submitted to the Chandaria School of Business in Partial Fulfilment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY

SUMMER 2017
DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States international University in Nairobi for academic credit.

Signed: ___________________________ Date: ___________________________

Sylvia Nyakio Mbua (ID 620508)

This proposal has been presented for examination with my approval as the appointed supervisor.

Signed: ___________________________ Date: ___________________________

Mr. Kepha Oyaro

Signed: ___________________________ Date: ___________________________

Dean, Chandaria School of Business
COPYRIGHT

All rights reserved; no part of this work may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the express written authorization from the writer.

Sylvia Nyakio Mbuja © 2017
ABSTRACT

The purpose of this study was to investigate the effects of the recent capping of interest rates by the Central Bank of Kenya (CBK) on the shares of the banks listed in the Nairobi Securities Exchange (NSE) of Kenya. The study sought to answer the following questions: How important is the bank interest rate as a factor when investing in bank shares? How attractive are bank shares after the interest rate cap was introduced? To what extent was the capping of interest rates an event study?

The research design for this study was observational survey and data was collected using checklists. Inferential statistics was used to study the correlations between the various variables. This study involved a small population of eleven banks listed on the NSE and a census was conducted. The validity and reliability tests were also discussed and once collected; data was analysed using IBM SPSS 22.0 statistical software for each research question as well as Microsoft Excel. A detailed analysis of the collected data was done and the findings presented by use of tables and figures generated from SPSS and Excel as the analysis tools.

On the consideration of lending rates by investors when making the decision to invest in bank shares, the study found that there was a negative correlation between lending rates and stock prices in third and fourth quarter of 2015 and a positive correlation between lending rates and stock prices in third and fourth quarter of 2016. When the interest rate cap was effected, share prices for the banks dropped significantly and this means that interest rates are a factor that affects the decision to invest in bank shares.

On the preference of bank shares after the capping of interest rates, the study found that the lending interest rates in 2015 did not significantly affect shares volume of almost all banks compared to 2016 where the Pearson correlation values were negative in the third and fourth quarter. The negative correlation in 2016 means that the lending interest rates negatively affect the volume of the bank shares. The trading volumes reduced after the interest rate cap was effected in September 2016 and most of the traded involved a reduction in the number of shares held by investors. This means that the capping of interest rates made the bank shares less attractive as investors were worried about the reduced profitability from these institutions.
On the extent to which the capping of interest rates could be considered an event study, the study found that in the month of August 2016 which is thirty days before the announcement that the capping of interest rates had been made into law, there was normal movement in the share prices and share volumes traded for the listed banks. Between September 2016 and October 2016, share prices drastically reduced for the listed banks and the volumes traded reduced as well. A comparison of share prices for the listed banks in the fourth quarter of 2015 and the fourth quarter of 2016 shows that in 2016, most shares shed 10 shillings with some banks shedding almost half the prices in 2015. This goes to show that the capping of interest rates can be considered an event study in the financial sector.

This study recommends that banks can look more into lending to the government and capitalize on non funded income streams like foreign exchange spreads. Because bank stocks may not continue giving higher returns with the capping of rates, the study recommends that investors should look into into other investment areas like Treasury bills and bonds as well as other sectors like real estate. The study also recommends that when conducting an event study, it is important to be aware of the fact that other non event information or activity might occur at the same time as the event under study which could lead to inaccurate findings on the event. It is also important for anyone undertaking an event study to know that sometimes information can be reflected in the share prices before the actual event date.

This study concludes that government regulations on the financial sector do have an effect on the value that investors place on listed companies as evidenced by the market reactions on the capping of interest rates. Most investors are looking at investing their money in alternative investments after most of the listed banks posted a decline in their annual profits for the year 2016 attributed to the new regulations. Extensive consultations with all stakeholders should be done when coming up with regulations that have such powerful effects in the financial sector.
ACKNOWLEDGEMENT

Gratitude to my Heavenly father for the gift of knowledge and opportunity to complete this journey of my project. I acknowledge my supervisor Professor, Mr. Kepha Oyaro for his guidance and encouragement during this paper writing period. I would also like to express my gratitude to my family for their love and support to ensure this project was completed smoothly. Special thanks to Richard Leyian, Robert Mbatia, and Moses Kariuki for their input and encouragement during the writing of this project.
DEDICATION

A special dedication to my beloved parents, Franks and Teresia Mbua and my siblings, Philip, Vincent and Asumpta. Thank you all for cheering me on and providing me with all the support and inspiration I needed to complete my program. This achievement would not have been possible without the support of the United States International University lecturers and fellow students. Thank you all and may the Almighty Lord bless you always.
# TABLE OF CONTENTS

- DECLARATION .................................................................................................................... II
- COPYRIGHT ........................................................................................................................ III
- ABSTRACT ........................................................................................................................... IV
- ACKNOWLEDGEMENT ........................................................................................................ VI
- DEDICATION ....................................................................................................................... VII
- TABLE OF CONTENTS ....................................................................................................... VIII
- LIST OF TABLES ................................................................................................................ XI
- LIST OF FIGURES ............................................................................................................... XII

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

1.0 INTRODUCTION ............................................................................................................ 1
1.1 Background of the study ............................................................................................... 1
1.2 Statement of the problem ............................................................................................. 5
1.3 Purpose of the study ...................................................................................................... 6
1.4 Research questions ....................................................................................................... 6
1.5 Significance of the study ............................................................................................. 7
1.6 Scope of the study ......................................................................................................... 7
1.7 Definition of terms ....................................................................................................... 8
1.8 Chapter Summary ......................................................................................................... 9

## CHAPTER TWO .................................................................................................................. 10

2.0 LITERATURE REVIEW ................................................................................................. 10
2.1 Introduction ................................................................................................................... 10
2.2 Factors affecting return of bank stocks ....................................................................... 10
2.3 Attractiveness of Bank stocks ..................................................................................... 14
2.4 Capping interest rates as an event study ..................................................................... 18
2.5 Chapter Summary ......................................................................................................... 23

## CHAPTER THREE .............................................................................................................. 24

3.0 RESEARCH METHODOLOGY ....................................................................................... 24
3.1 Introduction..................................................................................................................24
3.2 Research Design..........................................................................................................24
3.3 Population and Sampling Design..................................................................................24
  3.3.1 Population..............................................................................................................24
  3.3.2 Sampling Design....................................................................................................25
  3.3.2.1 Sampling Frame..................................................................................................25
  3.3.2.2 Sampling Technique............................................................................................25
  3.3.2.3 Sample Size........................................................................................................26
3.4 Data collection method.................................................................................................26
3.5 Research Procedure.....................................................................................................27
3.6 Data Analysis Methods.................................................................................................27
3.7 Chapter Summary..........................................................................................................28

CHAPTER FOUR..............................................................................................................29

4.0 RESULTS AND FINDINGS..........................................................................................29
4.1 Introduction..................................................................................................................29
4.2 General Information.....................................................................................................30
4.3 Relationship between lending rates and stock prices.....................................................31
4.4 Relationship between lending Rates and Stock Volumes.................................................35
4.5 Interest Rate Capping as an Event Study.......................................................................39
4.6 Chapter Summary..........................................................................................................45

CHAPTER FIVE..................................................................................................................46

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.................................46
5.1 Introduction..................................................................................................................46
5.2 Summary of Findings....................................................................................................46
LIST OF TABLES

Table 3.1 Listed Banks on NSE..............................................................26
Table 4.1 Response Rate.................................................................29
Table 4.2 Correlation between lending rate and stock prices in 2015............31
Table 4.3 Correlation between lending rate and stock prices in 2016............34
Table 4.4 Correlation between lending rate and stock prices in 2016............35
Table 4.5 Correlation between lending rate and Share volume in 2015............37
LIST OF FIGURES

Figure 4.1: Percentage distribution of listed and unlisted banks.................................30
Fig 4.2: KCB Average Stock Prices-2016.................................................................39
Fig 4.3: Equity Average Stock Prices-2016.................................................................39
Fig 4.4: Co-op Average Stock Prices-2016.................................................................40
Fig 4.5: Barclays Average Stock Prices-2016...............................................................40
Fig 4.6: DTB Average Stock Prices-2016.................................................................41
Fig 4.7: CFC Average Stock Prices-2016.................................................................41
Fig 4.8: HF Group Average Stock Prices-2016............................................................42
Fig 4.9: I&M Average Stock Prices-2016.................................................................42
Fig 4.10: NBK Average Stock Prices-2016...............................................................43
Fig 4.11: Stanchart Average Stock Prices-2016..........................................................43
Fig 4.12: NIC Average Stock Prices-2016.................................................................44
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Interest rate capping is a form of government control in the financial sector. Over the recent years, there has been a decline on the number of countries using this form of control mainly because most countries are aiming at having liberal financial policies.

There are several reasons why governments may opt to use interest rate caps, most of which are political and economic. One of them could be to support an industry or sector where there is a market failure or in areas where a greater financial resource is needed. Market failures usually result from market information asymmetries, moral hazards, adverse selections or the inability of financial institutions to differentiate between high risk and low risk clients. Therefore according to Miller (2013), interest rate caps are a useful tool to support a sector until it’s able to sustain itself.

Since the capping of interest rates has a tendency to distort the market and cause adverse biases, financial institutions tend to favor their lending to low risk clients which in turn leads to inefficiencies in the financial intermediation process. According to Ramsey (2013), this discrimination leads to a situation where those in dire need of financial assistance being locked out of the available finances because they are considered high risk. Financial institutions can however still remain profitable in the midst of interest rate capping by the government by venturing into other sources of income such as non-funded income as well as cutting their costs.

Restrictions brought by the capping of interest rates may lead into alternative lending by the financial sectors such as lending to the government and in extreme cases where the capping may become unprofitable, banks and microfinance institutions may withdraw from certain locales such as rural areas or from expensive market segments because they cannot cover their costs.

This scenario in turn leads the low income, high risk borrowers to turn to shylocks and other unlicensed money lenders for funding and too often these loans come at a very high cost. According to evidence, interest rate caps on loans discourage microfinance non-governmental organizations (NGOs) and other sources of finance for the poor from converting into licensed financial institutions (Helms and Reille, 2004).
In Japan, the 2006 Act reduced the interest rate cap under the Capital Subscription Law from 29.2% to the 20% level, although in practice lenders had been forced into reducing rates to this level by the Supreme Court Decisions at the start of 2006 (Honda and Kuroki, 2006). Although lenders protested that restricting rates to this level would make the business unprofitable and drive them out of the market, figures released by the Financial Services Agency in 2004 indicated that the major money lending companies were borrowing their capital from banks at just 2% whilst lending this onto to consumers at between 27% and 29%. In addition, each of the four main lenders had operating profits of approximately 1 billion yen. As a consequence, there was little sympathy for lenders with this argument.

Many countries in Africa have established interest rate ceilings to protect consumers from high interest rates charged by banks. Most of these ceilings are the response of governments that are facing political and cultural pressure from its citizens. The general idea is that interest rate ceilings limit the tendency of some financial service providers to increase their interest yields (all income from loans as a percentage of the lender’s average annual gross loan portfolio) especially in markets with a combination of no transparency, limited disclosure requirements and low levels of financial literacy (Maimbo and Henriquez 2014).

Despite good intentions, interest rate ceilings can actually hurt low-income populations by limiting their access to finance and reducing price transparency. If ceilings are set too low, financial service providers find it difficult to recover costs and are likely to grow more slowly, reduce service delivery in rural areas and other more costly markets, become less transparent about the total cost of loan, and even exit the market entirely. When rates are capped, most investors may see this to mean that the banks’ earnings will reduce and thus they may shy away from investing in the shares of banks that are listed in a country’s stock exchange (Maimbo and Henriquez 2014).

