THE EFFECT OF INTEREST RATE CAPPING ON THE SHARE RETURNS OF COMMERCIAL BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE

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DECLARATION

I declare that this Research Project is my original work and has not been submitted for an award of a degree in any other University for examination/academic purposes.

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This Research Project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

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LIST OF ABBREVIATIONS

AAR	Average Abnormal Return
CAR	Cumulative Abnormal Return
CAAR	Cumulative Average Abnormal Return
CBK	Central Bank of Kenya
CBR	Central Bank Rate
EMH	Efficient Market Hypothesis
FSL	Financial Services Law
GDP	Gross Domestic Product
ICPAK	Institute of Certified Public Accountant
IPO	Initial Public Offer
KCB	Kenya Commercial Bank
MPT	Modern Portfolio Theory
NSE	Nairobi Security Exchange
SME	Small and Medium Entrepreneurs

ABSTRACT

This is an event study looking out for the effect of Banking (Amendment) Act 2016 on the share returns of the commercial banks listed at the Nairobi Security Exchange using an event study methodology which is a descriptive research design. Based on Efficient market hypothesis, the prices of shares at the NSE ought to reflect all the market information irrespective of time. As a result, investors in the banking sector should only make normal profits. The research investigates whether the investors in the Kenyan banks listed at the NSE made abnormal returns following the signing of the Banking (Amendment) Act 2016 on 24th August 2016. The population of the study comprise of the 11 banks listed on the NSE. Secondary data covering a period of 91 days-30 days' estimation period, 30 days before and 30 days after the evet day. The banks prices and dividends data were collected from the NSE and the CBK for and analyzed using SPSS.22.0 and the Microsoft Excel. The research study indicated that following the signing of the Banking (Amendment) Act 2016 on 24th August 2016, abnormal returns were realized at the NSE shortly before and after the event day. The abnormal returns comprised of positive and negative returns. Share prices dropped immediately after the event resulting in negative abnormal returns. Market model was used in the estimation of expected returns which were used to compute the abnormal returns. Actual returns from banks less expected returns led to abnormal Return. The study indicates that the law of Banking (Amendment) Act 2016 had a negative effect on the investors of banks at the NSE. The T-test statistics indicate that the event was highly significant to most of the banks except for Stanbic bank Kenya Holdings ltd. The law should be reviewed to evaluate whether it is causing more harm than good to Kenya's economy.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The Kenyan parliament passed a law capping bank-lending interest rate and minimum interest payments on bank deposits in the country and the president assented to the Banking (Amendment) Act 2016 on 24th August 2016. As a result, the share prices of all the banks listed in the Nairobi Security Exchange plummeted to as much as a seven-year low according to the Capital Market Authority (CMA). The Central Bank of Kenya (CBK) uses monetary policies to enhance financial stability in the Kenyan economy. The control of the lending interest rates is one of the ways that the CBK uses to control the cost of lending in the country and enhance economic growth targeting small and medium entrepreneurs (SMEs). One of the biggest challenges to SMEs has been the cost of funding. Banks used to charge high lending rates which prohibited many entrepreneurs from accessing loans before the passage of the Banking (Amendment) Act 2016.

According to the law of demand and supply, interest capping interferes with the free interaction of the forces of demand and supply hence the loan's market cannot be at equilibrium. The artificial ceiling established by the government in form of the interest rate cap on the loans' supply distorts the interest rate equilibrium. The law on interest capping ignored the fact that the high interest rates charged on some borrowers provided a provision for their high risk of default. It is uneconomical to offer loans to the risky borrowers at low interest rates (Mohane, Gerhard, & William, 2002). Profitability of banks in Kenya was negatively affected by the law. This is because interest income composed of one of the highest source of income for the banks. The supply of loans to

SMEs in the economy reduced leading to a huge financial crisis to the enterprises (Black, Hartzenberg & Standish, 1997). Due to the passage of the Banking (Amendment) Act 2016, the share prices of banks listed at the Nairobi Security Exchange (NSE) dropped immediately.

The phenomenon will be explained in the research using an event study methodology based Efficient Market Hypothesis (EMH), the law of demand and supply**,** Modern Portfolio Theory (MPT), and behavioral finance theory. Banks with high retail exposure and huge non-performing loans faced a great challenge and for them to continue with their operations in the Kenyan market, they may consider consolidation with other small banks or huge banks in the industry. The Kenyans banks are in various categories. The small banks, which are in the lower category, were hit the hardest by the interest rate capping. These are banks in the tier 3 category and below. The banks in tier one and two are least likely to be affected. Due to the tightening regulation of the Kenyan banking industry, various institutions have been closed. Among them are CHASE Bank, Dubai, bank and the imperial bank. The small banks have been trying to stay afloat and a number of them such as Fidelity bank, oriental commercial bank, Guiro commercial bank, Equatorial commercial bank, and K-Rep bank had been acquired by other institutions as a way of a strategy to stay afloat (CBK, 2017).

1.1.1 Interest Rate Capping

Interest rate capping refers to the limiting of the fluctuation of the rate of interest to a given interest rate cap (Olaka, 2017). The interest rate is very important because it is one of the biggest factors that determine the uptake of loans by the banks' clients. If the

interest rate of a loan is high, it is expected that few clients will borrow however, when the interest rate is low, it is expected that many clients will borrow and be able to finance their enterprises. However, with the low interest rates, banks incur a very high risk of default. They therefore, avoid giving loans to the high-risk clients especially the young entrepreneurs and the small and middle-sized companies. The move affects the profitability of the banks negatively (Maimbo & Henriquez Gallegos, 2014). Interest income has been one of the biggest sources of revenues to the commercial banks in Kenya. The law on interest capping negatively affected the revenues from this stream and it resulted in reduced revenues in the banking sector (Kiweu, 2012). Few small and medium enterprises are in position to fund and expand their business without loans and this has again affected the Kenyan economy negatively leading to stagnation and closure of many businesses. This is due to shortage of cash flows. The bank industry in Kenya is therefore struggling trying to restructure their loan products.

The Central Bank Rate (CBR) will be used as a measure of lending interest rate capping. It will be generated from secondary sources such as the CBK. The central bank of Kenya gives the CBR on which the commercial banks base their lending interests' rate. The CBR is provided by the Central Bank of Kenya on periodical basis depending on the economic condition in the country. It is therefore fixed and dependent on the Central Bank of Kenya. Some of the measurement issues include the constant change of the lending interest rate. The CBK is in charge of determining the lending interest rate depending on the economic conditions in the country. The government policy also determines the lending interest rate. The CBK works hand in hand with treasury to ensure

that the lending interest rate and the government policies are aligned. It is in this regard that the CBK implemented the Banking (Amendment) Act 2016.

1.1.2 The Share Price of the Commercial Banks

Share price is the market value of a share at the time when it is bought or sold at the stock market. A return from share is the greatest reward to an investor in the share market (Jordan & Fischer, 2002). The returns are in form of capital gains from the sale of shares and dividends. Due to the fall in the central bank rate (CBR), the profitability of the listed commercial banks dropped and many investors were not willing to buy the banks shares. Those who had bought the shares sold them and this led to the drop of the banks' share prices on the NSE (CMA, 2016; Olaka, 2017). Many investors sold their shares and therefore, the supply of banks' shares surpassed their demand in the market leading to a drop of the share prices as stipulated by the law of demand and supply. The case is expected to continue in the short run as the banking industry in Kenya realigns itself to the new regulations brought forth by the government. The prices of the commercial banks shares listed in the NSE will be retrieved from the NSE as a secondary data.

1.1.3 Interest Rate Capping and Commercial Bank Share Prices

According to the Efficient Market Hypothesis theory, the securities' market ought to be efficient. According to Fama et al. (1969), the current prices in the securities' market always reflect every valuable information in the market. The securities' prices are fairly traded and any investor cannot make profit out of the securities' due to market inefficiencies. The shares are neither overvalued nor undervalued. It is assumed that the prices of share adjust as soon as news concerning a share emerges in the market.

Therefore, the current prices of the Kenyan commercial banks should reflect all the information concerning the development in the banking industry as far as interest rate capping is concerned according to the efficient market hypothesis. However, that was not the case when the Banking (Amendment) Act 2016 came into effect. Share prices of all the commercial banks listed at the NSE dropped (CMA, 2016). This implies that there is a negative correlation between interest rate capping and the share prices of commercial banks listed at the NSE.

The efficiency of the security market has been put in three categories namely; weak, semi-strong, and strong form efficient according to Fama et al. (1969). A market is described as weak when the share prices are determined by historical information. A market is described as semi-strong efficient whenever; changes in the shares' prices are brought about by private information. The markets are described as strong efficient whenever the prices of the share changes due to fresh publicly available information (Makokha, 2012; Brown & Reilly, 2012). According to the Behavioral Finance Theory, investors in the market tend to act based on their emotions. Therefore, they have a heuristic tendency to make decisions in cases of uncertainty (Brown & Reilly, 2012). This partly explains the rush to the NSE by many investors to sell their shares in the commercial banks once the interest rate capping law into effect.

Whenever the rate of interest is high, the commercial banks in Kenya make big profits. The high rate of lending interest rate has a provision for the loan's risks in the market and this interprets to high profit margins. However, when the interest rate is low, the commercial banks' profits drop because the high risks of default in the market are uncovered. Their share prices movement ought to correspond to the banks' lending rate

of interest. When the lending interest rate is high, the prices in the security market should be high and when the lending interest rate is low, the share prices ought to be drop and remain that way in the short run. Interest rate capping had a negative impact on the prices of commercial bank shares. It limits the determination of an equilibrium lending interest rate through the interaction of the forces of loan's demand and supply in the market.

1.1.4 The Nairobi Securities Market (NSE)

There are 11 banks listed in the NSE. The NSE was established in 1954. It was restricted to Europeans security traders until Kenya became independent and Asians and Africans were allowed to participate. The market has grown since then to a remarkable security market in East Africa. The Capital Market Authority of Kenya (CMA) governs the NSE. The interest rate capping law saw the banks lose close to Kshs 40 billion in value on the NSE due to the fall of their share prices. In 2015, the banking sector had a market value accounting to 47.96 per cent in the NSE. However, after the effect of the law on interest rates capping was passed, the banking sector market value dropped to 28.93 percent in 2016. It lost kshs 40 billion. For example, Kenya Commercial Bank (KCB) which is the biggest bank in the country based on assets lost the value of its share to the lowest level ever since 2012 (CMA, 2016). Other banks such as Equity Group Holdings Ltd and the Cooperative Bank Ltd also dropped in their share prices as well.

The law on interest rates capping led to an automatic reduction of the bank's revenues. It also exposed the banks to more risks such as default risk. As a matter of strategy on risk reduction, the banks introduced tight mechanism to reduce the default risk. Therefore, small and medium enterprises, which are highly likely to default on their loans, could no

longer receive funding from banks easily like before. The Kenya's commercial banks make relatively high revenues from interest rates income. The law on interest rate capping reduced the Kenya's commercial banks profit margin. Investors in the banking sector at the NSE expect that the banks will have reduced revenues in the short-run and as a result, the demand of the banks' share in the NSE reduced. Many investors sold their shares and thus the respective banks share's supply surpassed their demand at the NSE leading to a drop in the share prices. The reaction was in line with the EMH; shares are expected to adjust to fresh information in the market.

1.2 Research Problem

Interest rate capping refers to the limiting of the fluctuation of the rate of interest to a given interest rate cap (Olaka, 2017). The interest rate is one of the biggest factors that determine the uptake of loans by the banks' clients. It also determines the profitability of the commercial banks in Kenya. Therefore, any regulation on lending interest rates directly affects the commercial banks and their investors always react to it. Share price is the market value of a share at the stock market. Due to the fall in the central bank rate (CBR), the profitability of the listed commercial banks dropped and many investors were not willing to buy the banks shares. It is therefore worth to carry out an event study to find out what was the effect on the lending interest capping on the prices of banks' shares. The revenues of commercial banks were negatively affected by the interest rate capping laws (CMA, 2016). This is because interest income was reduced. Shareholders disposed their shares in large numbers anticipating poor returns from the banks or due to anxiety.

The high sale of shares in the stock market with low demand resulted in a fall of the listed commercial bank shares. The commercial banks' shares became unattractive and many investors opted to sell and watch the next strategy by the institutions to continue making huge profits. To avoid making losses out of loan defaulters, banks became cautious in giving out loans. The banks' share prices dropped immediately when the law came into effect. According to Mburu (2016), the 20 Share Index of the NSE dropped to 3,309.76 points representing a percentage of 4041 percent. Similarly, the All Share Index at the NSE dropped to 139.14 points by a percentage of 50.01. The current CBR in Kenya is 10%; initially when the bill was passed, it used to be 10.5%, but a move by the CBK to see the uptake of loans had it reduced; banks are expected to add to a maximum of 4% on top of this rate. This is because the bill capped the interest rates at 400 basis on top of the rate given by the CBK (CBK, 2017). Low CBR affects the banks' profitability negatively. They are unable to make corresponding charges to high-risk borrowers and they therefore opt them out.

Globally, it has been established that lending interest rate capping has a detrimental effect on the shares of listed commercial banks especially in developing markets. Most of the banks make most of their returns from interest income. Capping interest rate therefore reduces the institutions' ability to generate revenues. According to Miller (2013), the capping of interest rate is done for a number of reasons, which include economic and political reasons. Some of the economic reasons include reducing the cost of credit in a country to enhance the access of credit for small and medium enterprises. Government intervention in this manner comes in due to market failure.