According to Richard, Scott, and William, (2013), there is empirical data that would help frame the question of the reasonableness of bank interest rates. Their paper shows a decrease of interest rate yield in Africa from 39% to 25% between 2004 and 2011 despite the increase over the same period of the financial expenses and credit losses. Africa is the region that shows the most substantial continued declines of its interest rate yield (-2.5 percent between 2006 and 2011). The paper also shows that operating
expenses are the largest determinants of the rate the borrowers end up paying. In Africa, the operating expense ratio decreased from 28% to 19% between 2004 and 2011. Despite a 1.5 percent per annum decrease, the operating expense ratio in Africa remains the highest compared to other regions of the world. There is a need to understand the drivers of operating expenses in Africa and figure out what can be done to reduce them while maintaining financial institution’s efficiency and sustainability.

By 2013, 17 countries in Sub Saharan Africa had introduced interest rate caps. The West Africa Economic and Monetary Union, which includes eight francophone African countries, lowered the interest rate ceiling, initially established in 1997, by three percent. According to the Council of Ministers, the new maximum effective interest rate banks could charge was 15%, while Microfinance institutions (MFIs) could charge 24%. The Economic and Monetary Community of Central Africa, comprising of 6 countries (Cameroon, the Central African Republic, Chad, the Republic of Congo, Gabon, and Equatorial Guinea), set up an interest rate ceiling in October 2012. The interest rate ceiling specific to the microfinance sector is calculated by applying a margin of 33% to the average effective interest rate charged by microfinance institutions during the previous six months (Djibril, 2013).

In Zambia, the central bank, known as the bank of Zambia (BOZ) introduced a ceiling on the annual interest rate on loans in charged by non-bank financial institutions (NBFI) in 2013. The ceiling stated that the maximum effective annual lending interest rate for NBFI designated as microfinance service providers by the Bank of Zambia would not exceed 42% and the maximum effective annual lending rate that will be charged by all other non-bank financial institutions would not exceed 30%. NBFIs included development banks, microfinance institutions, credit institutions and forex bureaus.

BOZ reasoned that most non-bank financial institutions were charging extremely high rates to their customers in the guise of cushioning themselves from high risks involved. As a result, credit access was locked out of the reach of a majority of clients and so the government had to intervene. The measures taken were supposed to make loans more affordable and equitable to vulnerable borrowers. Interest rate capping did not work in Zambia and was lifted in November 2015.
The issue of interest rates capping has also been introduced severally in Kenya with different outcomes. In 2000, the Donde Bill, (named after its mover, Member of Parliament, Joe Donde) tried to address the issue of interest rates but did not get much support from stakeholders including banks. The draft laws aimed to have the government regulate the amount charged on loans by financial institutions since the banks had made borrowing out of reach for the majority of Kenyans.

Mr. Donde argued that a majority of businesses were failing as banks moved in to auction their assets when they were unable to service their loans due to the high rates and he proposed that the interest rates be pegged on the 91-day treasury bills with a margin of 4%. Industry players in the country with the exception of banks welcomed the bill, saying that it would form part of recovery efforts the country needed to kick start the economy. The government, in a memorandum to parliament, however cautioned the legislators on the dangers of controlling interest rates and cited that such a move would be against the spirit of the liberalization policy of the Kenyan economy.

There was also a bone of contention between the government and Mr. Donde on the requirement that a nine-man committee be formed to be in charge of formulating and implementing monetary policy. The government’s amendment proposed that the committee should have 10 members which were to include the central bank governor, the deputy governor, the chief economist and seven other members, of whom two had, are women. The committee was also supposed to change its role to be more of advisory rather than just being proactive.

In 2015, there were fresh attempts to cap bank interest rates through a proposal made by the Kiambu Member of Parliament Hon. Jude Njomo. The bill was finally assented by President Uhuru Kenyatta on the 24th August 2016. The Bill sought to amend section 33A of the Banking Act by introducing a new section (section 33B) which provides for interest ceilings, giving a warning to the borrowers to be aware of the interest they receive on their deposits and repercussions to all financial institutions that carry out the function of lending on providing interest rates higher than those set by the law. Section 33B (1) (b) of the Banking Amendment Bill also said that any Kenyan with a savings account in a bank will receive a predetermined interest rate on the deposit with the reference rate being the Central Bank rate (CBR).
This clause set the minimum interest rate that a bank would pay for a savings deposit at 70% of the base rate set by the Central Bank of Kenya. This is to mean that with a CBR of 10%, the minimum amount of interest payable for a savings account is 7% and the maximum interest charged on loans is 14% which is 400 basis points above the CBR. The legislations main aim is to restrict banking institutions from setting very high interest rates on loans and very low interest rates on deposits. Specifically, the law prescribes that no banking institution that issues a loan would charge an interest rate that is more than 400 basis points above a base rate set by the Central Bank of Kenya. For the bank client who is seeking a loan, it is now possible to predict the maximum interest on a loan to be provided using the base rate as would be declared by the Central Bank.

1.2 Statement of the Problem

When President Uhuru Kenyatta assented the bill into law of capping interest rates at 400 basis points above the CBR rate which currently stands at 10%, most stakeholders focused on the effects this would have on the end consumer of bank products that is the customers. However little attention was paid on how this new law would affect the share prices and the overall attractiveness of the bank shares going forward. There was no regard for how this new law would affect banks looking to raise money through sale of equity (Aligonby, 2016).

As with any new regulation, there are various stakeholders that are affected, either positively or negatively. Existing and potential shareholders of bank stocks are some of the stakeholders that were bound to be affected by the new law. Listed banks on the NSE constitute over 30% of market capitalization with insurance companies, foreign investors and pension funds heavily invested in the bank stocks. It was thus felt that there was a need to investigate how the shareholders were affected by the new law. The president was lauded by the corporate institutions and individuals for making financial access cheaper but the banks and financial experts all saw this as a political tactic to make the president more popular given the upcoming 2017 general elections in which the president is seeking to retain his seat for a second term (Aligonby, 2016).

What followed was a fall in the share prices of listed banks in the NSE which affected the 20 share index, the 25 share index and the all share index. On the first day of
trading after the bill was passed, the Nairobi Securities Exchange 20 Share Index lost 152.92 points (4.4%) to hit 3,309.76 as the market recorded one of the biggest plunges. Banks stocks led the decline as their share prices went down by up to 11 percent. The stocks that include Diamond Trust Bank, Kenya Commercial Bank (KCB) and Cooperative Bank, which all fall in the indicative 20 share index, were on a free fall as fears over the interest law spread at the bourse (Aligonby, 2016).

The All Share Index similarly dropped by 5% to from 146.48 to 139.14 while the NSE 25 Share Index fell by 3 points to close the day at 3,913.93. The bond market saw 4.4 million worth of trades down from 18million (Maloba, 2016).

This study assessed the effect of capping interest rates on the share price and volume of shares traded by banks listed on the NSE.

1.3 Purpose of the Study

The purpose of my research is to investigate the effect of the capping of interest rates on the shares of banks listed on the Nairobi securities exchange.

1.4 Research Questions

1.4.1 How important is the bank interest rate as a factor when investing in bank shares?

1.4.2 How attractive are bank shares after the interest rate cap was introduced?

1.4.3 To what extent is the capping of interest rates an event study?

1.5 Significance of the Study

With the capping of rates charged by banks in Kenya, it is important to look at the various stakeholders affected by the new law. Most of the analysis that has been done so far is mainly focused on the effects this bill has had and is continuing to have on the bank client that is the depositors and the borrowers. This study seeks to find out how the investors of the shares of the banks listed in the NSE have been affected and the sentiments they hold with regards to the new law. This study will be of importance to several groups of stakeholders since at the end of the day, the goal of any firm is to maximize shareholder wealth.
1.5.1 Banking Industry

By knowing how the stock market reacted to the capping of interest rates, banks will be able to find ways of ensuring they meet their overall objective of wealth maximization for their shareholders.

1.5.2 Brokerage Firms

Financial analysts will find the results of this study useful in that they will be able to advice their customers on whether they should put their wealth in bank shares or find alternative industries to invest in.

1.5.3 Investors

Investors will be able to get an understanding of how the decision to cap interest rates will actually affect the stock market and also assess whether it is still prudent to invest in the banking industry and whether to reduce or increase their investments in the stock market.

1.6 Scope of the Study

The NSE is located in Nairobi, the capital city of Kenya and this is where all the financial securities trades are conducted. The population for this study is all the banks listed in the NSE and this consists of a total of eleven banks. This study will involve monitoring of the stock exchange price and volume movement of bank shares from June to December 2015 and June to December 2016 and the main limitation in this study is that the focus is only on stocks of banks listed on the NSE and not any other industry. This study was conducted in summer 2017.

1.7 Definition of Terms

1.7.1 Central Bank of Kenya, (CBK)

This is the institution responsible for formulating monetary policy to achieve and maintain price stability. It promotes financial stability, formulates and implements foreign exchange policies, and acts as an adviser to and fiscal agent of the Government. (Simon and Metzler, 2016).
1.7.2 Interest Rate Cap

This refers to a ceiling placed on interest rates. It dictates the maximum rate that a bank can charge its customers on loans, Villegas (1982) and in Kenya it is currently pegged on the CBR at 4%.

1.7.3 Nairobi Securities Exchange, (NSE)

Nairobi Securities Exchange (NSE) is the principal bourse in Kenya, offering an automated platform for the listing and trading of multiple securities (Nairobi Securities Exchange, 2016).

1.7.4 Share Index

A share index is a measurement of value of a section of a given stock market (Miller 2013). At the NSE, there are several indices with the most notable being the 20-share index, 25-share index and the all-share index. To be included in an index, a company must have its primary listing on the NSE with at least 20 per cent of its shares quoted on the local bourse over the last one year. A firm included in the index must also have a minimum market capitalization of Sh1 billion and ideally be a blue chip in the sense of superior profitability and dividend record.

1.7.5 Treasury Bill

Treasury bills are a secure, short-term investment, offering returns after a relatively short commitment of funds. Treasury bills are sold at a discount and currently there is the 91-day, 180-days and 365-days Treasury bills. (Central Bank of Kenya, 2016).

1.8 Chapter Summary

Chapter one presented the background information to the research problem, identified the problem statement, stated the purpose of the study and listed the research questions addressed in the research project. It also presented the rationale, scope and definition of terms used. The purpose of my research was to investigate the effect of the capping of interest rates on the bank equity listed on the Nairobi securities exchange. The research sought to find out whether investors consider rates charged when making a decision to invest in bank shares, if bank shares were still attractive to customers after the interest
rate cap was introduced and whether a study of the capping of interest rates could be considered an event study. The research was conducted in Nairobi city where the NSE is and the population for this study is was the banks listed in the NSE which consisted of a total of eleven banks. This study involved a comparison of the stock price movement of bank shares listed on the NSE between July 2015 to December 2015 and July 2016 to December and the main limitation in this study was that the focus was only on stocks of banks listed on the NSE and not any other industry.

Chapter two covered the literature review. It discussed the existing literature on what investors consider when choosing to invest in bank shares, the attractiveness of bank shares in countries with interest rate caps in place and the steps followed to determine whether an announcement such as the capping of interest rates could be classified as an event study. Chapter three covered the research methodology, detailing the research design, population and sampling, data collection methods, research procedure and how the collected data was analyzed. Chapter four covered the research findings and chapter five presented the discussion, conclusion and recommendations for action and future research.
2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the literature on the factors affecting the return of bank stocks, attractiveness of bank stocks to investors as indicated by volumes traded and literature on what comprises an event study. An in-depth discussion based on existing literature on how lending and deposit interest rates can influence the choice of stocks preferred by investors, what share volume trades indicate about a stocks attractiveness to investors and the steps involved in carrying out an event study, was carried out.