The government may also use the interest rate capping to direct resources to a specific industry of choice such as the case of Zambians' SME and in Bangladesh where the government intended to promote the agricultural sector. Maimbo and Henriquez (2014) indicate that around 76 countries around the world are still using lending interest rate capping as a tool of controlling the economy. These countries include Zambia, Bolivia, El Salvado, Nicaragua, Japan, Ecuador, Spain, and several states in the United States. Region wise, Latin America, Asia, and Africa utilize the interest capping law to offer subsidy to critical economic sectors and for political interests. Since the onset of financial crisis in 2007/2009, several countries in Europe such as Germany and France as well as the US introduced some forms of interest rate caps to dissuade predatory lending practices (Ellison & Forster, 2008). In his research, Heng (2015) indicates that the introduction of interest rate cap and credit quotas in Bolivia was an effort to promote financial access. The new Financial Services Law (FSL) adopted by Bolivia ported a risk in the future to the access of credit by the small entrepreneurs in the country. Therefore, FSL may lead to instability in the financial sector. It is also a threat to financial inclusion where small borrowers with high risks have a lower access to credit. A study by Hancock (1985) indicated that changes in the rates of loan's lending interest rate have a greater effect that variation on the deposit interest rates in terms of profitability risk. This is because the difference between the two interest rate is the spread which determines a bank's interest income. The financial institutions cannot identify with accuracy a client's risk of loan default (Ellison & Forster, 2008; Heng, 2015).

In Kenya, few individuals and organizations have conducted several studies. A study by Mbua (2017) indicates that the interest capping law had a negative effect on the prices of

the shares of the listed commercial banks of Kenya at the Nairobi Security exchange. Musiu (2013) through his study on the Relationship between lending interest rates and the Financial Performance of Commercial Banks in Kenya established that regulating the interest lending rates have a negative effect on the financial performance of banks. This implies that banks have reduced profitability, which affects the performance of shares at the NSE due to loss of appeal to investors. Maigua and Mouni (2016) found out that high interest rate positively influences the financial performance of commercial banks in Kenya. Few studies have been carried out to establish how the bill has affected the prices of the listed commercial banks in the country. Due to the interest rate capping, the prices of the listed commercial banks in the Nairobi security market slumped immediately. Banks' investors at the security market were hit hard due to the drop of the commercial bank prices. The Nairobi security market capitalization makes up around 30% of the security market in entirety. Large institutions entrusted with public funds such as security trusts, insurance companies, pension funds, as well as foreign investors heavily invests in the banks' shares. Therefore, a large number of security market investors were negatively affected by the law on interest rate capping (Mbua, 2017).

The study sought to determine the impact of the Banking (Amendment) Act 2016 banks listed at the Nairobi security exchange. Does the law on interest rate capping have a positive or negative relationship with the prices of listed commercial banks at the NSE?

1.3 Research Objectives

To determine the effect of interest rate capping on commercial banks share returns at the NSE.

1.4 Value of the Study

The interest capping law has affected many stakeholders in the Kenyan economy. Therefore, the study will help all the affected stakeholders who include the Kenyan Government, investors, Banks, investment banks and stock broking firms. This is an event study, which focuses on the immediate effects of the Banking (Amendment) Act 2016 on the Kenyan economy. Therefore, the value of the study will be limited to that perspective. There are few studies that have been done on the effects of interest rate capping on the price of commercial bank shares listed in stock markets in Kenya and globally. The study will therefore provide theoretical knowledge on the subject matter to the scholars and policy developers.

The interest capping law affected the Kenyan economy in a negative way. Since the law came into effect, there has been shortage of funds among the small and medium sized enterprises. This is because the banks shy away from giving the enterprises funding due to high rate of risks of loan default. As a result, a number of these firms are struggling with finance while others have closed. Various major retail business such as supermarkets, which receive supplies from the small and medium enterprises, faced shortage of supplies because of cash flow problems. The Nakumatt supermarket and Tusky has closed some of their branches due shortage of cash flows. The study will therefore guide government policy makers in analyzing the effects of the interest rate capping on banks as well guide them while making alternative policies.

The study is of great value to investors. The bank investors will be able to find the direction that the banking industry is heading. Even though it focuses on the short-term

effects of the interest capping, it will guide investors in future in case of a similar occurrence. The investors will be able to make proper decision as to whether to increase or reduce their investment in the banking industry.

The banking industry was the greatest victim of the interest rate capping law. The study will indicate how the banks' share reacted to the law. This will inform the banks management on how to strategize to make them attractive to the investors. The study comprises of similar cases from other countries and this will provide additional information to stakeholders on how to handle similar cases and maximize the shareholders' value.

Investment banks and brokerage firms are the firms that advise and carry out investment on behalf of the investors. In the process, the firms have to carry out financial analysis. Using the study, the investment banks, and the brokerage firms will find valuable information to advise their clients. Such information will make them determine the best time to buy and sell their shares in the banking industry.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter contains a review of the past literature on interest capping and the shares of commercial banks listed in the securities market. It covers on theoretical reviews and empirical studies. It is an in-depth analysis of the manner in which interest capping laws in Kenya and other countries from all over the world have affected the economy and the prices of commercial banks listed in the various securities exchange worldwide. Deposit and lending interest rates have a great influence on the prices of shares. This is because the interest rate has a great impact on the profitability of a bank, which determines the attractiveness of bank's shares to the investors.

2.2 Theoretical Review

The section reviews theories which are the foundation of the research project. The theories are Efficient Market Hypothesis, Modern Portfolio Theory, Behavioral Finance Theory, and the Theory of Demand and Supply.

2.2.1 Efficient Market Hypothesis

The theory is created from the notion that investors are interested in returns from an investment and they do not like risks. A market price of a security investment is the true indicator of the actual value of an investment (Fama, 1998). Additionally, it assumes that share markets are efficient, investors are sophisticated and rational, all the investors have access to relevant information, and they make reasonable decisions. In an efficient financial market, all the shares prices incorporate all public and private available

information. EMH was coined partly by Professor Eugine Fama in the 1960s. It is divided into three sub-hypothesis which are Weak Form EMH, semi strong form EMH, and strong form EMH (Brown & Reilly, 2012). The weak form EMH indicates that the current prices of shares reflect every other information that is available to the public in the market. The semi strong form EMH argues that prices of shares are a reflection of public available information and the prices quickly adjust themselves to incorporate such information as it emerges. The strong form EMH stipulates that the stock markets are efficient. Therefore, the shares prices incorporate all publicly and privately available information. That being the case, no investors in the market can make above the average risk adjusted rate of returns. According to the theory, stock markets are always efficient and that the shares prices always incorporate every relevant information concerning the shares. Therefore, the trading of shares is based on fair prices. Therefore, investors in the stock market have no way of beating the market to make abnormal returns. The theory suggests that the only way for an investor to make high returns in the security market is by purchasing high-risk shares, which have high returns. However, in ordinary circumstances, investors beat the market through market timing and selection of shares using stock market experts. This contradicts the efficient market hypothesis.

In relation to my study, the commercial banks investors in Kenya were not supposed to make any abnormal returns after the passage of the interest rate capping law because the banks' share prices at the NSE reflected the information. In an efficient market, share prices predictably and quickly adjust to every information available in the market, which have an impact on the economic value of a company. However, after the passage of the law, the share prices fell and many investors rushed to the market to sell their shares in

commercial banks due to uncertainty and to avoid making losses. Banks were expected to make lower profits than before after the implementation of the law. According to Torecillas and Jareño (2013), the reaction of the prices of shares to information depends on several factors such as the size of the industry, economic state of a country, the assets in industry, the kind of news and so forth.

2.2.2 Modern Portfolio Theory

The theory by Harry Markowitz in 1952 argues that investors who are risk averse can come up with a return optimizing portfolio based on a given level of risk in the market. According to the theory, the higher the risk, the higher the rate of returns (Brown & Reilly, 2012). An investor who diversifies on his/her investment by creating an optimal portfolio maximizes possible expected returns from each share. The theory suggests that an investor should combine various shares to make an optimal portfolio which would be regarded as an efficient frontier of optimal portfolios. Investing in many shares reduces the levels of risks in a portfolio and increases returns.

The theory in application to the case of Kenyan Banks shares and the interest rate capping implies that the heightened activities at the NSE was a case of investors reposition portfolio to incorporate the new changes in banking industry. The banks' shares became less rewarding and risky due to a high level of uncertainty in the banking industry and the low revenues expected.

2.2.3 Behavioral Finance Theory

The theory stipulates that investors like any other ordinary person have biases caused by emotions and cognitions. As a result, investors tend to act in unreasonable way. The theory contradicts the traditional finance theory, which postulates that investors are rational being. It is therefore worthy to take consideration of investors' emotions while carrying out investment analysis. Barberis & Thaler (2003) indicated in their research that the decision making process of an investor is highly influenced by a combination of human beings' emotional and cognitive errors. Various researchers have concurred with the study such as Lintner (1998) who termed behavioral finance as a psychological study, which focus on the way that people make decisions, and the errors, which occurs in the process of making interpretation and action on available information. According to behavioral finance, investors use heuristics behavior in making their investment decision. They are also prone to emotions and herd instincts, which predisposes them to make errors in the process of investment.

In relation to the reaction of investors at the NSE after the implementation of the interest capping law, many investors rushed to the market to trade banks' shares basing their decision on heuristic, emotions, and herd instincts. According to theory, it is expected that many investors quickly rush to sell their shares without second thought because many investors are selling their shares. Instead, each investor should have rationally made his or her decision to buy or sell the share. The key cognitive errors and heuristic driven biases that lead investors to irrational decision making are overconfidence, innumeracy, anchoring, representativeness, and aversion to ambiguity. A number of investors could therefore have overreacted to the interest rate capping law. According to

Barberis & Shleifer (2003), Daniel & Titman (2000), as well as Kamanja (2012), the EMH theory could have been violated by the cognitive errors and heuristic driven biases. Therefore, investment models that are based on rationality such as CAPM are not appropriate in evaluating returns to investment and associated risks.

2.2.4 The Theory of Demand and Supply

The theory of demand and supply is an economic model, which stipulates that the forces of demand and supply interact to the extent where an equilibrium price and quantity of a commodity is attained in the market at a given period. At the point of equilibrium, the quantity demanded and the quantity supplied will be the same resulting in an economic equilibrium for the period. The interaction of demand supply is best presented in a graph. The process is credited to Alfred Marshall. The law on demand and supply is attributed to various people such as John Locke a 17^{th} century philosopher, sir James Steuart a political economist, Adam Smith who is regarded as the father of Economics, and Alfred Marshall (Marshall, 2009; Rothschild, 1994; Steaurt, 1767; Locke, 1988).

The theory of demand and supply applies in determining the equilibrium price and supply of shares in the NSE. For every share sold, there must be a buyer. The sale and buying of shares at the stock market determines the price. In regards to the banks' shares during the period when the interest rate capping law was implemented, there was an oversupply of shares in the market which surpassed their demand resulting in a fall of the share prices for most of the banks.

2.3 Factors Affecting the Returns of Shares

The share returns are determined and influenced by various factors, which includes government policies such as the law on interest rate capping, monetary policies, and fiscal policies. Others are inflation, investors' sentiments, international economic factors, and political factors. The general performance of an economy is a great influence of the share prices. The government is the chief determiner of an economic climate in a country. Simply, a given monetary or fiscal policy has an influence on the various agencies in the economy, which in turn affects the state of an economy such as the level of money supply.

2.3.1 The Law on Interest Rate Capping

The government comes up with different rules and regulation depending on its objective. Interest rate capping law, which was brought about by the Kenyan parliament in 2016 to reduce the cost of credit in the country, has a tremendous effect on the prices of banks' share at the NSE. This was the third attempt by the government to cap lending interest rates. Most of the Kenyan banks make the largest share of their revenues from the interest income (CMA, 2016). Therefore, the recent laws on interest rate capping have a negative effect on the profitability of the banks. This in turn made the banks unattractive to the investors. According to the Kenyan Bankers Association report, the legislative disruption of the banking industry in Kenya was uncalled for and it is only a short tem way for fixing the cost of loan acquisition in the country (Olaka, 2017). The regulation on interest rate did not address the relevant factors that led to the rise of the cost of credit in Kenya.

The interest rate capping law made the banks' shares unattractive and many investors sold off their shares, which led to a reduction of the banks' share prices at the NSE.

2.3.2 Inflation

Inflation has a negative effect on the aggregate expenditure of consumers. It reduces consumers' purchasing power (del Camino & Jareño, 2013). The cost of commodities rises and therefore, the consumers have little disposable income, which can be invested or saved. As a result, the level of investment in the security market reduces and savings in commercial banks declines (Maigua & Mouni, 2016). High inflations rate depletes consumers' disposal income, they therefore resort to their savings and investments. In case that they are more investors willing to sell their shares than buy, the prices of the shares fall at the share market. As Kamanja (2012) indicates, institutions cannot do proper planning during a period of inflation. The central bank is also forced to adjust the base rate in order to accommodate the high levels of inflation. Such a move makes the cost of credit expensive and the level of investment in a country reduces.

2.3.3 Investors Sentiments

Investors' sentiment plays a great role in determination of share prices. Investors are known to be swayed by their emotions and cognitions according to the Behavioral finance theory (Kawira, 2014). This makes them prone to cognitive errors and heuristic driven biases. A given turn out of event in a country can make investors rush to the share market to buy or sell their shares. This influences the share prices respectively as it was the case in Kenya some few years back; during Initial Public Offer (IPOs), many Kenyan investors would rush to the share market to buy underpriced shares for speculation

purposes only, they would then sell them shortly after the company is listed at the share market (Swanya, 2014).

2.3.4 International Economic Factors

A number of investors at the NSE are foreigners. Therefore, when the international economic climate is adverse for example during the 2007/09 economic recession in the United States (U.S), the level of investment at the NSE fell and the share prices started to drop. However, the effect was not far much stretched due to the small integration of the Sub Saharan Africa to the European countries and the United States (Retirement Benefits Authority, 2010). However, major capital markets in the world were adversely affected and the share markets declined substantially. The Kenyan capital market was affected due to the reduction of financial flows and investment in the share market by foreign investors. For example, according to the Retirement Benefits Authority (2010), the balance of payments declined by 7% of the Kenya's GDP. This was a result of huge financial flows from the Kenya's market as investors retrieved their investments to salvage the economic hardship in their countries of origin more so in the US which was largely affected. An analysis by Retirement Benefits Authority indicates a high correlation of the Nairobi Security Exchange with the New York Stock Exchange in between 2007 and 2009 (Mwangangi, 2013).

2.3.5 Political Factors

In Kenya and many other countries in Africa, the electoral process is usually marred with violence. This has a negative effect on the prices of shares in the stock market. For example, during the 2007/2008 post-election violence in Kenya. Most of the companies listed at the Nairobi Security Exchange performed poorly during that economic period (Mwangangi, 2013). As a result, most of the shares are not attractive to investors during the period as there was a state of uncertainty. Many of the investors opt to wait for the electoral process to be over in order to resume trading. The recent law on interest capping was partly done with a political motive. Therefore, political factors play a big role at influencing the prices of shares.

2.4 Empirical Literature Review

Numerous studies have been carried on the effects of the interest rate capping on commercial banks around the world. However, many researchers have not explored the topic. Mbua (2017) carried out an observational survey for her study on the effect of the Banking (Amendment) Act 2016 on the prices of the commercial banks listed at the NSE indicated that the law adversely affected the return on banks' shares. The study showed that the relationship between lending interest rate and stock prices is negative. It is therefore essential to find out how the bank stock prices reacted to the law on interest rate upon implementation. The data was collected by the use of a checklist and later a correlation between the prices of stocks and lending interest rate established. Prior to the passage of the law, there had been a positive relationship between the share prices and the lending rate however, after the law on interest capping was passed, the share prices of the

commercial banks listed the NSE declined. The interest rate capping affected the banks' cash flow in a negative way due to a decline of revenues. Few studies have been carried since the interest law came into effect on August 2016, hence the need to carry it out.

Maigua and Mouni (2016) carried out a descriptive research study. The research used 26 commercial banks as samples and analyzed using a multiple regression analysis. The study found out that high interest rate positively influences the financial performance of the commercial banks in Kenya. However, the study failed to cover on the effects of interest rate on the stocks of commercial banks hence the need to carry out the study.

In a quantitative research, Mwirotsi (2012) collected data from audited financial reports in between 2002 and 2011 for commercial banks sampled. They sample comprised of 14 medium sized banks, 6 large banks, and 23 small banks. He found out that high rate of lending interests by the Kenyan banks lead to a high level of nonperforming loans but during this period, the banks made huge returns in form of interest income. Therefore, a reduction of lending interest rate through the intervention of the government may turn out to be unfavorable to the banks' performance. Kenya's banks used to make a lot of revenues from interest income. As a result, the small and medium banks' share lost attractiveness to investors due to poor returns after the interest rate capping. The decreased demand leads to decline of their shares' price in the short time. However, banks in the first tire category such as the Barclays Bank of Kenya, Diamond Trust Bank, and the Cooperative Bank remain attractive to investors as they continued to make increase profits despite the interest rate capping. The research did not indicate the influence of the interest lending rates on the prices of stock of commercial banks.

Odhiambo (2013) carried out a study using a using a descriptive approach. The study involved analyzing the data for a five years period since 2002 to 2008 using a descriptive approach to determine the variables' weight. He found out that high levels of lending interest rates do not affect the loan uptake of small and medium enterprises. However, the high interest rate increases the SMEs interest expenses thus reducing their revenues for expansion resulting in low economic growth in Kenya. The research did not indicate how the lending interest rates affects the prices of stock of commercial banks listed at the NSE.

Musiu (2013) argued that high lending interest rates results to high cost of loan to the borrowers. The study by Musiu used bank supervision report's data for 11 selected banks' samples. This is because the cost of credit from commercial banks becomes expensive. Such observations from research made it necessary for the government to cap interest rates. However, high interest rates translate to high interest income to commercial banks and this makes them attractive to investors. It was expected that by capping interest rates, the cost of credit in Kenya would be lower and thus small and medium enterprises would access credit cheaply, grow, and propel the growth of Kenya's economy to higher level. On the contrary, this has not been the case, after the interest rate capping law was passed; the availability of credit in the country has become scarce. Banks started closing down branches, retrenching workers as a result of reduced operations and improvement of technology. These are some of the ways that banks are strategizing to deal with the anticipated reduced revenues from interest. The interest rate cap law reduces the profit margin of the commercial banks or the spread. High interest rates enhance a positive spread while low interest rates lead to a small spread and hence low incomes to the

commercial banks. This in turn results in poor share prices due to the low profits. Initially, the bank shares were very popular with investors due to the high levels of profit in the industry. The study only covered the effects of high lending rates on SMEs and did not focus on how the same affected banks performance in the stock market.

Miller (2013) and Mohane, Gerhard and William (2002) observes that interest rate capping has adverse effect on the banking industry. It creates a market imperfection whereby there is information asymmetry. As a result, financial institutions cannot be able to distribute risk between the various classes of clients due to the interest rate capping. All clients are subjected to the same of interest rate no matter their levels of risk. The study did not indicate the implication of the lending interest rate capping on the stock prices of banks, therefore calling for the need to do it. Miller (2013) carried out a study on the impact of interest rate cap on financial inclusion in Zambia.

Olaka (2017) indicates that the implementation of the interest rate capping bill in Latin America's countries resulted in increased illegal lending activities in Ecuador, low of access of credit by the poor in Mexico, Colombia, and Chile. The study by Olaka did not indicate the implication of the lending interest rate capping on the stock prices of banks, therefore calling for the need to do it. In Africa, Mauritania financial system became one of the weakest in Africa after the implementation of the law, Zambia had differentiated caps depending on sectors however, and the model did not succeed. Ethiopian banking sector is highly controlled by the government even after removing all interest rate ceilings in the banking sector except for micro-finance institutions.

According to Miller (2013), interest rate cap in South Africa increased the challenge of adverse selection. The law has a potential to reduce the rate of profit margin annual by close to 13.6%. CMA (2016) report in Kenya indicates that banks were hit hard by the interest rate capping law. In 2015, the market value of the banking sector was equivalent to 47.96% however by December 2016, this declined to 28.9% of the entire cap in the market. The listed commercial banks' shares became unattractive to the investors. For example, in the fourth quarter of 2016, the Capital Market Authority of Kenya recorded a lower turnover ratio than I the previous year. The ratio had reduced by 47% in comparison to the third quarter of 2016. This is because demand for listed companies particularly commercial banks share fell steadily and resulted in low share prices as well. The listed financial institution in Kenya makes a big percentage of the market capitalization and turnover. Foreign investors are a huge determiner of prices in the Kenyan security market. They reduced their demand for shares after the interest rate capping. The SMEs in the country also have a hard time accessing credit from banks. The study did not indicate the implication of the lending interest rate capping on the stock prices of banks, therefore calling for the need to do it.

As Ellison and Forster (2008) indicated, a very low interest rate ceiling has a disparaging effect on the profitability of banks. The institutions can only undertake their operational duties in limited capacity. This limits the capacity of a bank in form of expansion and development. Their customer base is reduced as well and this increases competition among the banking institutions for the few customers. The reduced profitability of banks due to the interest rate cap is a turn off to investors. Ellison & Forster (2008) indicates that interest rate capping law have adverse effects to the Australian economy. However, it

is usually expected to be beneficial to the SMEs in the short run. The interest rate cap law blocks the financial institutions from objectively allocating loan products according to the various factors in the market. The people at the lower end of the economy are largely affected due to lack of access to credit. The study did not indicate the implication of the lending interest rate capping on the stock prices of banks, therefore calling for the need to do it.

2.5 Summary of the Literature Review

Most of the past studies on the topic indicate that a law in interest rate cap has a negative effect to the performance of financial institutions especially listed banks in the share market to be specific. This in turn affects the price of the banks' shares listed in the stock market because investors desire companies that are profitable in nature. However, few studies have focused on the effect of the lending interest rate capping on the prices of commercial banks listed in the stock market thus creating a knowledge gap. In Kenya, foreign investors who make up some of the biggest investors in the market avoided the banking industry. This translated to a reduced demand and the price of the banks' shares dropped immediately when the Banking (Amendment) Act 2016 was passed and implemented. Studies on other stock markets worldwide indicate that the introduction of the lending interest rate ceiling reduces the performance of the financial industry. It is only in few countries such as Japan and Korea that the law has been regarded as successful but not without a big price of nonperforming loans. Therefore, interest rate capping to address the problems that leads to a market failure.

2.6 Conceptual Model

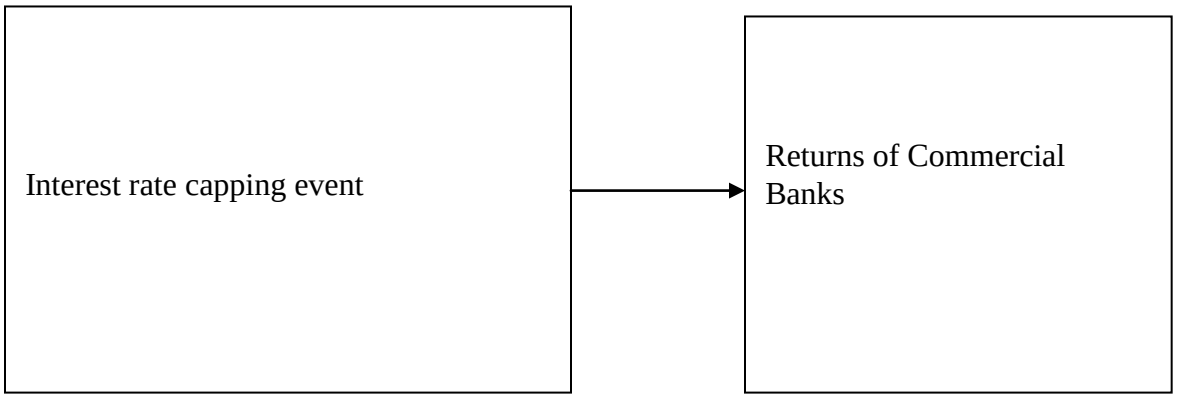
In this study, the interest rate capping is the independent variable whereas, the returns of commercial banks shares listed at the NSE is the dependent variable. There are 11 banks listed at the NSE and they are all included in the study.

Interest rate capping resulted to a fall in banks' revenue resulting in a fall of the price of the commercial banks shares. This implies that the relationship between the lending interest rate capping event and the share prices of commercial banks listed at the NSE is negative or inverse.

On the figure 1 below, the arrow is a component that indicates the cause effect relationship between the two variables in the study. An upward facing arrow depicts the capping of the interest rate while the downward facing arrow depicts the share returns to demonstrate the inverse relationship between them. The capping of interest rate is a government policy which affected the returns of commercial banks listed at the NSE.

Components	Meaning
Arrow	The cause effect relationship
Interest rate capping event	Independent
Returns of Commercial Bank	Dependent variable

Figure 2.1: Conceptual Framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlines the research methodology to be used in the study. It covers the procedure research design to be used in data analysis and collection as well as ways of sampling the targeted population.

3.2 Research Design

They are a range of research design, which includes explanatory studies, descriptive studies, and exploratory studies. Out of the three, the best research design befitting this study is descriptive study. As Robson (200) indicated, a descriptive research design accurately indicates events and the profiles of individuals in a study. The design will be able to indicate the effect or the relationship between interest rate capping and the returns of the commercial banks' stock listed at the NSE.

3.3 Population

The population of the study will be the 11 banks listed at the NSE. Since the number is small, there will be no samples, and all the banks will be included in the study.

3.4 Data Collection

Data collection is a crucial stage in research because it has a direct bearing on the validity of the end results of a study. Secondary data will be collected for a period of 91 days. The period comprises of an estimation period of 30 days immediately before the event period, and 30 days during the event whereby 30 days before and 30 days after the Banking

(Amendment) Act 2016 was signed on the 24th of August 2016. The data is easily available from the NSE and the Central Bank of Kenya. It will be comprised of three sections. Namely; the price of the shares, the current and past interest rates from the CBK, and the dividends issued during the period.

Data from the NSE and CBK is accurate due to the fact the two bodies are mandated by the laws of Kenya to regulate the stock market and the banking industry respectively. The lending interest rate will be retrieved from the CBK commercial banks weighted average rates, which is a secondary source for the period of July, August, and September 2016.

The Central Bank Rate (CBR) is provided by the Central Bank of Kenya on periodical basis depending on the economic condition in the country. It is therefore fixed and dependent on the Central Bank of Kenya. The respective dividends and prices of the commercial banks' shares will be retrieved from the NSE database for the period of July, August, and September 2016.

The data is time series data, and therefore quantitative analysis is the best method of design to analyze it. Both variables have the characteristics of financial data. The price of commercial bank shares and the lending interest rate will be collected over a period, the log financial returns are distributed normally, but the prices are not, prices and returns are not stationery, prices and returns are persistent in nature and therefore predictable. Following these characteristics, it is easy to carry out an event study to analyze the effect of the lending interest rate capping on the share returns of commercial banks listed at the Nairobi Securities Exchange.

3.5 Data Analysis

The data collected from the NSE and the CBK was in MS Excel format and the event study methodology was used in the research. Using SPSS.22.0 and the Microsoft Excel, the data was cleaned just in case of missing values and data entry errors. Afterwards, the data was analyzed using the same statistical packages.

3.5.1 Event Study Methodology

Event study methodology is derived from Fama et al. (1969) according to Campbell, Lo, & MacKinlay (1997) and I used it to estimate abnormal returns. An event study methodology is a technique in statistics used to evaluate the impact of an event on a firm's value. Using the method, the returns of the banks was examined before and after the signing of the Banking (Amendment) Act 2016 into law on 24th August 2016 and look out for abnormal returns.