2.2 Importance of Bank Interest Rates as a Factor when Investing in Bank Shares

Interest rates have a direct effect on the activities of commercial banks because of the strong belief that they affect the financial performance banks (Priti, 2016). The valuation of bank assets is the most important factor when it comes to the valuation of bank stocks followed by the rise and fall of interest rates (Rosenbaum, 2015). Traditionally, retail banks make money by relying on the relationship between interest rates, deposits and the loans issued to clients. Therefore, it makes sense for financial analysts to focus on bank stocks as the interest rates rise or fall. Numerous bank failures were recorded in the United States during the 1970s and 1980s because of high-interest rates and the sensitivity of interest rate (Priti, 2016).

Priti (2016) examined the mean and volatility spill overs caused by short-term interest rates and exchange rates, and long-term interest rates and exchange rates. It is an important factor for investors and bankers because of the impact it has on the overall valuation of bank stocks. In addition, it defines the level of risks that the bank is facing. A comprehensive understanding of how interest rate affects the valuation of bank stocks and the overall exchange rate is very important when one considers that some banks have foreign operations (Zaman, et al., 2013). The difference between the short-term interests paid to deposits and savers and the longer-term interests paid by borrowers is the interest earned by banks. A steep yield curve means the commercial banks are generating high interests (Tran, 2013). Currently, the United States of America has kept the long term and short term interest rates very low, which means the
amount of interest generated by commercial banks is limited (Rosenbaum, 2015; Priti, 2016).

The performance of commercial banks depends on a wide range of business, but interest rates still play a key role in determining the financial performance of banks (Tran, 2013). The stock market is sensitive to changes in interest rates because it is the perceived as the basis for any equity valuation. It is due to the fact that stock values are estimated to the forecasted cash flow, and the interest rate is used to get the forecasted value to the present value. The critical role of interest rates in determining the performance of commercial banks explains why government regulation is one of the factors that affect the return on bank stocks (Nkwoma, 2014). The other factors that affect the return on bank stocks include financial risks, market interest rates, and sensitivity to other investor choices.

2.2.1 Government Regulation

The biggest challenge for commercial banks is to avoid liquidity and solvency issues that require them to keep a large portion of cash to meet liquidity expectations (Iftimie & Chiru, 2016; Cao & Illing, 2015; Irresberger, Mühlnickel, & Weiß, 2015; Makkar & Singh, 2013). Government regulation influences the amount of cash that banks are expected to keep in reserve to meet their liquidity issues, which means it affects the overall profit margin of the banks (Zaman, et al., 2013). Unanticipated changes in government regulation of interest rates affect the decisions made by investors in a positive or negative manner. A change in the ceiling interest rate pushed investors and other financial institutions to forecast the effect on future cash flows, which affects stock valuation (Koch, 2015). Nkwoma (2014) established that deregulation of interest rates in the Nigerian bank sector increased bank lending, which meant a high-profit margin for the banks. However, Nkwoma (2014) and Zaman, et al. (2013) caution against the lack of regulation to prevent banks from engaging very risky ventures that might compromise their liquidity.

Government regulation is not limited to the fluctuation of the interest rates because in some cases the government can step in to provide liquidation cash to protect banks. Nodeng, Rosenboom, and Wang (2013) conducted a study to understand the impact that government intervention on the US stock performance during the financial crisis. The provision of bank capital by the government had a positive impact on the
performance of borrowing companies. The alleviation of financial shocks by the
government is a positive step for risky firms that depend on banks. In addition, it
reinforces the need for government regulation because of the sensitive nature of
banking institutions in an economy. Investors tend to associate the value of bank stocks
with the health of their governments (Correa, Lee, Sapriza, & Suarez, 2014).

Some studies fail to account for other events that might have occurred during the same
time that the interest ceilings were introduced in the economy. The implicit assumption
that interest ceiling is not the only factor that can tamper with the result because it is
not a reflection of the practical reality. Some periods are characterized by major
macroeconomic events and some regulatory changes. The examination of prediction
errors fails to account for all changes that might occur before the end. The effect of
other informational events should be considered to understand the full impact of
interest rates on the performance of banks.

Gandhi & Lustig (2015) reviewed the return on bank stocks in the USA based on size
and determine that the adjusted risk returns on the stock of large banks are low
compared to those of medium and small sized commercial banks. The study confirms
that the high adjusted risk for small and medium-sized banks is related to the
willingness of the government to protect large banks. Governments tend to provide
loans for large banks as part of an effort to protect shareholders, and the move affects
the way stocks of large banks are viewed in the market.

**2.2.2 Financial Risks**

The sensitive of banks to financial risks and panics is a factor that separates banks from
other financial institutions. The tail risk on bank returns is affected by the size of the
bank, implicit government guarantees, and other factors like the credit default risk
(CDS) that indicates bank default risk (Ristolainen, 2016). Banks operate by receiving
deposits with short-term interest rates and lending with long-term interest rates. The
difference between the short-term and long-term interest rates is the interest spread
earned by the bank. The risk of prepayment, control variables and the returns on
industrial portfolios affect the valuation of bank stocks.

The impact of prepayment risk can influence the decisions of investors and that of bank
executives. Banks traded in the NASDAQ market are relatively more mean-variance
efficient compared to the other industry stocks. Mostly, they are medium and small
sized commercial banks that are active in mortgage lending. Mortgage loans come with the risk of prepayment on top of the normal default and maturity risks faced by commercial banks (Irresberger, Mühlnickel, & Weiß, 2015).

2.2.3 Market Interest Rates

Zaman et al. (2013) conducted a study to determine the impact on interest rate on the profitability of commercial banks in Pakistan. A sample of 20 banks operating in Pakistan and listed in Karachi Stock formed the study. The study design was cross-sectional, and the data sources included the indexed Karachi stocks based on return, audited financial reports of the banks, publications of the State Bank of Pakistan, Press publications, and media reports. The outcome of the study confirmed that interest rate, deposit with the other banks, investment, and loans. It was established the interest rate (a key tool of monetary policy) has a significant impact on the profitability of banks. An increase in interest rates causes a higher lending rate more than the deposit rate, which results in profit because the bank spread is high. A reduction in the interest rate causes the deposit rate to move faster than the lending rate, which keeps the bank spread low.

The cash flow discounting model used by commercial banks calculates the value of stocks by discounting the cash flow in the future at the present discount rate. The discount rate depends on the prevailing market interest rates, which means a small change in the interest rates has a major impact on the banks stock valuation (Kozak, 2016; Koch, 2015). Furthermore, high-interest rates limit borrowing, which limits the cash flow to firms. The ultimate effect has reduced the profitability of firms, which affects the attractiveness and value of stocks.

2.2.4 Sensitivity to Other Investor’s Choices

A wide range of factors, which include the stock prices, expected returns, time, firm reputation, panic, and the prevailing rumors, influences individual investment decisions. Some studies have identified investor effort, capability and appetite for risk can be used to determine the decisions that an investor will make (Lathif & Aktharsha, 2016). According to Ivković and Weisbenner (2007), the diffusion of information has a significant impact on individual investment decisions. Barber and Odean (2011) confirm that real investors tend to get interested in stocks that are dominating the news. The interest in the news causes speculative trading, which can affect stock prices and
returns. Word of mouth affects personal investment choices, especially in highly populated areas.

Household sensitivity to the investment choices made by neighbors increases with the population of the household’s community. The diffusion in stock trading influences individual choices made by investors about the allocation of assets (Ivković & Weisbenner, 2007). The tendency of investors to value bank stocks based on the panic is influenced by the diffusion of information through word of mouth and news about an impending financial crisis. The individual investor's decisions are influenced by the common perception about the performance of the firm.

Jagongo & Mutswenje (2014) examined the factors that influenced individual investor choices at the NSE (Nairobi Stock Exchange). The study had 42 out of 50 investors that made the sample size. The researchers established there is a connection between behavioral finance theory and the equity investor decisions. Herding is one of the factors that influence individual investment choices at the NSE. It is a confirmation that sensitivity to the choices of other investors can influence investment decisions, which means it affects the general return on bank stocks.

2.3 Attractiveness of Bank Stocks after Interest Rate Capping

The attractiveness of bank stocks is affected by a myriad of factors that include financial reforms and interest rate sensitivity of the bank’s stock returns since they determine the profit margin of the bank. Streamlined operations, big earning beats, attractive share valuations, strength in housing and cyclical potential are some of the factors that determine the general attractiveness of bank stocks. According to Martins, Serra, and Martins (2016), the changes in the real estate value affects the default risk for banks and profitability because of being exposed to real estate sector. The changes in real estate market determine the attractiveness of banks that have invested heavily in the sector by providing mortgages. Financial reforms, bank capital structure, bank size, market events, corporate governance affects the performance of banks, which in turn influences the valuation of bank stocks.

2.3.1 Financial Reforms

The impact of financial reforms can on bank stock returns have been confirmed by studies focusing on banks in the U.S and Europe. The administration of interest rates in
the U.S has reduced the profit margin for banks in developed nations, which has pushed banks to look for alternative investments to improve the profit margin (Irresberger, Mühlnickel, & Weiβ, 2015; Gandhi & Lustig, 2015; Tran, 2013). Financial reforms have helped in improving the confidence in commercial banks, which in turn has improved the valuation of bank stocks in Pakistan (Zaman, et al., 2013) According to Correa et. al (2014), the same impact has been noted in many banks worldwide.

According to Odhiambo (2010), the interest rate reforms have influenced positive economic growth in Tanzania. The study examined the influence of interest rate reforms on financial deepening. The outcome of the study shows that the researchers did not establish any finance led growth. The impact of financial reforms on the performance of banks and bank stock returns has been positive in Nigeria (Nkwoma, 2014).

According to Odhiambo (2009), the interest rate policy in Kenya remained unchanged between in the 1960s and 1970s. At that time, the government used interest rates to fix minimum saving rates for all institutions accepting deposits and minimum rates of lending for commercial banks, and other lending institutions. The prevailing policy at that time was the use of low-interest policy to protect small borrowers and encourage investment.

In 1981, the government of Kenya implemented key financial reforms based on the advice from World Bank and IMF. The belief was that government intervention like ceilings on nominal rates, high reserve requirements, and direct control of credit allocation limited economic growth in developing nations. The nominal interest rates were reviewed gradually. Odhiambo (2009) determined that the liberalization of interest rates have a positive impact on financial deepening in Kenya. Based on the average standards in Sub-Saharan Africa, the Kenya financial system is considered a well-developed system. The country registered a positive real interest rate after 297 reviews between 1982 and 1990.

2.3.2 Bank Capital Structure

The banking sector is directly connected to economic growth and development, which necessitates the need to understand the factors that influence stability and evolution of the banking sector. The declining banks stock prices and the rising credit spreads are some of the factors to show that liquidity and emerging market risks have made
investors to question the bank capital structure (Trenca, Zapodeanu, & Cociuba, 2016). Almazan, Martín-Oliver, and Saurina (2015) examined the impact of securitization on a bank’s capital structure. The introduction of securitization increases the attractiveness of banks stocks because the forecasts cash flows are stable. Increased securitization means the banks relies less on deposits to finance credit and limits the liquidation risks that face the bank.

Bank capital is important because they cover the risk of unexpected losses, which reduces the risk of bank failure. Smaller banks tend to hold a higher stock of capital because of the need to raise additional capital in case of a risk. Bank capital is a key line of defense against deposits and creditors in case of the bank failure (Harding, Liang, & Ross, 2013). It provides security for investors and makes bank stocks attractiveness. The securitization of bank capital increases the valuation of bank stocks because of the perception that the risk of bank failure is low (Sengupta & Hogue, 2014).

2.3.3 Bank Size

Gandhi and Lustig (2015) established the bank stock returns for big banks are very high compared to that of small and medium-sized commercial banks. Size is a key factor that influences the risks that banks take and the how attractive the stocks are to investors (Priti, 2016). The perception that the government is willing to protect shareholders in large banks makes the stocks for large banks attractive to investors (Tran, 2013). The level of risks taking that can be perceived as negative varies with the size of the bank because of the implicit government guarantee that exists with large banks. The dynamics of the stock market helps in disciplining banks that are taking too many risks. The valuation of the bank’s portfolio influences the overall attractiveness of the stock, which affects the stock returns. The asset quality of the bank portfolios is analyzed to determine the value of its stocks. (Correa, Lee, Sapriza, & Suarez, 2014).

2.3.4 Market Events

Ideally, the market value of firm’s equity does not depend on the number of outstanding shares. As a result, the ex-date for a stock dividend should constitute a change in the number of outstanding shares and a change in the stock price. The distribution of stock returns around ex-dates of stock dividends should not change. Changes have been noted in stock return distribution around the identified ex-dates.
However, the changes do not affect the cash flow of the firm. The bid-ask spread and price discreteness on stock returns have been analyzed to understand their impact on stock attractiveness (Blau & Whitby, 2015; Ripamonti, 2016).

Blume and Stambaugh (1983) showed that the bid-ask spread leads to an upward bias in rates of return. Kim (2014) show that high discrete price levels increase the variance of the observed returns. Blau and Whitby (2015) discuss the positive impact of measured return variances are biased upward by bid-ask spread. A lower the price is an indication of high biases. These changes might be causing the changes in the stock return distributions. The volatility of bid-ask spread and the level of price discreteness affect the pricing of the company shares.

2.3.5 Corporate Governance

According to Mugaloglu and Erdag (2013), the lack of transparency and effective corporate governance increases the return on stock volatility. They examined the performance of companies listed in Istanbul Stock Exchange (ISE). Peni and Vähämaa (2012) examined the impact of corporate governance on the performance of banks during the financial crisis. The data was obtained from large publicly traded banks in the United States. The findings of the study showed that corporative governance had a mixed effect on the performance of the banks. The results suggest that banks with strong corporate governance had higher returns in 2008, and strong corporate governance negatively impacted the valuation of bank stocks during the crisis. It is possible that good governance aided in mitigating the negative effects of the financial crisis on banks. The outcome of the study suggests that corporative governance can be a motivation factor for investors in banks stocks. The fact that the financial crisis is attributed to poor governance in most cases reinforces the impact of good corporate governance on the attractiveness of bank stocks.

De Jonghe, Disli, and Schoors (2012) analyzed the effect of corporate governance on the risk/return efficiency in the banking sector. The study identified the combination of internal and external governance mechanisms as the key to maintaining a high risk/return efficiency in banks. The duality of the CEO, education profile, and board experience are some of the factors that influence the performance of bank stocks. Professionals money managers tend to invest in banks that have low manager-shareholder conflict.
2.4 Capping of Interest Rates as an Event Study

An even study can be explained as a statistical way of assessing the impact of information or action on the value of a firm (Chuck, Kwok and Brooks 2013). The impact of new regulations can be estimated empirically using event study (Beigi & Budzinski, 2013). The assumption in event study is that the security prices in an efficient market are a full reflection of the available information and adjust to new information easily. Therefore, the level of impact a new policy will have on a given firm will be reflected in the change in the security price of the firm at the time the new policy was expected (Beigi & Budzinski, 2013). Beigi and Buzinski have raised concerns about the accuracy of the event study when it comes to analyzing economic policies.

Event studies measure the relationship between an event that affects securities and the return of those securities. According to Mark (2010), Some events, such as a regulatory change or an economic shock, affect many securities contemporaneously; other events, such as a change in dividend policy or a stock split, are specific to individual securities. Event studies are often used to test the efficient market hypothesis. For example, abnormal returns that persist after an event occurs or abnormal returns that are associated with an anticipated event contradict the efficient market hypothesis. Aside from tests of market efficiency, event studies are valuable in gauging the magnitude of an event's impact.

Some of the difficulties associated with event study include the accurate identification of the specific date for the new policy. The new policy might be embedded in the security before the date anticipated by the researcher. Reynolds (2008) identified the market efficiency studies and useful information studies as the two major types of event studies. Market efficiency studies assess the speed and efficiency of the market when it reacts to a specific chunk of new information, and the information usefulness studies assess the reaction of company returns to the release of some news.

According to Henderson (2008), types of event studies vary. Market efficiency studies assess how quickly and correctly the market reacts to a particular type of new information. Information usefulness studies assess the degree to which company returns react to the release of a particular bit of news. Accounting scholars have used the information usefulness concept to assess the value of accounting. Such studies have also been used to assess the extent to which market participants were watching the
accounting profession's policy making process. More recent studies use excess returns as dependent variables in cross-sectional regressions to explain the source of the extra returns.

These then are the basic types of event studies: market efficiency, information value, and metric explanation. These classifications are not mutually exclusive. It is quite common for event studies to combine a little of each (Mark, 2010). There are also methodology studies of the event study design, research that considers how best to run event studies. Event study methodology papers are unusual for business research where econometricians and statisticians typically use statistical theory to define how a test should be run. In event studies, the issues have been tested empirically, not theoretically, to find out what will work given the nature of financial data. Such investigations normally involve simulations. The researcher selects, or creates, a hypothetical sample of securities, injects abnormal returns on arbitrarily defined event dates, and tests competing methodologies to ascertain which is better at detecting the event.

2.4.1 Event Study Process

The earliest application of event study can be traced to Fama, Fisher, Jensen, and Roll (1969); their study can be considered an efficient market analysis as they examined the speed and accuracy at which the market reacted to the announcement of a stock split. The event study process used by Fama, Fisher, Jensen and Roll (1969) has become classic.

The steps start with the definition of the date that the market will receive the news, and then returns on the individual companies are characterized by the absence of the impending news. Thirdly, the difference between the observed returns and the no-news returns is measured for each firm, and the next step is to aggregate the abnormal returns across time and firms. Finally, the aggregated returns are tested to determine if the abnormal returns are significant and if yes then for how long (Sandler & Sandler, 2014).

2.4.2 Define Event Date

The event must be defined, and the time it took place determined. It is pertinent to understand that the timing of an event is not easy even though it might seem obvious.
The focus is on the time the market anticipated the news and not when the event happened (Fama, Fisher, Jensen, & Roll, 1969).

2.4.3 Characterize Normal Returns

Two periods must be identified during an event study and the estimations derived. The estimates define the expected or normal returns of each firm during the event window. The event window is the day of the event plus and/or minus some number of days, weeks, or months when the returns are observed to see if there was anything out of the ordinary. The day of the event is important, and it might vary for different firms. Fama, Fisher, Jensen and Roll (1969) used mean returns, market returns, control portfolio returns, and conditional/risk adjusted returns to characterize the normal returns of a firm.

The mean return approach expects the company to generate a return that is the same as what the firm averaged during the period of estimation. The market returns approach expects the firm to generate the same returns as the rest of the entire market during each day, week, or month of the event window. The control portfolio returns approach requires the researcher to identify a portfolio of firms that are similar to the sample firms except for the absence of news about the firms that make up the control portfolio. The control firms can belong to the same industry as the sample firms or possess the same risks. An abnormal return signifies the difference between the observed return of the sample firm and the return of the control portfolio for each day, week, and month during the event period (Fama, Fisher, Jensen, & Roll, 1969). Conditional or Risk-adjusted Returns approach applies a regression model to prediction the expected returns for the firms. Prediction errors, abnormal returns, residuals define the difference between the returns observed and those predicted by the regression model (Bali, Engle, & Murray, 2016; Chandra, 2008).

2.4.4 Calculate Excess Returns

The excess returns represent the difference between the observed returns and the predicted returns for that day, week, or month (Bali, Engle, & Murray, 2016). Mean adjusted returns are generated if the company mean return is used as the prediction. The market adjusted returns are obtained if the return of the market is the “no-news” expectation. The use of the regression model to predict the market-conditional return
and abnormal return can be termed as abnormal returns, prediction errors (PE), excess returns, or residuals.

2.4.5 Aggregate Excess Returns

The prediction errors must be aggregated across time and firms before the statistical tests. It entails the sample averaging of prediction errors for all firms in the sample on a given day where the days are counted based on the event time (Bali, Engle, & Murray, 2016).

2.4.6 Run Statistical Tests

The aggregated returns are statistically tested to finish the event study. The use of graphics to interpret the results was common in event studies.

The length of the window is an important choice because if the event window is too long the power of test statistics is reduced, which leads to a false inference about the impact of the event. The biggest challenge for the research is to convince of the merits of the project. The event should be cover something significant in that particular field of study. The researcher should identify the topic, conduct research and deliver the results regardless of whether some people like or not. The simplicity and direct nature of event study explain why it is not going obsolete any time soon.

A liberalized financial system permits banks to control lending rates indirectly; they can affect the rates in the money market through different intervention programs. However, the speed at which changes in the money market conditions are transmitted in the economic system lies on how fast banks can adjust their lending and deposit rates (Irresberger, Mühlnickel, & Weib, 2015).

2.4.7 Issues associated with Event Studies

The first, and potentially most important, choice an event researcher makes is what to study. Because event studies have become commonplace, the first hurdle an author faces with reviewers is convincing them of the merit of the project. The event should be something of wide interest in the field. A good story is needed to explain anticipated market reaction to a particular bit of news. If the explanation of market reaction is obvious, time is of the essence. The researcher will be in a race to recognize the topic
and get the research done and submitted. Even then there is the risk that reviewers will be unimpressed because of the obvious nature of the results (Henderson, 2008).

When designing an event study, how to measure the event is not always clear. For example, if the event is an annual earnings announcement, the announcement that annual earnings are $3.00 a share is meaningless unless this number is contrasted to the market's expectation about earnings. Moreover, the market's expectation will have been conditioned by earlier information releases pertaining to earnings (Mark, 2010). Therefore, the first issue in measuring the event is to disentangle the unanticipated component of the announcement from the expected component. The unanticipated component of the event is likely to be positive for some securities and negative for others, and the test of significance may need to be conditioned on the direction of the event. This can be accomplished by partitioning the sample into a subsample of securities for which the event was positive and a subsample for which the event was negative.

Another issue with respect to the measurement of the event is the influence of confounding factors (Mark, 2010). Supposing the event is defined as the announcement of a change in dividend policy, for many securities, this announcement may coincide with an information release about earnings. This coincident information is called a confounding event, which refers to an event that might distort or camouflage the effect of the event of interest on the security's return.

The sheer volume of event study literature can be imposing to researchers first considering use of the paradigm. Yet an examination of the process reveals that the similarities between various event studies are greater than the differences (Mark, 2010). All event studies follow a well-defined series of steps. For each of these steps, there is existing literature to suggest how to handle the choices involved. The event study is a classic design. Classic designs are simple and elegant, and, above all else, functional. The event study has become a classic because it works. It can be used under less than perfect conditions and still produce reliable results.

Event study methodology research provides one consistent lesson: even the simplest versions of the event study design work. The more specialized designs may be necessary for troublesome situations, but for most applications the simpler versions do nicely. The event study is a popular chronological frame of reference for scholarly
evaluation of financial events. What is done with the information it provides it what is important (Henderson, 2010). The use of reliable shared benchmarks allows us to communicate our findings with less concern about the language of our science and reduces duplication of effort.

2.5 Chapter Summary

This chapter is a comprehensive review of existing literature on the factors that influences the selection of stocks by investors, the attractiveness of bank stocks and the impact of changing regulations. The literature on corporate governance and government regulation are reviewed to understand their impact on the return of bank stocks. Chapter Two provides a theoretical background for the questions posed in Chapter one.