3.5.2 Diagnostic Tests

The study focused on the preliminary statistics test of data, co-integration, normality, and inter-correlation. It is therefore free from statistical bias. Other primary assumptions that were tested included normality, independence of the error term, and linearity to measure the t- test.

3.5.3 Analytical Model

The daily returns and the expected returns of the banks were used to compute abnormal returns. The significance of the returns was evaluated using T-statistics. The market

model was used to determine the expected returns and test if the banks generated abnormal return or not by using the below steps.

$$Rjt = \frac{(Pi-Po+D1)}{Po}$$

Where

R_{jt} is the daily share returns

P_i is the opening price of the bank's share

P_0 is the closing price of the bank's share

D_1 is the dividend paid in the period

The market model was used to determine abnormal returns

Abnormal Returns $ARjt = R_{jt} - E(R_{jt})$----------(i)

Where

AR_{it} = the abnormal return for the bank j in period t

R_{it} = actual returns for the bank j in period t

$E(Ri_{it})$ = the mean return for the bank j in period t

The expected (mean) return for the bank shares j in equation (i) is

$E(R_{jt}) = \alpha_i + \beta_j R_{mt}$----------(ii)

where

$E(R_{jt})$ = the expected (mean) return for bank j time t

α_i = an intercept

β_j = a constant in regression

R_{mt} = the market returns in the period t

To calculate the return for a market portfolio, the NSE 20 index was used as a proxy for market portfolio, by calculating daily returns as below.

$$MRi = \frac{Mi - Mo}{Mo}$$

MRi the market return for the day *i*

Mi Market Return for day *i*

Mo Market Return for day *o*

Calculate the abnormal Return for every day under study for every company.

Abnormal Return is the actual return less Expected Return. This was done using Market Model.

$$Rjt = aj + bjRmt + \sum \mu$$

Where

R*j is* the Return on Stock *j* on day *t*

Aj and *bj* are the intercepts and the slope of the linear relationship between the returns of stock j and Returns of the overall market.

Rm is the return on the market index on the day t.

$\sum \mu$ is the unsystematic component of company's returns.

The efficient diversification reduces the total risk of a portfolio to the point where systematic risk is left hence reducing the equation to below

The average abnormal return equals to

$$AAR_t = \frac{1}{n}\sum_{j=1}^{n} AR_{jt} \quad \text{---------- (iii)}$$

Where

AAR_t = Average abnormal return in period t

AR_{jt} = bank abnormal return for period t

n = the size of the sample

Cumulative abnormal return CAR was estimated by adding the average abnormal return (Avg + AR from every day from 30 days before and 30 days after.

Cumulative abnormal return CAR was estimated by adding the average abnormal return (Avg + AR for 30 days before and 30 days after the event.

The computation of CAAR will follow (Panagiotis and Spyridon, 2011) approach and (Dancan and Linnet, 2017) approach.

Test for significance of the daily AAR during the window period is to be carried out using the

t-statistics for every $AAR_{t\ as}$ follows:

$$t_{AR} = \frac{AARt}{\sigma AR/\sqrt{n}} \quad \text{---------- (iv)}$$

where

n = the size of the sample (population)

t_{AR} = the t-statistics

AAR_t = the average abnormal return for the period t

σAR = the standard deviation of the abnormal returns at period t

So that I can confirm with certainty the size of the abnormal returns during the event window, I determined each bank's cumulative average abnormal returns (CAARs) and the cumulative abnormal returns (CARs) using the following formula

$CAR_t = CAR_{t-1} + AR_t$ ----------(v)

Given that

CAR_t = the cumulative abnormal return during period t

AR_t = the abnormal return during period t

CAR_{t-1} = the cumulative abnormal return during period t-1

$CAAR_t = CAAR_{t-1} + AAR_t$ ---------- (vi)

Given that

$CAAR_t$ = the cumulative average abnormal return during period t

AAR_t = the average abnormal return during period t

$CAAR_{t-1}$ = the cumulative average abnormal return during period t-1

The following t-statistic was used to ascertain the significance of the total cumulative abnormal returns

$$t_{CAR} = \frac{CAARt}{\sigma CAR/\sqrt{n}}$$ ----------(vii)

Given that

t_{CAR} = the CARt-statistics

$CAAR_t$ = the cumulative average abnormal return during period t

N = the size of the sample

σCAR = the abnormal returns cross-sectional standard deviation for the samples of n banks during period t

3.5.4 Reliability Test of the Result

This study showed the relationship between the Stock Return of firms before the singing of the bill into law by using of T-Test statistics, t test on the event window for all stock was computed to determine the abnormal returns.

$$t_{CAR} = \frac{CAARt}{\sigma CAR/\sqrt{n}} \text{ ----------(vii)}$$

Given that

t_{CAR} = the CARt-statistics

$CAAR_t$ = the cumulative average abnormal return during period t

$CAAR=1/n \sum_{i=1}^{n} CAR(t1, t2)$

N = the size of the sample

σCAR = the abnormal returns cross-sectional standard deviation for the samples of n banks during period t

μ being tested for significance is the Abnormal Return which takes zero value.

The study analyzed if the signing of the Banking (Amendment) Act 2016 significantly affected the share returns hence if the effect is significant the t statistics is significantly different from 0.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter comprises of data analysis collected from the NSE and CBK for the 91 days of study starting 30th May to 6th October 2016. Daily prices and dividends of the listed commercial banks, and NSE 20 share index were used in computing bank's return. However, there was no dividends that were issued during the period. NSE does not open on weekends and during the public holidays, and therefore, there is no data for the days. The analysis was done using Microsoft Excel 2016 and the SPSS.22.0. Graphs and tables have been used to depict the findings. For the market index, the NSE 20 share index was used. Using the Event study methodology, abnormal returns to the banks were calculated for the days during which the Banking (Amendment) Act 2016 was signed. The method is vital to determine whether the listed banks' investors at the NSE made abnormal returns before and after the event day on 24th August 2016.

4.2 Descriptive Statistics

The descriptive statistics shows the basic features of the banks' data. It comprises of the mean and the standard deviation from the abnormal return mean of each bank. NBK has a mean of -.002889 and the highest standard deviation from its abnormal return mean of .0319531. That standard deviation is followed by that of I & M Bank, Housing Finance Bank, NIC bank, Equity Bank, Co-operative Bank, KCB, standard Chartered Bank,

Barclays Bank, Diamond Trust Bank, Stanbic Bank and lastly NSE at .0091409. This indicates that the banks' abnormal returns have a small difference from each other.

Table 4.1 Descriptive statistics

Descriptive Statistics

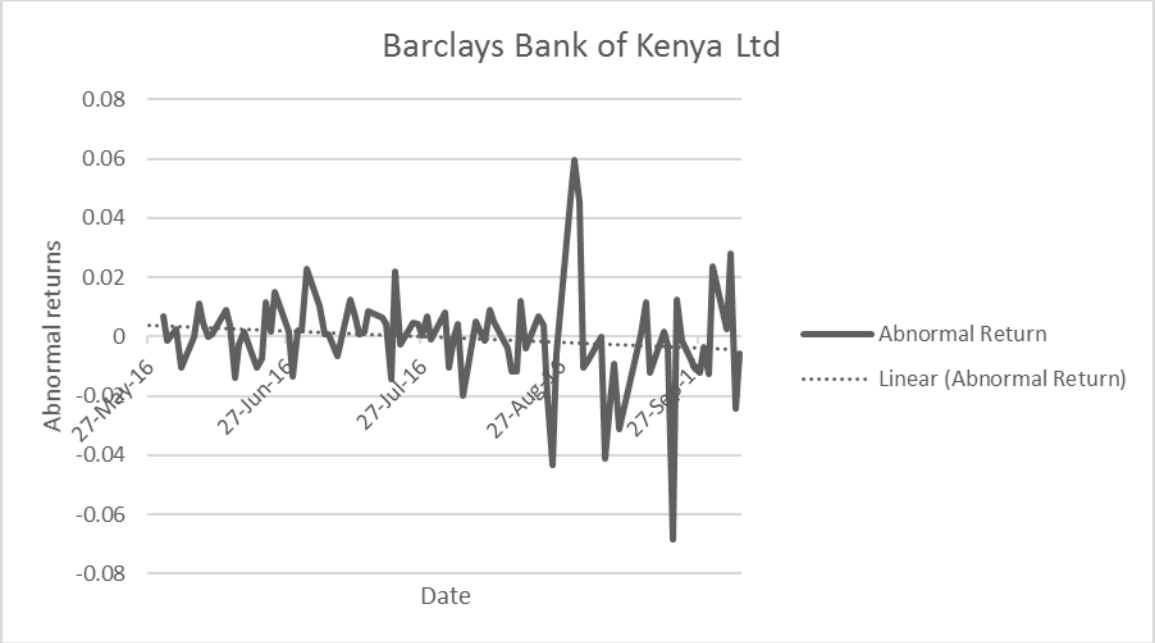
	N	Minimum	Maximum	Mean	Std. Deviation
Stanbic	61	-.0392	.0485	.000990	.0174418
KCB	61	-.0719	.0683	.000042	.0230669
Std	61	-.0627	.0644	-.000283	.0202332
I and m	61	-.0861	.0908	-.000384	.0303778
NSE	84	-.0442	.0199	-.000908	.0091409
Diamond	61	-.0641	.0570	-.001101	.0181162
Baclays	61	-.0682	.0596	-.001351	.0196161
Housing	61	-.0689	.0844	-.001888	.0276543
Coop	61	-.0683	.0801	-.002015	.0230812
Equity	61	-.0711	.0585	-.002414	.0233095
NIC	61	-.0662	.0751	-.002738	.0250340
NBK	61	-.0823	.0813	-.002889	.0319531
Valid N (listwise)	61				

4.3 Graphical presentation of Abnormal Stock Returns

The graphs below depict the abnormal returns realized from each of the 11 banks listed at the NSE.

4.3.1 Barclays Bank of Kenya Ltd

Figure 4.1: Daily abnormal returns before and after 24th August 2016



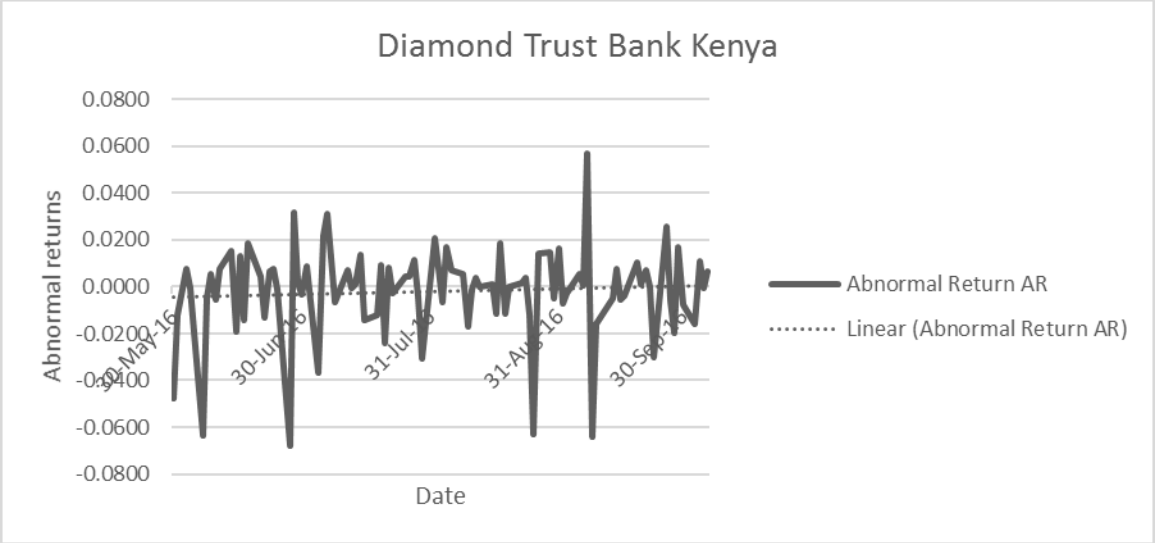
Source: Research findings (2017)

Figure 4.1 indicates the abnormal returns realized before and after the signing of the Banking (Amendment) Act 2016 into law. According to the findings, abnormal returns equivalent to -0.0210 were realized on 24th August 2016. Prior to the day, on 23rd August 2016, bank investors' made abnormal return of 0.0039 which was positive. The abnormal returns immediately reduced to -0.0435 on 25th after the bill was signed into law by the president. The volatility of the Barclays bank of Kenya stocks heightened immediately after the president signed the bill. After that, the abnormal returns increased for five days and were highest on 30th August at 0.05962 points which was a positive

gain. As the graph's trend line indicates, the bank's abnormal returns had been decreasing during the window period of study.