Chapter three tackled the research methodology, presents the research design, population and sampling design, data collection methods, research procedures and data analysis methods used in the study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the research methodology. The chapter covered research design, population and sampling design, data collection methods, research procedures, data analysis methods and chapter summary. The validity and reliability tests were also discussed.

3.2 Research Design

Research design is a plan and structure of investigation so conceived to obtain answers to the research questions (Coopers and Schindler, 2008). The function of a research design is to ensure that the evidence obtained enables us to answer the research questions as unambiguously as possible (DeVaus, 2001). The research design for this study was observational survey. Observational survey qualifies as scientific research when conducted specifically to answer a research question, systematically planned and executed; proper controls have been used and provide a reliable valid account of what happened.

Observational survey focuses on the monitoring of behavioral & non-behavioral activities and conditions. Behavioral observations include non-verbal analysis, linguistic and extra-linguistic analysis and spatial analysis. Non behavioral observations include record analysis, physical condition analysis and physical process analysis. This study focused on non-behavioral observational study involving record analysis where I reviewed movements of banking industry stocks prices and volumes listed on the NSE.

3.3 Population and Sampling Design

3.3.1 Population

According to Blume and Stambaugh (2012), a population is defined as a combination of people, animal and plants from which data can be collected. It is a large collection of individuals, objects or organizations that form the main focus of a scientific query. According to Coopers and Schindler (2008), a population is also defined as the total collection of elements about which the researcher wishes to make inferences for the research.
Xie (2013), also described a population as categories of entities satisfying certain definitions but varying in their individual properties, hence in population science, the scientist no longer assumes that all concrete units in a population are essentially the same or homogenous. The study population for this research was the eleven banks listed in the Nairobi Securities Exchange. These banks were: HF group ltd, Standard chartered bank ltd, I&M holdings ltd, National bank of Kenya ltd, NIC bank ltd, Equity group holdings, the cooperative bank of Kenya, KCB group, Diamond Trust bank Kenya ltd, CFC Stanbic bank holdings and the Barclays bank of Kenya ltd (Nairobi Securities Exchange, 2016).

3.3.2 Sampling Design

3.3.2.1 Sampling Frame

A sampling frame is a list of the population units/elements from which to select units/elements to be sampled (Blume and Stambaugh 2012). According to Coopers and Schindler (2008), a sampling frame presents a complete and current list of population of members of interest. It is the list of elements from which the sample is actually drawn hence it is a complete and correct list of population members only and is closely related to the population.

Other literature also defined a sampling frame as an objective list of the population from which the researcher can make a selection. The eleven banks listed on the NSE constituted the sampling frame for this research and they were I&M holdings ltd, HF group ltd, National bank of Kenya ltd, NIC bank ltd, Standard chartered bank ltd, Equity group holdings, The cooperative bank of Kenya ltd, KCB group ltd, Diamond trust bank Kenya ltd, CFC Stanbic holdings ltd and Barclays bank ltd.

3.3.2.2 Sampling Technique

A sampling technique is the method of selecting elements of the population that represents the population (Coopers and Schindler, 2008). It is a scientific procedure of selecting those units that would produce required estimates to reflect the population characteristics. The population for this study was small and a census method was used. The population was considered small as it had less than thirty five elements. A census is where data is collected from all members of the population (McDaniel & Gates, 2001). A census is used when there is enough time to collect the data, the researcher
has enough finances and a high degree of accuracy is needed. Some of the advantages of carrying out a census are the fact that it allows a researcher to gain an intensive knowledge about the subjects and there is a high degree of accuracy when using this method.

By using the whole population, I collected truly representative information. It is important to note however that although census data collection tends to be costly compared to a scenario where a sample is used, the population for this research was small (11 banks) and thus manageable in terms of finances.

### 3.3.2.3 Sample Size

A sample size represents a subset of a sampling unit from a population (Coopers and Schindler, 2008). An observation by Merriam (2003) showed that the larger the sample size the lower the likely error in generalizing to the population. Due to a relatively small population in this study, the entire population was used to carry out the research. The total number of banks listed on the NSE is 11 and they also constituted the sample size.

#### Table 3.1 Banks Listed on the NSE

<table>
<thead>
<tr>
<th>BANK NAME</th>
<th>NSE CODE</th>
<th>TOTAL RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIC Bank</td>
<td>NICB</td>
<td>1</td>
</tr>
<tr>
<td>Standard Chartered Bank Kenya</td>
<td>SCBK</td>
<td>1</td>
</tr>
<tr>
<td>Barclays Bank of Kenya</td>
<td>BBK</td>
<td>1</td>
</tr>
<tr>
<td>Cooperative Bank of Kenya</td>
<td>COOP</td>
<td>1</td>
</tr>
<tr>
<td>Diamond Trust Bank</td>
<td>DTK</td>
<td>1</td>
</tr>
<tr>
<td>Equity Group</td>
<td>EQTY</td>
<td>1</td>
</tr>
<tr>
<td>Housing Finance Co Kenya</td>
<td>HFCK</td>
<td>1</td>
</tr>
<tr>
<td>I&amp;M Holdings</td>
<td>IM</td>
<td>1</td>
</tr>
<tr>
<td>KCB Group</td>
<td>KCB</td>
<td>1</td>
</tr>
<tr>
<td>National Bank of Kenya</td>
<td>NBK</td>
<td>1</td>
</tr>
<tr>
<td>CFC Stanbic Holdings</td>
<td>CFC</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL RESPONDENTS</strong></td>
<td></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

### 3.4 Data Collection Method

The process of data collection is very critical in research as it ultimately impacts on the validity of the results. The purpose of data collection is to obtain information needed to keep records, to make decision about subject issues, to pass information on to others (Kothari, 2004).
In this study secondary data was collected using a checklist. A checklist made it easy to examine and interpret trends and was relatively inexpensive because data is already there. However, major drawbacks for using a checklist include the fact that data is not always be accessible or may be incomplete and inaccurate thus giving wrong results. Ethical issues concerning confidentiality may also arise. The checklist developed had three sections. The first section was to help gather stock price data for all the listed banks in the NSE, the second section was to help gather data on share volumes traded for the listed banks while the third section was to help gather data on the past and prevailing interest rates from the CBK.

3.5 Research Procedure

Research procedure is the actual conduct of the research. The first step entailed the preparation of the research proposal. The proposal described clearly the research objectives, literature review, population of study and the data collection instruments. A checklist was prepared and pilot tested on a few companies listed to check its validity. When found appropriate for the study, the checklist was then used for all the companies. This was followed by access to the data on stock price movements, volumes traded and lending rates of the listed banks from July 2015 to December 2016. This data was accessed from the NSE daily market report and the Central Bank of Kenya.

3.6 Data Analysis Methods

The data collected was stored in an appropriate format that permitted statistical analysis. Correlational analysis of stock prices and interest rates and stock volumes and interest rates was done and the analysis entailed computer-aided, statistical manipulation. The measures of the variables important to the research problem were built in the checklist. All the data collected was entered into the statistical package and data cleaned for missing values and data entry errors. Data analysis was done using IBM SPSS 22.0 and Microsoft Excel. The quantitative data was analyzed and an interpretation of the statistical outputs done done and discussed in the presentation of results and findings.
3.7 Chapter Summary
This chapter presents the research methodology that was used for this study. The chapter covered research design, population and sampling design, data collection methods, research procedures, data analysis methods. This chapter generally identified significant aspects of collecting, collating, analyzing and presenting research data. It included the process of identifying the population of the study, the sample frame, the sample size (in this case, census population), data collection instrument, and the mode of data analysis and presentation. In the next chapter a detailed analysis of collected data was done and findings presented by use of tables and figures generated from Microsoft Excel and SPSS as the analysis tools.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the findings of the study. The main objective of the study was to determine the effect of the capping of interest rates on the bank stocks listed on the NSE. The prevailing interest rate data used was obtained from the Central Bank of Kenya while the share prices and volumes data was obtained from the NSE. The study used descriptive and inferential analytical techniques to analyze the data obtained. The findings were presented using tables, and graphs for simplified discourse.

The study targeted the 11 banks listed at the NSE and data was obtained for all the Banks. This therefore created a response rate of 100%. According to Mugenda and Mugenda (2003), a 50% response rate is adequate, 60% is good and above 70% is rated very good. This also collaborates Bailey’s (2000) assertion that a response rate of 50% is adequate, while a response rate greater than 70% is very good. This implies that based on this assertion; the response rate which in this case was 100% is excellent.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Response Rate</th>
<th>Frequency</th>
<th>Percenta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>11</td>
<td>100.00</td>
</tr>
<tr>
<td>Unresponse</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

The study looked at the eleven banks which are listed in the Nairobi Securities Exchange (NSE). Out of all 41 commercial banks in Kenya, only 11 banks are listed while 30 banks are not listed. NSE is a Kenyan share trading corporation that is mandated with the management and control of the ownership and exchange of shares among the different participating entities.
Fig 4.1: Commercial Banks in Kenya

This chapter is broken down into various sections: Section 4.2 presents the general information for the study, section 4.3 shows the relationship between the bank stock prices and the lending rates for Q3 and Q4 in 2015 and in 2016, section 4.4 shows the relationship between bank stock volumes traded and lending rates for Q3 and Q4 in 2015 and in 2016 while section 4.5 makes a comparison of the two previous sections to see any significant differences.

4.2 General Information

The purpose of this study was to investigate the effects of the recent capping of interest rates by the Central Bank of Kenya (CBK) on the shares of the banks listed in the Nairobi Securities Exchange (NSE) of Kenya. The study sought to answer questions on how important the bank lending rates are as a factor to consider when making the decision to invest in bank shares, how attractive the bank shares remained after the interest rate cap was introduced and whether the directive to cap interest rates can be considered an event study.

The listed banks under examination in this study were: I&M holdings ltd, HF group ltd, National bank of Kenya ltd, NIC bank ltd, Standard chartered bank ltd, Equity group holdings, The cooperative bank of Kenya ltd, KCB group ltd, Diamond trust bank Kenya ltd, CFC Stanbic holdings ltd and Barclays bank ltd.
### 4.3 Relationship between lending rates and stock prices

**Table 4.2 Correlation between lending rate and stock prices in 2015**

<table>
<thead>
<tr>
<th>2015 STOCK PRICES</th>
<th>2015 lending rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>KCB Bank</td>
<td>-0.693</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>Equity Bank</td>
<td>N</td>
</tr>
<tr>
<td>Coop Bank 2015</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Barclays Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>DTB Bank 2015</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>CFC Bank 2015</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Hfgroup</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>I&amp;M Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>NBK Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>NIC Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Stanchart Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

A Pearson correlation test was done to investigate the statistical significance effects of the lending interest rates on the bank stock prices in 2015. It was found that the stock
prices of the CFC bank, NBK and Standard chartered bank were statistically significantly influenced by the lending rates while other banks were not significantly influenced.

The effect of the lending interest rate was statistically significant at \( r = -0.763 \) and \( p\)-value=0.046< 0.05 level of significance for the CFC bank, \( r = -0.829 \) and \( p\)-value=0.021< 0.05 level of significance for the NBK and \( r = -0.816 \) and \( p\)-value=0.025< 0.05 level of significance for the standard chartered. The results are as shown in the table 4.3.1

All the Pearson correlation values are negative meaning that the lending interest rates negatively affect the bank stock prices.

The study found that the prevailing lending rate can greatly affect the share prices of Kenyan commercial banks with an increase in lending rate causing a decrease in share prices and vice versa. The share prices have a negative relationship to the lending rates. The study found a statistically significant negative impact of commercial banks share prices and the prevailing lending rate. This confirms that the study has found a significant relationship between lending rate and share price of commercial banks in the NSE.

4.3.2 Correlation between lending rate and stock prices in 2016

A Pearson correlation test was done to investigate the statistical significance effects of the lending interest rates on the bank stock prices in 2016. It was found that only the stock prices of the Coop bank and KCB were not statistically significantly affected by the lending rates while other banks were significantly affected.

The effect of the lending interest rate was strongly statistically significant at \( r = -0.943 \) and \( p\)-value=0.002< 0.05 level of significance for the equity bank, \( r = 0.953 \)and \( p\)-value=0.001< 0.05 level of significance for the Barclays bank, \( r = -0.944 \) and \( p\)-value=0.001< 0.05 level of significance for the DTB. \( r = 0.860 \) and \( p\)-value=0.013< 0.01 level of significance for the CFC bank, \( r = 0.877 \) and \( p\)-value=0.010< 0.05 level of significance for the HF bank, \( r = 0.961 \) and \( p\)-value=0.001< 0.05 level of significance for the I&M bank, \( r = 0.821 \) and \( p\)-value=0.024< 0.01 level of significance for the National bank, \( r = 0.984 \) and \( p\)-value=0.000< 0.05 level of significance for the standard chartered and \( r = 0.849 \) and \( p\)-value=0.016< 0.01 level of significance for the NIC bank. All the
Pearson correlation values are positive meaning that the lending interest rates in 2016 positively affect the bank stock prices.

Comparing the effects of lending rates in 2015 and in 2016 the analysis proves that in 2015 the bank stock prices were negatively affected while in 2016 the stock bank prices were positively affected. From the comparisons of the year 2015 and 2016 we can say in 2015, the lending rates for the stock prices of the commercials banks at the NSE was significant negatively which means a decrease in the lending interest rates will cause a decrease in the stock prices, and the year 2016 we saw commercial banks having a significant positive correlation which means an increase in the lending interest rates has an increase in the stock prices of the commercial banks.
### Table 4.3 Correlation between lending rate and stock prices in 2016

<table>
<thead>
<tr>
<th>2016 stock price</th>
<th>2016 lending rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCB Bank</td>
<td>Pearson Correlation: 0.481</td>
</tr>
<tr>
<td>Equity Bank</td>
<td>Pearson Correlation: 0.934**</td>
</tr>
<tr>
<td>COOP Bank</td>
<td>Pearson Correlation: 0.308</td>
</tr>
<tr>
<td>Barclays Bank</td>
<td>Pearson Correlation: 0.953**</td>
</tr>
<tr>
<td>DTB Bank</td>
<td>Pearson Correlation: 0.944**</td>
</tr>
<tr>
<td>CFC Bank</td>
<td>Pearson Correlation: 0.860*</td>
</tr>
<tr>
<td>HF GROUP</td>
<td>Pearson Correlation: 0.877**</td>
</tr>
<tr>
<td>I&amp;M Bank</td>
<td>Pearson Correlation: 0.961**</td>
</tr>
<tr>
<td>NBK</td>
<td>Pearson Correlation: 0.821*</td>
</tr>
<tr>
<td>Stanchart Bank</td>
<td>Pearson Correlation: 0.984**</td>
</tr>
<tr>
<td>NIC Bank</td>
<td>Pearson Correlation: 0.849*</td>
</tr>
</tbody>
</table>
### 4.4 Relationship between lending Rates and Stock Volumes

**Table 4.4 Correlation between lending rate and Share volume in 2016**

<table>
<thead>
<tr>
<th>Bank</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCB Bank</td>
<td>-0.648</td>
<td>0.116</td>
<td>7</td>
</tr>
<tr>
<td>Equity Bank</td>
<td>-0.938**</td>
<td>0.002</td>
<td>7</td>
</tr>
<tr>
<td>Barclays Bank</td>
<td>-0.794*</td>
<td>0.033</td>
<td>7</td>
</tr>
<tr>
<td>NIC Bank</td>
<td>0.701</td>
<td>0.079</td>
<td>7</td>
</tr>
<tr>
<td>CFC Bank</td>
<td>-0.364</td>
<td>0.422</td>
<td>7</td>
</tr>
<tr>
<td>I&amp;M Bank</td>
<td>-0.376</td>
<td>0.406</td>
<td>7</td>
</tr>
<tr>
<td>DTB Bank</td>
<td>-0.496</td>
<td>0.257</td>
<td>7</td>
</tr>
<tr>
<td>HF group</td>
<td>-0.197</td>
<td>0.671</td>
<td>7</td>
</tr>
<tr>
<td>NBK Bank</td>
<td>0.5</td>
<td>0.254</td>
<td>7</td>
</tr>
<tr>
<td>Stanchart Bank</td>
<td>-0.515</td>
<td>0.237</td>
<td>7</td>
</tr>
<tr>
<td>Coop Bank</td>
<td>-0.879**</td>
<td>0.009</td>
<td>7</td>
</tr>
</tbody>
</table>
A Pearson correlation test was done to investigate the statistical significance effects of the lending interest rates on the bank shares in 2016. It was found that the shares volumes of the equity bank, Barclays bank and coop bank were statistically significantly affected by the lending rates while other banks were not significantly affected.

The effect of the lending interest rate was statistically significant at $r=-0.938$ and $p$-value=$0.02<0.05$ level of significance for the equity bank, $r=-0.794$and $p$-value=$0.033<0.05$ level of significance for the Barclays bank and $r=-0.879$ and $p$-value=$0.009<0.05$ level of significance for the coop bank.

All the Pearson correlation values are negative meaning that the lending interest rates negatively affect the volume of the bank shares. This means that in the year 2016 an increase in the lending interest rate lead to a decrease in the share of volume of shares traded in the NSE for the commercial banks, which implies investors went ahead to invest into other sectors of the economy such as the real estates.

**4.4.2 Correlation between lending rate and share volume in 2015**

A Pearson correlation test was done to investigate the statistical significance effects of the lending interest rates on the bank shares in 2015. It was found that the shares volume of the National bank (NBK) was statistically significantly affected by the lending rates while other banks were not significantly affected.

The effect of the lending interest rate was statistically significant at $r=0.899$ and $p$-value=$0.006<0.05$ level of significance for the National bank.

From the analysis it can be concluded that the lending interest rates in 2015 did not significantly affect shares volume of almost all banks compared to 2016.
Table 4.5 Correlation between lending rate and share volume in 2015

<table>
<thead>
<tr>
<th>2015 volumes</th>
<th>2015 lending rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>KCB Bank</td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Equity Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Barclays Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>NIC Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>CFC Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>I&amp;M Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>DTB Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>HF group</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>NBK Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Stanchart</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Coop Bank</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>
4.4.3 Share volume monthly analysis

The volume shares for KCB in 2015 June was 46,611,900 and in 2016 June it changed to 53,994,800 meaning that there was a positive change of 4392900. This shows that there was increase in the number of shares being trade by KCB banks which was due to the growth in terms of shares traded. In July 2015, the volume was 49,692,000 and changed to 31,825,000 in 2016, meaning there was a negative change of 17867000. This was a drop; it is due to the interest rate capping which affected many commercial banks. In August 2015, the volume was 71,644,900 and changed to 100,289600 in August 2016, meaning there was a positive change of 2864700. This was an increase in the volume of the shares traded which might have resulted to the drop of the stock prices in the Nairobi securities Exchange and attractive prices of the stocks to the investors.

In September 2015, the volume was 28,970,200 and changed to 74,777,100 in September 2016, meaning there was a positive change of 45806900. This again was because of the fall of the prices of the stocks which attracts more investors or existing investors to reinvest more shares to their portfolio. In October 2015, the volume was 59,174,600 and changed to 39,403,500 in October 2016, meaning there was a negative change of 19771100. In November 2015, the volume was 44,013,300 and changed to 32,247,300 in November 2016, meaning there was a negative change of 11766000. In December 2015, the volume was 54,546,700 and changed to 26,720,100 in December 2016, meaning there was a negative change of 27826600. As from the month of the September 2016 these commercial banks started experiencing the impact of the interest capping rate.

The volume shares for Equity bank in 2015 June was 197,751,700 and in 2016 June it changed to 78,138,100 meaning that there was a negative change of 119,613,600. In July 2015 the volume was 132,303,400, and changed to 114,785,400 in 2016, meaning there was a negative change of 17,518,000. In August 2015, the volume was 177,039,600 and changed to 88,276,600 in August 2016, meaning there was a positive change of 88,763,000. In September 2015, the volume was 27,886,500 and changed to 114,307,000 in September 2016, meaning there was a positive change of 86,420,500.

In October 2015, the volume was 32,790,200 and changed to 177,703,200 in October 2016, meaning there was a negative change of 144,913,000. In November 2015 the
volume was 75,010,100 and changed to 34,820,300 in November 2016, meaning there was a negative change of 40,189,800, In December 2015 the volume was 117,251,300 and changed to 30,727,800 in December 2016, meaning there was a negative change of 86,523,500.

4.5 Interest Rate Capping as an Event Study

The event window for the interest rate cap event was thirty days before September 2016 and thirty days after. This means the period under study is August to October 2016. Below is a look at the 2016 price changes during the event window.

Fig 4.2: KCB Average Stock Prices-2016

In the month of September 2016, the stock price values of KCB fell from Kes 24 to Kes 23.5 before bouncing back to highs of Kes 27 in October.

Fig 4.3: Equity Average Stock Prices-2016
In the month of September 2016, the stock price values of Equity bank hit lows of Kes 24 from a high of Kes 38 before bouncing back to Kes 30.8 in October.

**Fig 4.4: Co-op Average Stock Prices-2016**

In the month of September 2016, the stock price values of Cooperative bank hit lows of Kes 9.8 from a high of Kes 10 before bouncing back to Kes 12.2 in October.

**Fig 4.5: Barclays Average Stock Prices-2016**

In the month of September 2016, the stock price values of Barclays bank hit lows of Kes 8.2 from a high of Kes 9.8 before bouncing back to Kes 8 in October.
Fig 4.6: DTB Average Stock Prices-2016

In the month of September 2016, the stock price values of DTB hit lows of Kes 138 from a high of Kes 160 before bouncing back to Kes 140 in October.

Fig 4.7: CFC Average Stock Prices-2016

In the month of September 2016, the stock price values of CFC hit lows of Kes 77 from a high of Kes 80 and continued to fall to Kes 75 in October.
Fig 4.8: HF Group Average Stock Prices-2016

In the month of September 2016, the stock price values of HF group hit lows of Kes 6.2 from a high of Kes 17 and continued to fall to Kes 15.6 in October.

Fig 4.9: I&M Average Stock Prices-2016

In the month of September 2016, the stock price values of I&M bank hit lows of Kes 88 from a high of Kes 104 and then the price rose to Kes 90 in October.
Fig 4.10: NBK Average Stock Prices-2016

In the month of September 2016, the stock price values of I&M bank hit lows of Kes 6.6 from a high of Kes 7.5 and then the price rose slightly to Kes 6.8 in October.

Fig 4.11: Stanchart Average Stock Prices-2016

In the month of September 2016, the stock price values of Stanchart bank hit lows of Kes 188 from a high of Kes 207 and then the price continued to fall to Kes 184 in October.
In the month of September 2016, the stock price values of NIC bank hit lows of Kes 26.5 from a high of Kes 31 and then the price rose slightly to Kes 27.5 in October.

### 4.5.2 Ownership of Shares

The volume shares for KCB in August 2016 was 100,289,600 and in September was 74,777,100, October was 39,403,500. As from the month of the September 2016 these commercial banks started experiencing the impact of the interest capping rate. The Equity bank the shares traded was 88,276,600 in August 2016, 177,703,200 in October 2016, for the Barclays bank the shares traded was 12,236,000 in August 2016, 25,978,600 shares in September 2016, and 20,580,500 of shares traded in October 2016.