4.3.2 Diamond Trust Bank Kenya Ltd

Figure 4.2: Daily abnormal returns before and after 24th August 2016



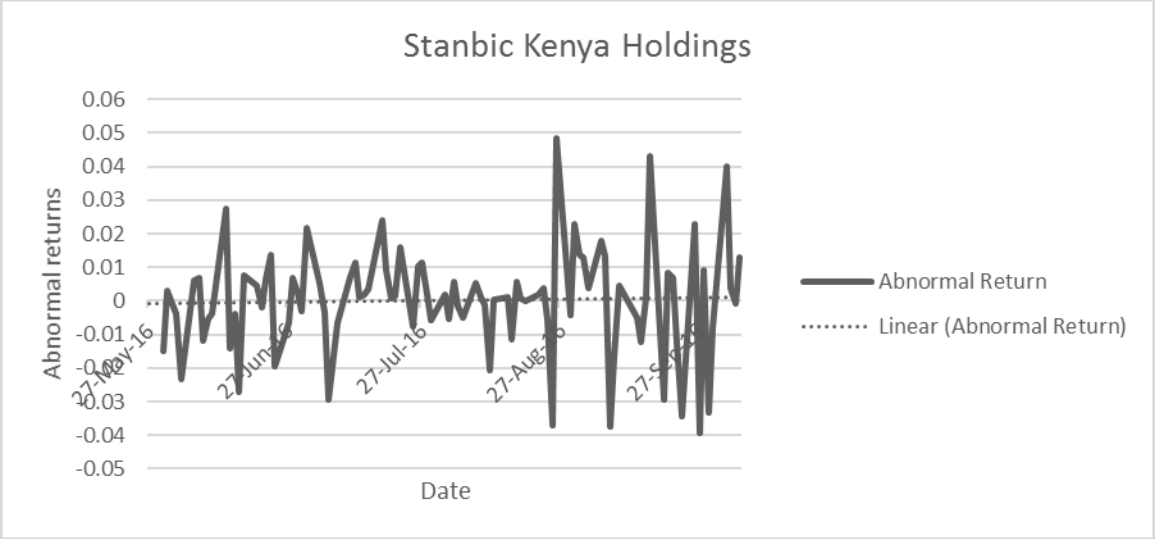
Source: Research findings (2017)

According to Figure 4.2, there had been a steady increase in abnormal returns from -0.0113 on 18th August to 0.0039 on 23rd August. The abnormal returns drastically reduced to -0.0120 the following day on 24th, and further to -0.0628 on 25th after the president had signed the bill on 24th August 2016. From 25th to 29th August 2016, the abnormal returns had been increasing to a peak of 0.0166 on 31st August 2016. The volatility of the Diamond Trust Bank Kenya Ltd's stocks heightened immediately before and after the president signed the bill. The abnormal returns increased and reduced before and after the signing of the bill. The abnormal returns volatility normalized after 31st

August 2016. As the graph's trend line indicates, the bank's abnormal returns had been increasing during the window period of study.

4.3.3 Stanbic Kenya Holdings Ltd

Figure 4.3: Daily abnormal returns before and after 24th August 2016

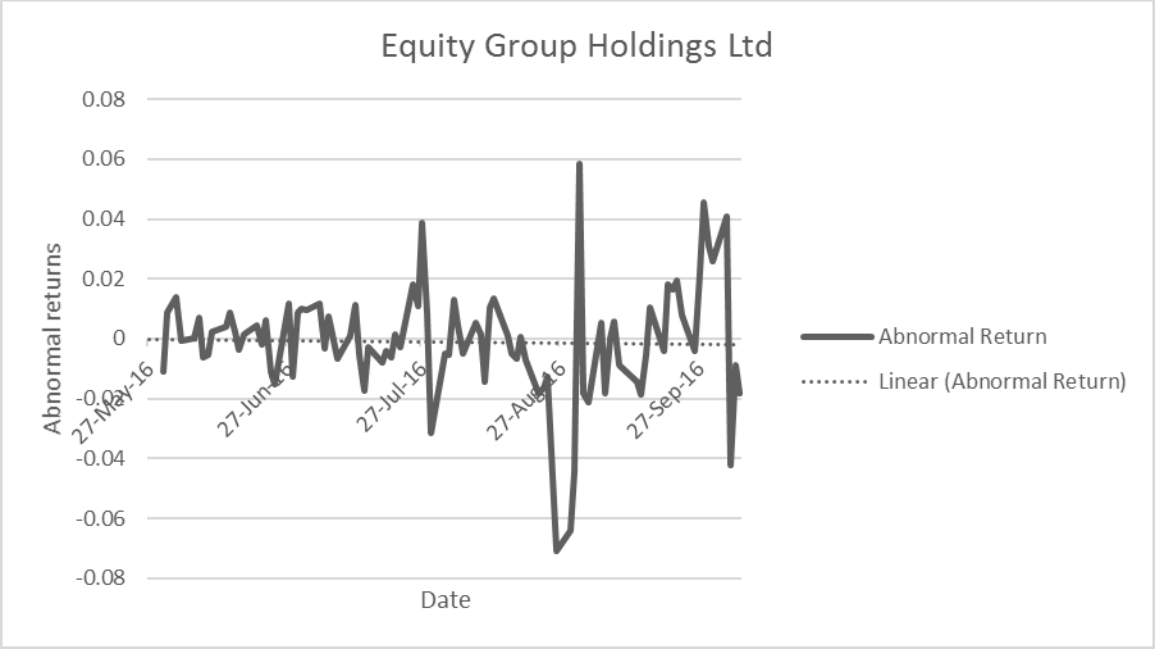


Source: Research findings (2017)

According to Figure 4.3, there had been a gradual decrease in abnormal returns from 0.0059 on 17th August to -0.0058 on 24th August. The abnormal returns drastically decreased to -0.0371 on 25th August after the president had signed the bill on 24th August 2016. The abnormal returns then steadily increased to 0.0485 on 26th August 2016. The volatility of the Stanbic Kenya Holdings Ltd's stocks heightened immediately before and after the president signed the bill. This continued for the next 30 days. The abnormal returns steadily decreased and increased prior and after the signing of the bill respectively. As the graph's trend line indicates, the bank's abnormal returns had been increasing during the window period of study.

4.3.4 Equity Group Holdings Ltd

Figure 4.4: Daily abnormal returns before and after 24th August 2016



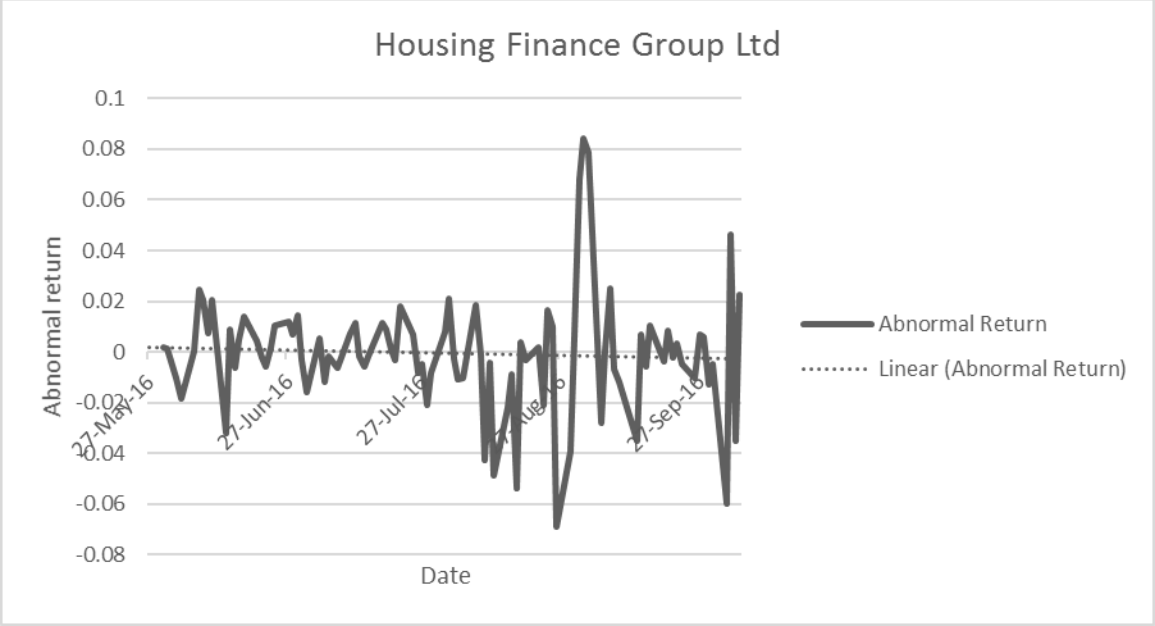
Source: Research findings (2017)

According to Figure 4.4, there had been a steady decrease in abnormal returns from 0.0134 on 12th August to -0.0711 on 26th August. How there was a slight volatility on 22nd and 23rd whereby the abnormal returns increased on 22nd from -0.0180 to -0.0164 on 23rd before declining to -0.0127 on 24th August. Then, the abnormal returns drastically increased to 0.0585 on 31st August after the president had signed the bill on 24th August 2016. The volatility of the Equity Group Holdings Ltd's stocks heightened immediately before and after the president signed the bill. The abnormal returns steadily decreased and increased prior and after the signing of the bill respectively. The abnormal

returns volatility normalized after 31st August 2016. As the graph's trend line indicates, the bank's abnormal returns had been decreasing during the window period of study.

4.3.5 Housing Finance Group Ltd

Figure 4.5: Daily abnormal returns before and after 24th August 2016



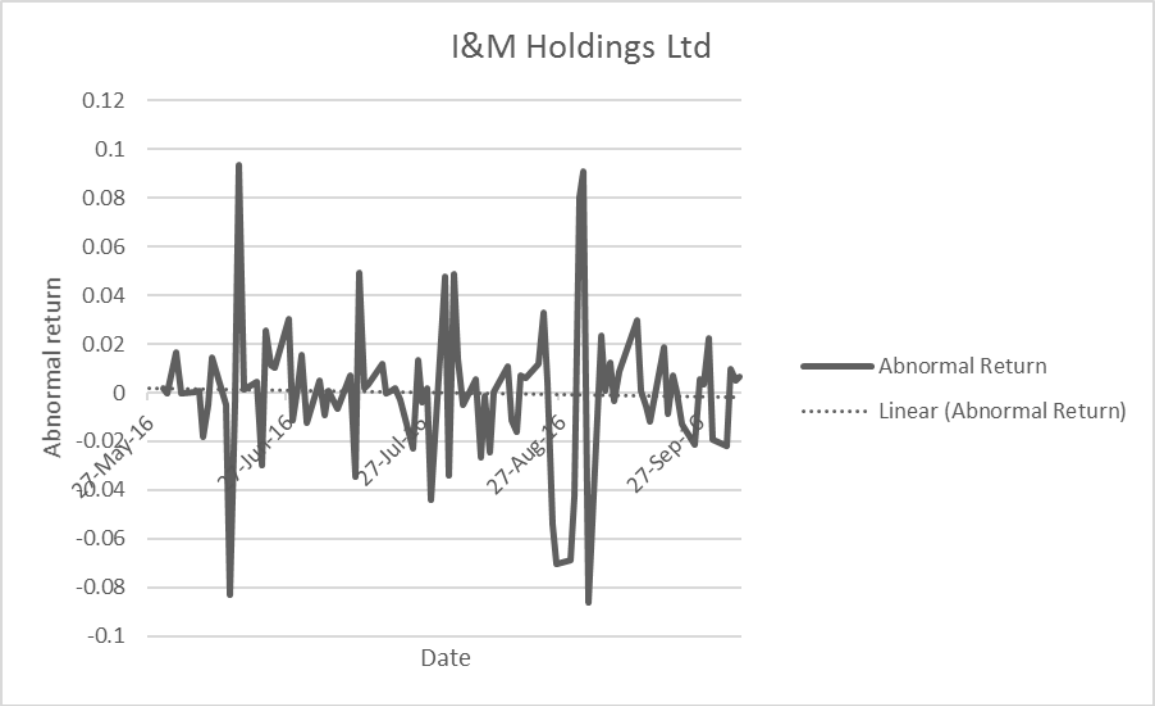
Source: Research findings (2017)

According to Figure 4.5, there had been a drastic increase in abnormal returns from 0.0018 on 22nd August to 0.0166 on 24th August when the bill was signed into law. The abnormal returns drastically dropped to -0.0689 on 26th August after the president had signed the bill on 24th August 2016. From 26th to 1st September 2016, the abnormal returns steadily increased to 0.0844. The volatility of the Housing Finance Group Ltd's stocks heightened immediately before and after the president signed the bill. The abnormal returns steadily decreased and increased prior and after the signing of the bill respectively. The abnormal returns volatility normalized after 1st September 2016. As the

graph's trend line indicates, the bank's abnormal returns had been decreasing during the window period of study.

4.3.6 I&M Holdings Ltd

Figure 4.6: Daily abnormal returns before and after 24th August 2016



Source: Research findings (2017)

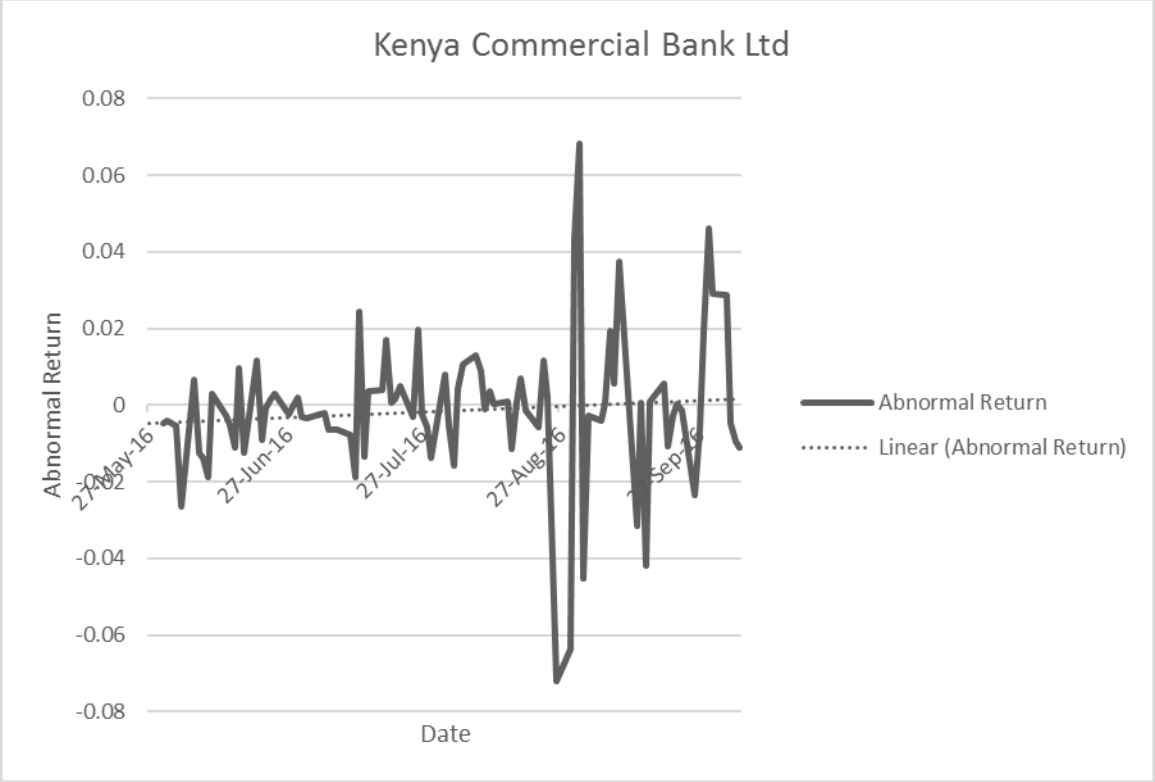
According to Figure 4.6, there had been a steady increase in abnormal returns from -0.0164 on 17th August to 0.0330 on 23rd August 2016.

Thereafter, the abnormal returns drastically decreased, lowest on 29th August at -0.0688. From 29th to 1st September 2016, the abnormal returns steadily increased to 0.0908. The volatility of the I&M Holdings Ltd's stocks heightened immediately before and after the president signed the bill. The abnormal returns steadily decreased and increased prior and after the signing of the bill into law. The abnormal returns volatility normalized after 1st

September 2016. As the graph's trend line indicates, the bank's abnormal returns had been decreasing during the window period of study.

4.3.7 Kenya Commercial Bank Ltd

Figure 4.7: Daily abnormal returns before and after 24th August 2016



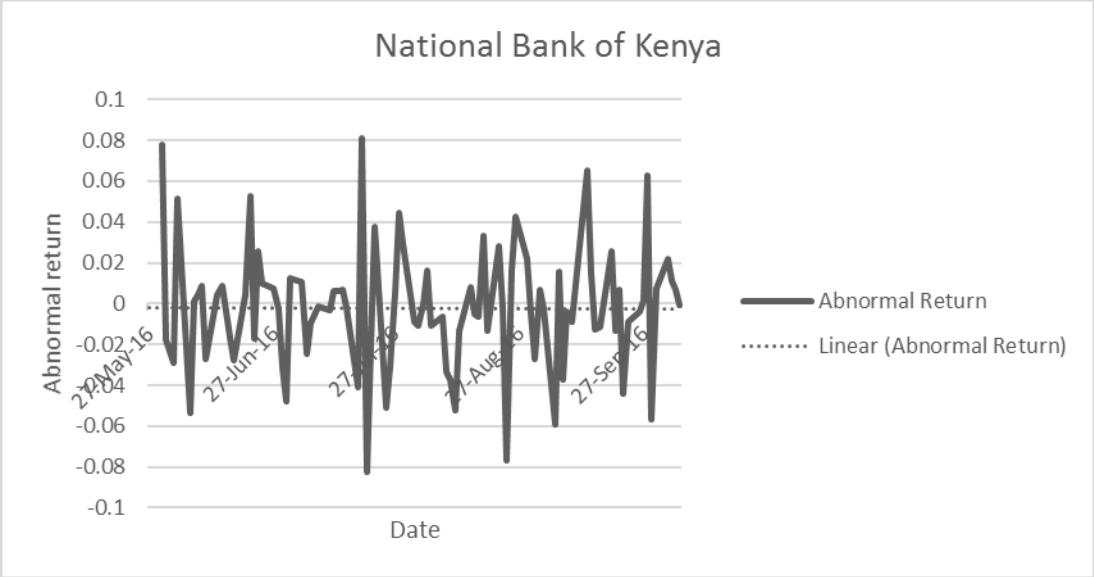
Source: Research findings (2017)

According to Figure 4.7, there had been a sharp increase in abnormal returns from -0.0059 on 22nd August to 0.0116 on 23rd August. The abnormal returns drastically fell to -0.0719 on 26th August after the president had signed the bill on 24th August 2016. From 26th to 31st August 2016, the abnormal returns steadily increased to 0.0683 on 31st August 2016. The volatility of the Kenya Commercial Bank Ltd's stocks heightened

immediately before and after the president signed the bill. The abnormal returns sharply decreased and increased after the signing of the bill respectively. The abnormal returns volatility normalized after 31st August 2016. As the graph's trend line indicates, the bank's abnormal returns had been increasing during the window period of study

4.3.8 National Bank of Kenya Ltd

Figure 4.8: Daily abnormal returns before and after 24th August 2016



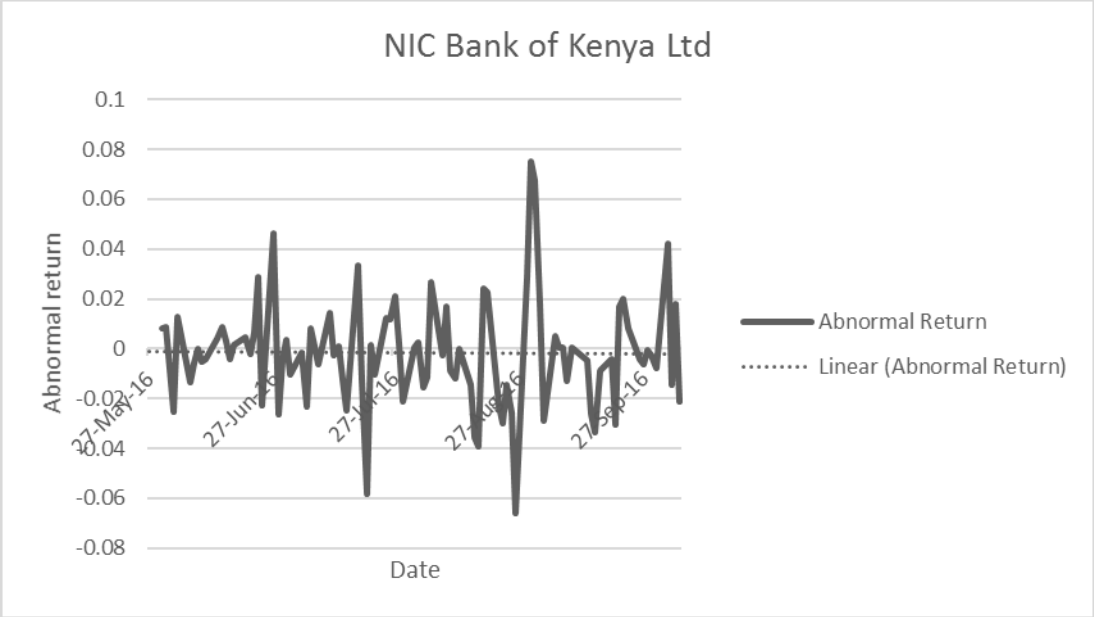
Source: Research findings (2017)

According to Figure 4.8, the bank's stock has been highly volatile during the period of the study. Prior to the event day, there was a sharp decrease in abnormal returns from 0.0281 on 22nd August to -0.0767 on 24th August. Then, the abnormal returns drastically rose to 0.0424 on 26th August. From 26th to 31st August 2016, the abnormal returns steadily decreased to -0.0270 on 31st August 2016. The volatility of the National Bank Ltd's stocks heightened immediately before and after the president signed the bill. The

abnormal returns steadily decreased and increased prior and after the signing of the bill respectively. The abnormal returns volatility normalized after 31st August 2016. As the graph's trend line indicates, the bank's abnormal returns had been decreasing during the window period of study.

4.3.9 NIC Bank Ltd

Figure 4.9: Daily abnormal returns before and after 24th August 2016



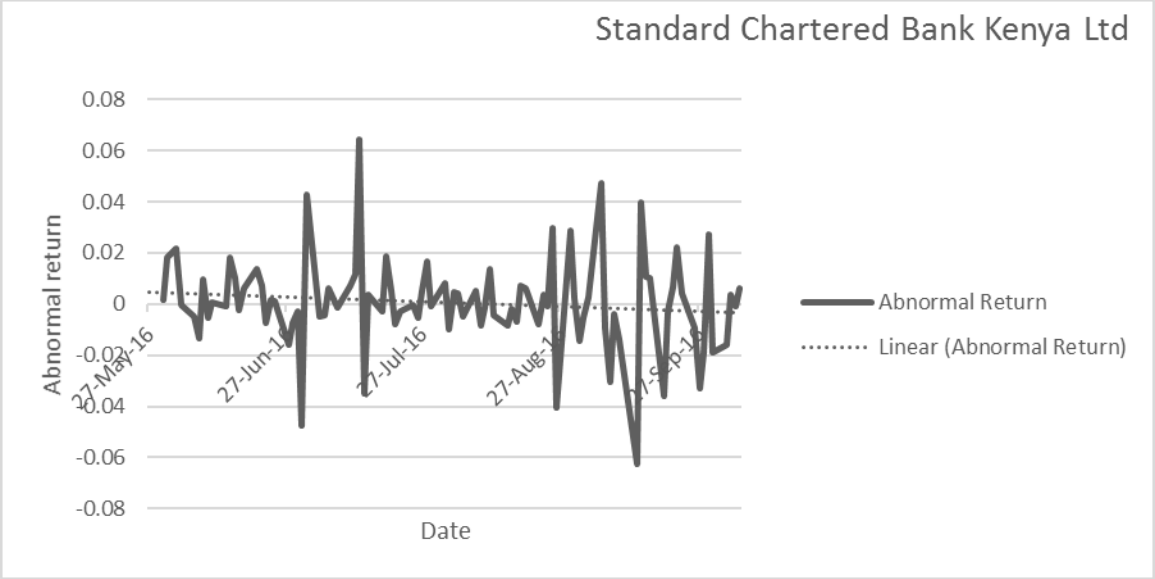
Source: Research findings (2017)

According to Figure 4.9, there had been a steady decrease in abnormal returns from 0.0239 on 18th August to -0.0298 on 22nd August. However, the abnormal returns had shortly increased on 23rd August from -0.0298 to -0.0144 on 24th August. The abnormal returns then drastically reduced to -0.0662 on 26th August after the president had signed the bill on 24th August 2016. From 26th to 30th August 2016, the abnormal returns

steadily increased to 0.0751. The volatility of the NIC Bank Ltd's stocks heightened immediately before and after the president signed the bill. The abnormal returns steadily decreased and increased prior and after the signing of the bill respectively. The abnormal returns volatility normalized after 30th August 2016. As the graph's trend line indicates, the bank's abnormal returns had been decreasing during the window period of study.

4.3.10 Standard Chartered Bank Kenya Ltd

Figure 4.10: Daily abnormal returns before and after 24th August 2016



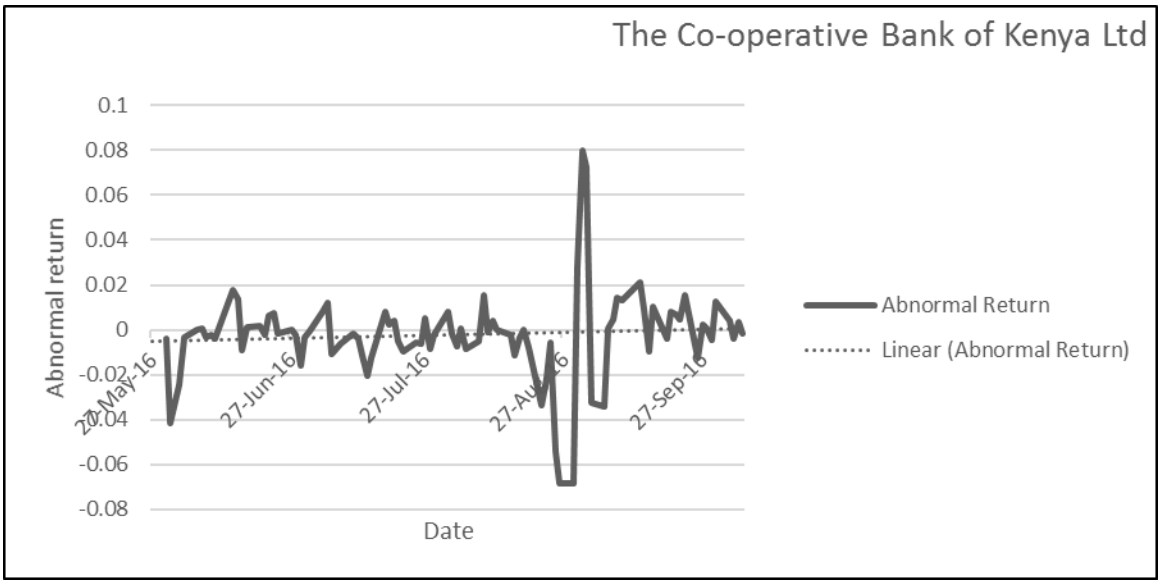
Source: Research findings (2017)

According to Figure 5.0, there had been a sharp increase in abnormal returns from -0.0078 on 22nd August to 0.0039 on 23rd August followed by a drastic reduction of the abnormal returns to -0.0009 on 24th August. The abnormal returns slightly increased on 25th but suddenly fell to -0.0405 on 26th August. From 256h to 30th August 2016, the abnormal returns steadily increased to 0.0022. The volatility of the Standard Chartered Bank Kenya Ltd's stocks heightened immediately before and after the president signed

the bill. The abnormal returns steadily increased and decreased prior and after the signing of the bill respectively. The abnormal returns volatility normalized after 31st August 2016. As the graph's trend line indicates, the bank's abnormal returns had been increasing during the window period of study.

4.3.11 The Co-operative Bank of Kenya Ltd

Figure 4.11: Daily abnormal returns before and after 24th August 2016



Source: Research findings (2017)

According to Figure 5.1, there had been a sharp decrease in abnormal returns from -0.0058 on 24th August to -0.0683 on 29th August. However, the abnormal returns had shortly increased on 22nd August from -0.0336 to -0.0058 on 22nd August and 24th August respectively. The abnormal returns then drastically increased to 0.0726 which was the highest on 1st September. The volatility of the Co-operative Bank of Kenya Ltd's stocks heightened immediately before and after the president signed the bill. The abnormal returns volatility normalized after 1st September 2016. As the graph's trend

line indicates, the bank's abnormal returns had been increasing during the window period of study.