For the NIC bank 5,294,300 shares traded in August, 1,332,500 shares traded in September in 2016, and 1,760,400 of shares traded in October 2016, the volume of other commercial banks CFC 357,800 shares traded in August, 7,969,500 of shares traded in September, and 1,215,700, of shares traded in October, while DTB 464,200 shares traded in August, 1,629,600 of shares traded in September and a total of 555,100 shares traded for the month of October.

For Stanchart bank, 233,600 shares traded in August, 310,400 shares traded in September, 1,381,400 of shares traded in October 2016 while for HF 584,200 of...
shares traded in the month of August 2016, 1,206,500 shares traded in the month of September 2016 and 959,000 shares traded in the month of October 2016.

The volume of shares of NBK 296,600 traded was in August 2016, 190,900 shares traded in the month of September 2016, 186,100 shares traded in the month of October 2016, for the Cooperative Bank 8,990,000 shares traded in the month of August, 24,431,300 shares traded in the month of September, and 31,758,500 shares traded in the month of October 2016.

4.6 Chapter Summary

This chapter looked at the analysis of the data collected which was the stock price data; the volumes traded data and the interest rates data. An analysis of the collected data was carried out using SPSS software and Microsoft Excel. The results were presented in form of graphs and tables for ease of analysis. The data collected and analyzed helped in getting answers to the research questions that were posed in chapter one and in chapter five, discussions and conclusions on the findings will be discussed.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a discussion of the findings, conclusions and recommendations for further research on the problem. The chapter begins with a summary of the study, followed by discussions on the major findings and finally draws conclusions based on the results.

5.2 Summary of Findings

The purpose of this study was to investigate the effects of the recent capping of interest rates by the Central Bank of Kenya (CBK) on the shares of the banks listed in the Nairobi Securities Exchange (NSE) of Kenya. To this end, the study sought to answer the following questions:

(i) How important is the bank interest rate as a factor when investing in bank shares?
(ii) How attractive are bank shares after the interest rate cap was introduced?
(iii) To what extent was the capping of interest rates an event study?

The study was conducted in Nairobi for a period of three months and relied on correlation design. The population of this study was the eleven banks listed on the NSE and since the population size was small, it also constituted the sample size. Data on monthly average bank share prices, monthly average bank share volumes and Central Bank’s monthly average lending rates was collected using a checklist. After collection, the data was tabulated into manageable tables. The data was then analyzed using correlation, and graphs to show a clear trend in the price, volumes and interest rates movements.

Analysis of the importance of bank interest rates as a factor to consider when making the decision to invest in bank shares showed that an increase in lending rates led to an increase in share prices while a decrease in the lending rates led to a decrease in the share prices. For most banks in the year 2016, there was a sharp decline in the share prices when lending rates were lowered. Some Banks’s share prices lost almost half their values while the majority had more than 11% decline in the share price.
An analysis on the attractiveness of the bank share prices after the capping of interest rates in September 2016 showed that a decrease in the lending rates led to many investors selling the bank shares in their portfolios and probably opting for other investment alternatives. The results showed that the capping of interest rates made the bank shares less attractive compared to other investments alternatives.

An analysis on whether the announcement of the capping of interest rate could be considered an event study looked at the event window, which was 30 days before the capping of interest rates and 30 days after. The results showed that in the month of September 2016, there was a drop in the prices of all the listed banks’ shares compared to the month of August 2016 which was 30 days prior to the announcement. The prices however showed slight improvement in the month of October 2016, which marked the close of the event window with most of them surpassing the September 2016 values. In October 2016, KCB and Cooperative bank share prices surpassed the value they had in August 2016 of Kes 24.00 and Kes 10.00 respectively to close the month of October 2016 at Kes 30.00 and Kes 12.45 respectively.

5.3 Discussion

5.3.1 Factors Affecting the Return of Bank Stocks

The study found that only the stock prices of KCB and Cooperative bank were not significantly affected by the reduction in the lending rates. KCB and Cooperative banks are the two largest banks in Kenya in terms of asset size and this could help explain why their share prices were not significantly affected. All the other listed banks posted positive Pearson correlation values in the third and fourth quarter of the year 2016 meaning that when the lending rates were decreased, the share prices also fell.

The study also found that the prevailing lending rate can greatly affect the share prices of Kenyan commercial banks with an increase in lending rate causing a decrease in share prices and vice versa. The share prices have a negative relationship to the lending rates. The study found a statistically significant negative impact of commercial banks share prices and the prevailing lending rate. This confirms that the study has found a significant relationship between lending rate and share price of commercial banks in the NSE.
The capping of interest rates means that the banks can no longer enjoy the huge spreads between the deposit and lending rates which ensured hefty profits and investors have picked up on this which would explain the decline in demand for the shares and hence low prices.

Existing literature shows that interest rates have a direct effect on the activities of commercial banks because of the strong belief that they affect the financial performance banks (Priti, 2016). Traditionally, retail banks make money by relying on the relationship between interest rates, deposits and the loans issued to clients. Therefore, it makes sense for financial analysts to focus on bank stocks as the interest rates rise or fall. A comprehensive understanding of how interest rate affects the valuation of bank stocks and the overall exchange rate is very important when one considers that some banks have foreign operations (Zaman, et al., 2013). The difference between the short-term interests paid to deposits and savers and the longer-term interests paid by borrowers is the interest earned by banks. A steep yield curve means the commercial banks are generating high interests (Tran, 2013).

Unanticipated changes in government regulation of interest rates affect the decisions made by investors in a positive or negative manner. A change in the ceiling interest rate pushed investors and other financial institutions to forecast the effect on future cash flows, which affects stock valuation (Koch, 2015). The introduction of an interest rate ceiling in Kenya also caused jitters among investors since this regulation means that banks will have reduced future cash flows from loans advanced and they have to pay significantly more to the depositors. The deposit rate is currently at 70% of the CBR while the lending rate is currently pegged at 400 basis points above the CBR. The current CBR is 10% and the Monetary Policy Committee (MPC) has maintained the rate at 10% since the introduction of the new regulation. These findings thus support existing literature that changes in government regulations affects the return on bank stocks.

One of the factors that influence individual investment choices at the NSE is the Herding mentality. Herding is a behavioural factor that causes investors to make investment decisions based on their neighbours decisions without really conducting their own analysis. This behavior affects the return of stocks since it may lead to drastic changes in supply and demand without any fundamental analysis explanations. Looking
at the decline in stock prices in 2016, that decline has some elements of the herding mentality since most retail investors do not conduct fundamental analysis but rather rely on what is reported in the media. This study thus supports existing literature that sensitivity to the choices of other investors can influence investment decisions, which means it affects the general return on bank stocks.

5.3.2 Attractiveness of Bank Stocks

A Pearson correlation test was done to investigate the statistical significance effects of the lending interest rates on the bank shares volumes in 2016 and 2015. It was found that the shares volumes of the equity bank, Barclays bank and coop bank were statistically significantly affected by the lending rates while other banks were not significantly affected.

The effect of the lending interest rate on share volumes traded was statistically significant at $r=-0.938$ and $p$-value $=0.02<0.05$ level of significance for the equity bank, $r=-0.794$ and $p$-value $=0.033<0.05$ level of significance for the Barclays bank and $r=-0.879$ and $p$-value $=0.009<0.05$ level of significance for the coop bank.

All the Pearson correlation values were negative meaning that the lending interest rates negatively affect the volume of the bank shares. This means that in the year 2016 an increase in the lending interest rate lead to a decrease in the share of volume of shares traded in the NSE for the commercial banks, which implies investors went ahead to invest into other sectors of the economy such as the real estates. Share price for KCB in October 2016 was higher than the share price in August 2016 meaning that after the interest rate cap was introduced, the price only reacted to the information for a few days and stabilized afterwards. Large banks like KCB are seen as too big to fail and have the government as a shareholder which makes investors that their wealth is safe.

Existing literature shows that the attractiveness of bank stocks is affected by a myriad of factors one of which is the interest rate sensitivity of the bank’s stock returns since they determine the profit margin of the bank. According to Odhiambo (2010), the interest rate reforms have influenced positive economic growth in Kenya. According to Odhiambo (2009), the interest rate policy in Kenya remained unchanged between in the 1960s and 1970s. At that time, the government used interest rates to fix minimum saving rates for all institutions accepting deposits and minimum rates of lending for
commercial banks, and other lending institutions. The prevailing policy at that time was the use of low-interest policy to protect small borrowers and encourage investment.

The perception that the government is willing to protect shareholders in large banks makes the stocks for large banks attractive to investors (Tran, 2013). The level of risks taking that can be perceived as negative varies with the size of the bank because of the implicit government guarantee that exists with large banks. This study found that KCB, which is the largest bank in the country in terms of asset book size had r=-0.648 meaning the negative effects of the lending rates on share volumes did not affect the bank significantly.

Existing literature shows that Bank capital is an important factor considered by investors because it gives the confidence that they cover the risk of unexpected losses, which reduces the risk of bank failure. Smaller banks tend to hold a higher stock of capital because of the need to raise additional capital in case of a risk. Bank capital is a key line of defense against deposits and creditors in case of the bank failure (Harding, Liang, & Ross, 2013). It provides security for investors and makes bank stocks attractiveness. The securitization of bank capital increases the valuation of bank stocks because of the perception that the risk of bank failure is low (Sengupta & Hogue, 2014). This study supports the existing literature that a bank’s capital structure and size do affect the investor’s view of whether the bank’s shares are a good investment.

5.3.3 Capping of Interest Rates as an Event Study

The event window for the interest rate cap event was thirty days before September 2016 and thirty days after. This means the period under study is August to October 2016. In the month of September 2016, the stock price values of KCB fell from Kes 24 to Kes 23.5 before bouncing back to highs of Kes 27 in October, the stock price values of Equity bank hit lows of Kes 24 from a high of Kes 38 before bouncing back to Kes 30.8 in October. In the month of September 2016, the stock price values of Cooperative bank hit lows of Kes 9.8 from a high of Kes 10 before bouncing back to Kes 12.2 in October while the stock price values of Barclays bank hit lows of Kes 8.2 from a high of Kes 9.8 before bouncing back to Kes 8 in October.

The stock price values of DTB hit lows of Kes 138 from a high of Kes 160 before bouncing back to Kes 140 in October and the stock price values of CFC hit lows of Kes 77 from a high of Kes 80 and continued to fall to Kes 75 in October. In the month of
September 2016, the stock price values of HF group hit lows of Kes 6.2 from a high of Kes 17 and continued to fall to Kes 15.6 in October while the stock price values of I&M bank hit lows of Kes 88 from a high of Kes 104 and then the price rose to Kes 90 in October. The stock price values of I&M bank hit lows of Kes 6.6 from a high of Kes 7.5 and then the price rose slightly to Kes 6.8 in October and the stock price values of Stanchart bank hit lows of Kes 188 from a high of Kes 207 and then the price continued to fall to Kes 184 in October. Finally, in the month of September 2016, the stock price values of NIC bank hit lows of Kes 26.5 from a high of Kes 31 and then the price rose slightly to Kes 27.5 in October.

This study found that all eleven listed banks had a drop in their share prices in the month of September 2016 compared to the previous month of August 2016. Equity bank shed 37% of its share price in the month of September which was the highest percentage drop in price, KCB shed 13%, Coop bank shed 1%, Barclays bank shed 16% , DTB she 13%, CFC shed 4%, HF shed 5%, I&M shed 15%, NBK shed 12%, Stanchart shed 9% and NIC shed 15%. In the month of October 2016, the bank shares showed a steady recovery in their prices with KCB gaining 29%, Equity gaining 28% and Cooperative bank gaining 26%. HF group price had the largest drop in October 2016 with a further decline of 4% from September.