4.4 T- Test

4.4.1 Paired Sample Test

The T-test statistics depict a high level of significance from 0 which is taken for the market mean in all the banks except for Stanbic Bank Limited where it is insignificant and KCB where it is moderately significant. The t statistics are as follows: Diamond Trust Bank is at 0.828, Barclays bank Ltd at 0.914, Equity Bank Ltd at 0.767, Housing Finance Bank at 0.947, I & M Bank at 0.73, KCB at 0.503, NBK at 0.784, NIC Bank 0.737, Standard Chartered Bank at 0.667, and Co-operative Bank ltd at 0.882. However, Stanbic Bank ltd at 0.325 which implies that the event did not have a significant effect on the bank. It is the only bank whose abnormal returns are barely affected by the signing of the Banking (Amendment) Act 2016 on 24th August 2016.

Table 4.2: Paired Sample Test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Lower	95% Confidence Upper			
Pair 1	diamond - NSE	.0005454	.0194783	.0024939	-.0044432	.0055340	.219	60	.828
Pair 2	baclays - NSE	.0002956	.0214071	.0027409	-.0051870	.0057782	.108	60	.914
Pair 3	stanbic - NSE	.0026365	.0207348	.0026548	-.0026739	.0079470	.993	60	.325
Pair 4	equity - NSE	-.0007681	.0201340	.0025779	-.0059247	.0043885	-.298	60	.767
Pair 5	housing - NSE	-.0002422	.0284041	.0036368	-.0075168	.0070324	-.067	60	.947
Pair 6	I and m - NSE	.0012625	.0284677	.0036449	-.0060284	.0085535	.346	60	.730
Pair 7	KCB - NSE	.0016885	.0195667	.0025053	-.0033228	.0066998	.674	60	.503
Pair 8	NBK - NSE	-.0012426	.0352907	.0045185	-.0102810	.0077957	-.275	60	.784
Pair 9	NIC - NSE	-.0010918	.0252789	.0032366	-.0075660	.0053824	-.337	60	.737
Pair 10	std - NSE	.0013629	.0246048	.0031503	-.0049387	.0076645	.433	60	.667
Pair 11	coop - NSE	-.0003692	.0193292	.0024748	-.0053196	.0045813	-.149	60	.882

4.4.2 Paired Sample Statistics

The paired sample statistics depicts the mean, population, standard deviation, and the standard error mean for the banks. Each bank is compared to the NSE 20 share index which is taken for the market mean. The NSE 20 share index mean, standard deviation, and standard error mean are constant at -0.001646 0.0097941, and 0.0012540 respectively. However, each bank has got its own specific statistics. The bank with the highest standard deviation is I & M bank with 0.303778 and the one with the lowest is Stanbic bank which is at 0.174418. This implies that the abnormal returns' mean is almost the same in all the banks.

Table 4.3 Paired Sample Statistics

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	diamond	-.001101	61	.0181162	.0023195
	NSE	-.001646	61	.0097941	.0012540
Pair 2	baclays	-.001351	61	.0196161	.0025116
	NSE	-.001646	61	.0097941	.0012540
Pair 3	stanbic	.000990	61	.0174418	.0022332
	NSE	-.001646	61	.0097941	.0012540
Pair 4	equity	-.002414	61	.0233095	.0029845
	NSE	-.001646	61	.0097941	.0012540
Pair 5	housing	-.001888	61	.0276543	.0035408
	NSE	-.001646	61	.0097941	.0012540
Pair 6	I and m	-.000384	61	.0303778	.0038895
	NSE	-.001646	61	.0097941	.0012540
Pair 7	KCB	.000042	61	.0230669	.0029534
	NSE	-.001646	61	.0097941	.0012540
Pair 8	NBK	-.002889	61	.0319531	.0040912
	NSE	-.001646	61	.0097941	.0012540
Pair 9	NIC	-.002738	61	.0250340	.0032053
	NSE	-.001646	61	.0097941	.0012540
Pair 10	std	-.000283	61	.0202332	.0025906
	NSE	-.001646	61	.0097941	.0012540
Pair 11	coop	-.002015	61	.0230812	.0029552
	NSE	-.001646	61	.0097941	.0012540

4.4.3 Paired Samples Correlations

The statistics shows the correlation between the banks' abnormal return and the NSE 20 share index abnormal return. There are 61 observations per bank which 61 days in the window period. The following have a positive correlation to the NSE 20 share index; Cooperative bank, KCB, Equity bank, and I & M bank, Diamond Trust Bank, NIC bank, Housing Finance, Barclays bank, at 0.564, .543, .512, .350, .126, .170, .099, and .058 respectively. Others like Stanbic bank, NBK, and Standard Chartered bank have a negative correlation of -.087, -.205, and -.253 respectively.

Table 4.4 Paired Sample Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Stanbic & NSE20	61	-.087	.504
Pair 2	Diamond & NSE20	61	.126	.333
Pair 3	Equity & NSE20	61	.512	.000
Pair 4	Housing & NSE20	61	.099	.446
Pair 5	Barclays & NSE20	61	.058	.655
Pair 6	I and M & NSE20	61	.350	.006
Pair 7	KCB & NSE20	61	.543	.000
Pair 8	NBK & NSE20	61	-.205	.112
Pair 9	NIC & NSE20	61	.170	.189
Pair 10	STD & NSE20	61	-.253	.050
Pair 11	Coop & NSE20	61	.564	.000

4.4.4 Paired Sample Test

The paired sample test indicates that most of the banks' abnormal returns are significantly different at 95% confidence interval from the NSE 20 market abnormal return. The banks are Housing Finance Group Ltd leads with 0.947 followed by Barclays bank (0.914), Co-operative Bank (0.882), NBK (0.784), Diamond Trust Bank (0.828), Equity Bank (0.767), NIC (0.737), I & M bank (0.73), Standard Chartered bank (0.667), and KCB (0.503). However, Stanbic Bank (0.325) have abnormal returns which is insignificantly different from the market's abnormal return.

Table 4.5 Paired Samples Test

Paired Samples Test

		Paired Differences	T	Df	Sig. (2-tailed)
		95% Confidence Interval of the Difference			
		Upper			
Pair 1	Stanbic - NSE20	.00794697	.993	60	.325
Pair 2	Diamond - NSE20	.00553403	.219	60	.828
Pair 3	Equity - NSE20	.00438848	-.298	60	.767
Pair 4	Housing - NSE20	.00703243	-.067	60	.947
Pair 5	Barclays - NSE20	.00577821	.108	60	.914
Pair 6	I & M - NSE20	.00855346	.346	60	.730
Pair 7	KCB - NSE20	.00669977	.674	60	.503
Pair 8	NBK - NSE20	.00779575	-.275	60	.784
Pair 9	NIC - NSE20	.00538241	-.337	60	.737
Pair 10	STD - NSE20	.00766451	.433	60	.667
Pair 11	Coop - NSE20	.00458127	-.149	60	.882

4.5 Interpretation of the Findings and Discussion

The research study had an objective of determining the effect of the signing of Banking (Amendment) Act 2016 into law on 24th August 2016 had on the returns of the listed commercial banks' stocks at the NSE. Eleven banks listed at the NSE were observed how they reacted to the event before and after the law was signed. To determine abnormal returns of the listed banks at the NSE, the difference between the banks' actual and expected returns was established. Abnormal returns were found in all the banks but they were cyclical in nature. The abnormal returns comprised of both positive and negative

returns. All the banks had a negative and positive abnormal returns. Before the event, most of the banks had a negative abnormal return which continued for a day or two after the event and then changed to positive abnormal returns before stabilizing after around 7 days. All the banks abnormal returns were highly volatile days before and after the event day. Therefore, some investors made losses while others could have made profits.

The volatility of the banks' stocks heightened immediately after the president signed the bill. The T-test statistics depicted a high level of significance from 0 which is taken for the market mean in all the banks except for Stanbic Bank Limited which was insignificant at 0.325 and KCB which was moderately significant at 0.503. The t-statistics are as follows: Diamond Trust Bank is at 0.828, Barclays bank Ltd at 0.914, Equity Bank Ltd at 0.767, Housing Finance Bank at 0.947, I & M Bank at 0.73, KCB at 0.503, NBK at 0.784, NIC Bank 0.737, Standard Chartered Bank at 0.667, and Co-operative Bank ltd at 0.882. However, Stanbic Bank ltd at 0.325 which implies that the event did not have a significant effect on the bank. It is the only bank whose abnormal returns are barely affected by the signing of the Banking (Amendment) Act 2016 on 24th August 2016.

The paired sample statistics shows a positive correlation between the banks' abnormal return and the NSE 20 share index abnormal return. Out of the 11 banks observed, the following eight banks have a positive correlation to the NSE 20 share index; Cooperative bank, KCB, Equity bank, and I & M bank, Diamond Trust Bank, NIC bank, Housing Finance and Barclays bank. The others three namely; Stanbic bank, NBK, and Standard Chartered bank have a negative correlation.

During the entire event window (61 days), the following banks' abnormal returns had a declining trend: Barclays Bank of Kenya Ltd, Equity Group Holdings, National Bank of Kenya, Housing Finance Group, I & M Holdings, Standard Chartered Bank, and NIC Bank. On the other hand, Diamond Trust Bank Kenya, Kenya Commercial Bank, Stanbic Kenya Holdings ltd, and the Co-operative Bank of Kenya had rising abnormal returns trend line. This contradicts the observation on the trend line which shows that KCB and Stanbic bank Kenya Holdings ltd had a rising trend line.

According to the graphical presentation, the signing into law of Banking (Amendment) Act 2016 on 24th August 2016 had a cumulative negative effect on the banks' stock returns listed at the NSE. The T-test statistics indicate that the event was highly significant to most of the banks except for KCB and Stanbic bank Kenya Holdings ltd. The paired sample correlation shows a positive correlation between most of the banks and the NSE share index except for Stanbic bank, NBK, and Standard Chartered bank which have a negative correlation.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five present a summary, conclusion, and recommendation of the research findings as well as suggestions on further research on the topic. Various limitations encountered during the research study are also presented in this chapter.

5.2 Summary of Findings

The research study had an objective of determining the effect on which the signing into law of Banking (Amendment) Act 2016 on 24th August 2016 had on the returns of the listed commercial banks' stocks at the NSE. They comprise of 11 banks. The analysis involved analyzing how the stocks reacted to the signing of the Banking (Amendment) Act 2016 on 24th August 2016. In order to find out whether there were abnormal returns out of the event, 30 days before and after the signing of the bill into law were analyzed. An estimation period comprised of 30 days prior to the window period.

According to the study, all the banks listed at the NSE exhibited abnormal returns some of which were positive while others were negative. The abnormality in returns was observed shortly before and after the law was signed. Later the banks' stock would normalize. The abnormal returns mostly occurred a day before and after the event day.

All the banks had a similar trend in abnormal returns shortly before and after the event day. They would register an increase in abnormal returns prior to the event day or up to

the event day, a drastic decline of abnormal returns during or and a day after the event day, then register an increase in abnormal returns up to 31st August or 1st September 2016. However, during the entire event window (61 days), some banks' abnormal returns registered a declining trend while others increased. Barclays Bank of Kenya Ltd, Equity Group Holdings, National Bank of Kenya, Housing Finance Group, I&M Holdings, Standard Chartered Bank, and NIC Bank registered a declining abnormal returns' trend line. The banks' abnormal returns declined after 24th August to 31st of the same month. On the other hand, Diamond Trust Bank Kenya, Kenya Commercial Bank, Stanbic Kenya Holdings ltd, and The Co-operative Bank of Kenya registered rising abnormal returns trend line. The banks' abnormal returns steadily increased after 24th August to 31st of the same month. The research finding indicates that the signing into law of Banking (Amendment) Act 2016 on 24th August 2016 had a cumulative negative effect on the banks' stock returns listed at the NSE. This agrees with findings from Mbua (2017) who indicates that the interest capping law had a negative effect on the prices of the shares of the listed commercial banks of Kenya at the Nairobi Security exchange. According to Musiu (2013), regulating the interest lending rates have a negative effect on the financial performance of banks. This is confirmed by the research findings.

5.3 Conclusion

The research study indicates that the signing into law of Banking (Amendment) Act 2016 on 24th August 2016 by the president had an accumulative negative effect on the banks' stock returns listed at the NSE. This is so despite that Diamond Trust Bank Kenya, Kenya Commercial Bank, Stanbic Kenya Holdings ltd, and The Co-operative Bank of Kenya had a rising abnormal returns trend line. In conclusion, the reaction by the

bank investors in the market was highly significant thus affecting the listed banks' share prices at the NSE in the short period. The quick reaction of investors at the NSE was profitable to some while others made losses. The high volatility before and after the signing into law of Banking (Amendment) Act 2016 indicates that NSE is efficient as stipulated by Efficient Market Hypothesis. Investors in the stock market anticipated that the revenues of commercial banks would be negatively affected by the interest rate capping laws hence, rushed to sell their shares to avoid losses.

5.4 Recommendations

The study indicates that the law of Banking (Amendment) Act 2016 had a negative effect on the investors of banks at the NSE. Therefore, the law should be reviewed to evaluate whether it is causing more harm than good to Kenya's economy. NSE regulators such as CMA and the government should carry out extensive investor's education to deter heuristic trading in future. A significant number of investors are speculative in nature. Additionally, to make the NSE more efficient, better trading policies, regulations, and guidelines should be developed and enforced to reduce cases of returns abnormalities at the stock market which leads to unfair losses or gains. According to the research findings, the law of Banking (Amendment) Act 2016 should be reviewed. Probably, lending interest rate capping law directed to specific sectors of interests in the economy such as agriculture and manufacturing should be enforced if need be instead of a law capping the lending interests rate at large for all the sectors in the economy. Banks' manager should diversify their sources of income by developing other products as well as reducing the costs of operation. Income interest revenues comprised the largest source of revenues for

the banks and the law significantly affected this by capping the lending interest rates as well as the interest rate on savings.