The assumption in an event study is that the security prices in an efficient market are a full reflection of the available information and adjust to new information easily. Therefore, the level of impact a new policy will have on a given firm will be reflected in the change in the security price of the firm at the time the new policy was expected (Beigi & Budzinski, 2013). Beigi and Buzinski have raised concerns about the accuracy of the event study when it comes to analyzing economic policies.

Some studies fail to account for other events that might have occurred during the same time that the interest ceilings were introduced in the economy. The implicit assumption is that interest ceiling is not the only factor that can tamper with the result because it is not a reflection of the practical reality. Some periods are characterized by major macroeconomic events and some regulatory changes.

Some of the difficulties associated with an event study include the accurate identification of the specific date for the new policy. The new policy might be embedded in the security before the date anticipated by the researcher. For this study,
the bill to cap interest rates was sent to the President in August 2016 and share prices were not affected during this month since most investors believed the president would not sign it into law. During mid-september 2016 when the bill was signed into law, the share prices significantly fell meaning investors considered this as the actual event date. The sharp declines in the share prices during the event window do show that the information on the passing of the bill to cap interest rates had not been previously captured in the prices and that the passing of the bill into law was an actual event.

5.4 Conclusion

5.4.1 Factors Affecting the Return of Bank Stocks

From the findings discussed above, interest rates charged by commercial banks are a major factor that affects the return on bank stocks. There is a general positive relationship between the lending rates and the stock prices. When the lending rates were capped, there was a general decline in the share prices for the listed bank stocks.

Unexpected changes in regulations also affect the return of bank stocks. These changes in regulations have an impact in the future cashflows of banks and other institutions in general and this leads investors to either increase or reduce their demand for the stocks depending on the effect of the government regulation on the cashflows.

5.4.2 Attractiveness of Bank Stocks after the Capping of Interest Rates

This study concludes that investors are diversifying their portfolios and looking into other alternative investments since the capping of interest rates came into effect. However, the bank shares of the first tire banks are still attractive owing to the fact that most of them have government backing and the others are international banks. Barclays bank, Cooperative bank and DTB bank remain highly attractive especially after continuing to post an increase in their profits despite the interest rate cap.

5.4.3 Capping of Interest Rates as an Event Study

This study concludes that the signing into law of the bill that capped interest rates at 400 basis points above the CBR qualifies to be an event study. During the event window, which was between August 2016 and October 2016, there were significant changes in the share prices and share volumes traded compared to other months.
However, the effect of other informational events during the same period should be considered to understand the full impact of interest rates on the performance of banks.

5.5 Recommendations

5.5.1 Recommendations for Improvement

5.5.1.1 Factors Affecting the Return of Bank Stocks

From the study, interest rates have a big impact on the return of bank stocks and as such, banks should look into diversification of their cashflow streams. With a majority of SMEs and retail investors locked out of access to loans due to their high risk nature, the study recommends that banks can look more into lending to the government and capitalize on non funded income streams like foreign exchange spreads.

5.5.1.2 Attractiveness of Bank Stocks after the Capping of Interest Rates

Since the capping of interest rates effectively reduces the spread between the deposit and lending rates, investors are now concerned with the future cashflows of the banks they invest in especially for the banks that are local and the government is not a shareholder. The study recommends that investors should look into other investment areas like Treasury bills and bonds as well as other sectors like real estate.

5.5.1.3 Capping of Interest Rates as an Event Study

The finding of this study show the capping of interest rates was an event in the financial sector. The study recommends that when conducting an event study, it is important to be aware of the fact that other non event information or activity might occur at the same time as the event under study which could lead to inaccurate findings on the event. It is also important for anyone undertaking an event study to know that sometimes information can be reflected in the share prices before the actual event date.

5.5.2 Recommendation for Further Research

This study concentrated on the banking sector of the Nairobi Securities Exchange. There is therefore need for research in the other sectors so as to see the full impact on the NSE of the capping of interest rates. The study also focussed on the lending rates and not deposit rates. Finally the study recommends further studies on other factors that influence movements in stock prices.
References


Laws of Kenya, the Kenya banking act, cap 488


www.businessdailyafrica.com

www.centralbank.go.ke

www.nse.co.ke
APPENDICES

Appendix 1: Average Share Prices (Kenya shillings)

<table>
<thead>
<tr>
<th></th>
<th>2015 Average Stock Prices</th>
<th>2016 Average Stock Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JUNE</td>
<td>JULY</td>
</tr>
<tr>
<td>KCB</td>
<td>58</td>
<td>54</td>
</tr>
<tr>
<td>EQUITY</td>
<td>47</td>
<td>45</td>
</tr>
<tr>
<td>CO-OP</td>
<td>21.65</td>
<td>21</td>
</tr>
<tr>
<td>BARCLAYS</td>
<td>15.45</td>
<td>15</td>
</tr>
<tr>
<td>DTB</td>
<td>225</td>
<td>215</td>
</tr>
<tr>
<td>CFC</td>
<td>108</td>
<td>107</td>
</tr>
<tr>
<td>HF</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>I&amp;M</td>
<td>117</td>
<td>114</td>
</tr>
<tr>
<td>NBK</td>
<td>20.8</td>
<td>18.5</td>
</tr>
<tr>
<td>STANCHAR T</td>
<td>52.4</td>
<td>50</td>
</tr>
<tr>
<td>NIC</td>
<td>52</td>
<td>50</td>
</tr>
</tbody>
</table>
### Appendix 2: Average Volumes Traded (millions)

#### 2015

<table>
<thead>
<tr>
<th></th>
<th>CO-OP</th>
<th>KCB</th>
<th>Equity</th>
<th>Brclys</th>
<th>NIC</th>
<th>Stchrt</th>
<th>CFC</th>
<th>NBK</th>
<th>I&amp;M</th>
<th>DTB</th>
<th>HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEC</td>
<td>10,211,300</td>
<td>54,546,700</td>
<td>117,251,300</td>
<td>5,109,400</td>
<td>1,349,800</td>
<td>419,900</td>
<td>2,336,700</td>
<td>444,400</td>
<td>156,100</td>
<td>246,510</td>
<td>34,813,400</td>
</tr>
<tr>
<td>NOV</td>
<td>20,866,500</td>
<td>44,013,300</td>
<td>75,010,100</td>
<td>17,497,200</td>
<td>903,100</td>
<td>248,100</td>
<td>6,337,400</td>
<td>311,100</td>
<td>115,600</td>
<td>899,690</td>
<td>3,777,000</td>
</tr>
<tr>
<td>OCT</td>
<td>21,409,900</td>
<td>59,174,600</td>
<td>177,703,200</td>
<td>25,032,300</td>
<td>2,462,900</td>
<td>233,600</td>
<td>1,844,800</td>
<td>674,600</td>
<td>111,100</td>
<td>1,444,520</td>
<td>1,194,500</td>
</tr>
<tr>
<td>SEP</td>
<td>11,523,800</td>
<td>28,970,200</td>
<td>27,886,500</td>
<td>26,239,800</td>
<td>1,572,600</td>
<td>310,400</td>
<td>3,642,500</td>
<td>528,200</td>
<td>111,100</td>
<td>899,690</td>
<td>3,777,000</td>
</tr>
<tr>
<td>AUG</td>
<td>17,056,200</td>
<td>71,644,900</td>
<td>132,303,400</td>
<td>7,993,500</td>
<td>2,224,000</td>
<td>1,042,100</td>
<td>1,195,900</td>
<td>446,900</td>
<td>125,100</td>
<td>607,310</td>
<td>1,843,300</td>
</tr>
<tr>
<td>JUN</td>
<td>24,302,200</td>
<td>49,611,900</td>
<td>197,751,700</td>
<td>8,996,200</td>
<td>1,770,600</td>
<td>295,500</td>
<td>1,279,500</td>
<td>674,600</td>
<td>576,600</td>
<td>1,189,870</td>
<td>1,194,500</td>
</tr>
</tbody>
</table>

#### 2016

<table>
<thead>
<tr>
<th></th>
<th>CO-OP</th>
<th>KCB</th>
<th>Equity</th>
<th>Brclys</th>
<th>NIC</th>
<th>Stchrt</th>
<th>CFC</th>
<th>NBK</th>
<th>I&amp;M</th>
<th>DTB</th>
<th>HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEC</td>
<td>15,053,700</td>
<td>26,720,100</td>
<td>30,727,800</td>
<td>6,200,000</td>
<td>2,500,000</td>
<td>2,500,000</td>
<td>133,888</td>
<td>684,200</td>
<td>469,100</td>
<td>1,185,300</td>
<td>34,813,400</td>
</tr>
<tr>
<td>NOV</td>
<td>20,866,500</td>
<td>44,013,300</td>
<td>75,010,100</td>
<td>17,497,200</td>
<td>903,100</td>
<td>248,100</td>
<td>6,337,400</td>
<td>311,100</td>
<td>115,600</td>
<td>899,690</td>
<td>3,777,000</td>
</tr>
<tr>
<td>OCT</td>
<td>8,990,000</td>
<td>39,403,500</td>
<td>32,790,200</td>
<td>12,236,000</td>
<td>5,294,300</td>
<td>282,333</td>
<td>357,800</td>
<td>296,600</td>
<td>365,200</td>
<td>464,200</td>
<td>584,200</td>
</tr>
<tr>
<td>SEP</td>
<td>24,431,300</td>
<td>74,777,100</td>
<td>114,307,000</td>
<td>25,978,600</td>
<td>1,332,500</td>
<td>528,444</td>
<td>7,969,500</td>
<td>190,900</td>
<td>676,800</td>
<td>1,629,600</td>
<td>1,194,500</td>
</tr>
<tr>
<td>AUG</td>
<td>31,758,300</td>
<td>100,289,600</td>
<td>88,276,600</td>
<td>20,580,500</td>
<td>1,760,400</td>
<td>355,333</td>
<td>1,215,700</td>
<td>186,100</td>
<td>3,068,300</td>
<td>555,100</td>
<td>1,499,900</td>
</tr>
<tr>
<td>JUN</td>
<td>21,243,800</td>
<td>31,825,000</td>
<td>114,785,400</td>
<td>15,308,500</td>
<td>919,700</td>
<td>198,668</td>
<td>268,400</td>
<td>164,800</td>
<td>729,600</td>
<td>728,200</td>
<td>576,900</td>
</tr>
<tr>
<td>JUN</td>
<td>29,242,300</td>
<td>53,994,800</td>
<td>78,138,100</td>
<td>13,276,900</td>
<td>2,922,800</td>
<td>156,999</td>
<td>1,137,400</td>
<td>267,000</td>
<td>566,900</td>
<td>1,499,900</td>
<td>1,751,800</td>
</tr>
</tbody>
</table>
### Appendix 3: Central Bank Interest Rates

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MONTH</th>
<th>LENDING RATE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>JULY</td>
<td>15.75</td>
</tr>
<tr>
<td></td>
<td>AUGUST</td>
<td>15.68</td>
</tr>
<tr>
<td></td>
<td>SEPTEMBER</td>
<td>16.82</td>
</tr>
<tr>
<td></td>
<td>OCTOBER</td>
<td>16.58</td>
</tr>
<tr>
<td></td>
<td>NOVEMBER</td>
<td>17.16</td>
</tr>
<tr>
<td></td>
<td>DECEMBER</td>
<td>18.30</td>
</tr>
<tr>
<td>2016</td>
<td>JULY</td>
<td>18.18</td>
</tr>
<tr>
<td></td>
<td>AUGUST</td>
<td>18.10</td>
</tr>
<tr>
<td></td>
<td>SEPTEMBER</td>
<td>17.66</td>
</tr>
<tr>
<td></td>
<td>OCTOBER</td>
<td>14.50</td>
</tr>
<tr>
<td></td>
<td>NOVEMBER</td>
<td>14.00</td>
</tr>
<tr>
<td></td>
<td>DECEMBER</td>
<td>14.00</td>
</tr>
</tbody>
</table>