5.5 Limitation of the Study

Several challenges were encountered while carrying out the study. To begin with, limitation of time was a great factor, and the study could not explore all the necessary aspects needed.

It was also a challenge accessing data from the NSE due to lack of an efficient way data dissemination from the organization. Some of the data had to be bought from vendors who are licensed by the NSE.

The data used in the study was secondary. Therefore, the accuracy of the study is limited to that extent. The observation was made on daily basis; it could have been different if it was made on hourly basis because it could be more accurate.

5.6 Suggestion for Further Research

The event study was conducted for a short period of 91 days, shortly before and after the signing of the law. I would, therefore, recommend studies on the same topic to be carried out for a longer period to determine how the signing into law of Banking (Amendment) Act 2016 affected the returns of commercial bank stocks at the NSE.

Further studies should be carried to determine how the law of Banking (Amendment) Act 2016 affected the profitability, revenues, and liquidity of the commercial banks listed at

the NSE. Such studies would assist policy developers in coming up with the best policies, rules, and regulations for the financial industry in Kenya.

One of the key assumption made during the research study was that no other major factors besides the signing into law of the Banking (Amendment) Act 2016 on 24th August affected the commercial banks stock returns listed at the NSE.

REFERENCES

Barberis, N., Thaler, R., Constantinides, G. M., Harris, M., & Stulz, R. M. (2003). Handbook of the Economics of Finance.

Black P., Hartzenberg, T. and Standish B. (1997). Economic principles and practice: A South African perspective; 2nd edition London; Pitman publishing

Brown, C, K and Rielly, F, K (2012). Investment Analysis and Portfolio Management, 10th Edition, South Western College

Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). *The econometrics of financial markets*. Princeton, NJ: Princeton Univ. Press.

CMA. (2016). Capital Market Soundness Report(Kenya). Retrieved from https://goo.gl/pZnKSv

CBK. (2017). Mergers & Acquisitions - CBK. Retrieved from https://www.centralbank.go.ke/commercial-banks/mergers-and-acquisitions/'

CBK. (2017). Commercial Banks Weighted Average Rates - CBK. Retrieved from https://www.centralbank.go.ke/commercial-banks-weighted-average-rates/

CBK. (2017). The Banking (Amendment) Act. Retrieved from https://goo.gl/Bspwep

Del Camino Torrecillas, M., & Jareño, F. (2013). Inflation News Impact on Stock Market: A Review. *Pensee*, *75*(11), 414-419.

Ellison, A., & Forster, R. (2008). The impact of interest rate ceilings: The evidence from international experience and the implications for regulation and consumer protection in the credit market in Australia. *Policis, Marzo*.

Fama, E. (1998). Market Efficiency, Long-term Returns and Behavioral Finance. *Journal of Financial and Economics, Vol. 49*, pp. 283-306

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International economic review*, *10*(1), 1-21. http://ageconsearch.umn.edu/bitstream/18078/1/wp020008.pdf

Hancock, D. (1985). "Bank Profitability, Interest Rates, and Monetary Policy." Journal of Money, Credit, and Banking 17, no. 2, pp. 189-202.Ho,

Heng, D. (2015). Impact of the New Financial Services Law in Bolivia on Financial Stability and Inclusion.

Kawira, K.B. (2014). The Effect Of Bonus Issue Announcements On Share Prices Of Commercial Banks Listed At The Nairobi Securities Exchange. Unpublished MSC Project, University of Nairobi

Kiweu, J. M. (2012). Income Diversification in the Banking Sector and Earnings Volatility: Evidence from Kenyan Commercial Banks. Retrieved from http://www.kba.co.ke/downloads/Working_Paper_WPS_02_12[3].pdf

Lintner, G. (1998). Behavioral finance: Why investors make bad decisions. *The Planner*, *13*(1), 7-8.

Locke, J. (1988). *Locke: Two treatises of government student edition*. Cambridge University Press.

Marshall, A. (2009). *Principles of economics: unabridged eighth edition*. Cosimo, Inc..

Maimbo, S. M., & Henriquez Gallegos, C. A. (2014). Interest rate caps around the world: still popular, but a blunt instrument.

Makokha, A. S. (2012). *A Research Project Submitted In Partial Fulfilment Of The Requirements For The Award Of The Degree Of Master Of Business Administration, University Of Nairobi* (Unpublished master's thesis). University of Nairobi, Nairobi.

Mburu, S. (2016, August 30). Mburu: What the new interest rates law means for borrowers, depositors - Daily Nation. Retrieved from http://www.nation.co.ke/lifestyle/money/What-new-interest-rates-means-borrowers-depositors/435440-3362556-12bvq0jz/index.html

Mbua, N.S. (2017). Effect of Interest Rates Capping by the Central Bank of Kenya on the Banks Listed at the Nairobi Securities Exchange

Miller, H. (2013). Interest rate caps and their impact on financial inclusion. *Economic and Private Sector, Professional Evidence and Applied Knowledge Services*.

Mohane, H, Gerhard Coetzee & William Grant (2002). The Effects of the Interest Rate Ceilings on the Micro Lending Market in South Africa

Musiu, K.D. (2013). Relationship between Lending Interest Rates and the Financial Performance of Commercial Banks In Kenya. (Unpublished MBA Project), University of Nairobi

Mwangangi, A.K. (2013). Economic Performance Indicators and Stock Returns At The Nairobi Securities Exchange. (Unpublished MSC Project), University of Nairobi

Mwirotsi, S. (2012). The Effects of Lending Rate Policy on The Loan Portfolio Of Commercial Banks in Kenya. (Unpublished MBA Project), University of Nairobi

Odhiambo, L.A. (2013). The Effect Of Changes In Interest Rates On The Demand For Credit And Loan Repayments By Small And Medium Enterprises In Kenya. (Unpublished MBA Project), University of Nairobi

Olaka, H. (2017). *The Capping Interest Rates Debate: Market Failure or Necessary Intervention?* (25) Retrieved from ICPAK website: https://www.icpak.com/wp-content/uploads/2017/02/Interest-Rates-Capping-CPA-Habil.pdf

Retirement Benefit Authority. (2010). *The Impact Of The Global Financial Crisis On The Kenyan Retirement Benefits Industry*. Retrieved from RBA website: https://goo.gl/ZNX9VJ

Rothschild, E. (1994). Adam Smith and the invisible Hand. *The American Economic Review*, *84*(2), 319-322.

Steuart, J. (1767). *An Inquiry Into the Principles of Political Economy: Being an Essay on the Science of Domestic Policy in Free Nations in which are Particularly Considered Population, Agriculture, Trade, Industry, Money, Coin, Interest, Circulation, Banks, Exchange, Public Credit, and Taxes* (Vol. 2).

Swanya, J. (2014). Effect of Subscription Rate on Initial Public Offerings Performance at The Nairobi Securities Exchange. *University Of Nairobi*. (Unpublished master's thesis). University of Nairobi, Nairobi.

APPENDICES

APPENDIX A: LISTED COMMMERCIAL BANKS

1	Barclays Bank of Kenya Limited
2	Stanbic Kenya Holdings ltd
3	Diamond Trust Bank Kenya Limited
4	Housing Finance Company Limited
5	Kenya commercial Bank
6	National Bank of Kenya Limited
7	NIC Bank
8	Standard Chartered Bank Kenya Limited
9	The Co-operative Bank of Kenya
10	Equity Group Holdings,
11	I&M Holdings

APPENDIX: LISTED COMMMERCIAL BANKS RETURNS

Date 2016	stanbic	diamond	baclays	equity	housing	I and m	KCB	NBK	NIC	std	coop	NSE 20
						ESTIMATION PERIOD						
5/30	-0.015	-0.0478	0.00667	-0.0108	0.0017	0.0017	-0.0046	0.0779	0.00828	0.0017	-0.0038	-0.0017
5/31	0.00293	-0.0122	-0.0013	0.00858	0.00108	-0.0005	-0.0042	-0.0180	0.00858	0.01825	-0.0413	-0.0086
6/2	-0.004	0.00737	0.00237	0.0137	-0.0103	0.01655	-0.0055	-0.0290	-0.0253	0.02173	-0.0247	-0.0074
6/3	-0.0234	-0.0005	-0.0105	-0.0005	-0.0184	-0.0005	-0.0266	0.0514	0.01306	-0.0005	-0.0035	0.00046
6/6	0.00596	-0.0638	7.4E-05	7.4E-05	7.4E-05	7.4E-05	0.00679	-0.0537	-0.0133	-0.0046	7.4E-05	-7E-05
6/7	0.00671	-0.0048	0.01102	0.00715	0.02436	0.00087	-0.0125	0.0009	-0.0059	-0.0134	0.00087	-0.0009
6/8	-0.0118	0.00558	0.00489	-0.0064	0.02027	-0.0183	-0.0137	0.0046	-0.0001	0.00948	-0.0032	0.00014
6/9	-0.0052	-0.0052	-0.0002	-0.0052	0.00725	-0.0052	-0.0189	0.0089	-0.0052	-0.0052	-0.0022	0.00525
6/10	-0.004	0.00737	0.00099	0.0023	0.0207	0.01453	0.00296	-0.0272	-0.004	0.00077	-0.004	0.00399
6/13	0.02764	0.01535	0.00906	0.00411	-0.032	-0.005	-0.0028	0.0041	0.00411	-0.0006	0.01317	-0.0041
6/14	-0.0142	-0.019	0.00389	0.00882	0.00882	-0.0829	-0.0051	0.0088	0.00882	0.01834	0.0178	-0.0088
6/15	-0.004	0.01314	-0.0139	0.00224	-0.0065	-0.004	-0.011	-0.0040	0.0028	0.01014	0.0138	0.00401
6/16	-0.027	-0.0144	-0.0026	-0.0038	0.00493	0.09334	0.00952	-0.0166	-0.0043	-0.0022	-0.0092	-0.0024
6/17	0.00754	0.01863	0.00148	0.00148	0.01398	0.00148	-0.0126	-0.0276	0.00148	0.00616	0.00148	-0.0015
6/20	0.00452	0.00452	-0.0106	0.00452	0.00452	0.00452	0.01167	0.0045	0.00452	0.01383	0.00157	-0.0045
6/21	-0.0021	-0.0133	-0.0072	-0.0021	-0.0021	-0.0299	-0.0092	0.0529	-0.0021	0.00712	-0.0021	0.00209
6/22	0.00639	0.00639	0.01151	0.00639	-0.006	0.02543	-0.0008	-0.0173	0.00639	-0.0073	0.00639	-0.0064
6/23	0.01375	0.00739	0.00171	-0.0108	0.00171	0.01105	0.00171	0.0260	0.02892	0.00171	0.00762	-0.0017
6/24	-0.0196	-0.0011	0.01529	-0.0151	0.01019	0.01019	0.00299	0.0102	-0.0229	0.00093	-0.0016	-0.0102
6/27	-0.0065	-0.0681	0.0018	0.01195	0.01195	0.03047	-0.0025	0.0072	0.0462	-0.0161	4.5E-05	-0.0119
6/28	0.00697	0.03181	-0.0135	-0.0125	0.00697	-0.0112	-0.0004	-0.0026	-0.0261	-0.0075	-0.0021	-0.007
6/29	0.00209	0.00209	0.00209	0.00871	0.01459	0.00209	0.00209	-0.0316	-0.0048	-0.0028	-0.0161	-0.0021
6/30	-0.0032	-0.0032	0.00205	0.00997	-0.0032	0.01533	-0.0032	-0.0480	0.00371	-0.0473	-0.0032	0.00319
7/1	0.02165	0.00878	0.0227	0.00964	-0.0157	-0.0124	-0.0033	0.0123	-0.0102	0.04281	-0.0002	0.00335
7/4	0.00515	-0.0368	0.01023	0.01156	0.00515	0.00515	-0.0023	0.0103	-0.0017	-0.0047	0.00824	-0.0051
7/5	-0.0034	0.02176	0.00062	-0.0031	-0.012	-0.0095	-0.002	-0.0248	-0.0234	-0.0045	0.01205	0.00949
7/6	-0.0293	0.0313	0.001	0.00733	-0.0015	0.001	-0.0064	-0.0094	0.00804	0.00593	-0.011	-0.001
7/8	-0.0065	-0.0065	-0.0065	-0.0065	-0.0065	-0.0065	-0.0065	-0.0012	-0.0065	-0.0016	-0.0065	0.00646
7/11	0.00729	0.00729	0.01229	0.001	0.00729	0.00729	-0.0076	-0.0031	0.01428	0.00729	-0.0019	-0.0073
7/12	0.01145	-0.0003	0.00647	0.01145	0.01145	-0.0344	-0.0189	0.0062	-0.0024	0.01145	-0.0039	-0.0114

WINDOW PERIOD

Date	stanbic	diamond	baclays	equity	housing	I and m	KCB	NBK	NIC	std	coop	NSE 20
7/13	0.000986	0.000986	0.000986	-0.005343	-0.001526	0.049063	0.024424	0.006277	0.000986	0.064401	-0.011514	-0.000986
7/14	0.001739	0.013644	0.001739	-0.017369	-0.005817	0.001739	-0.013528	0.007003	-0.012345	-0.034958	-0.020412	-0.001739
7/15	0.003554	-0.014093	0.008554	-0.002939	-0.001522	0.003554	0.003554	-0.001681	-0.025017	0.003554	-0.012627	-0.003554
7/18	0.024121	-0.012331	0.006646	-0.007987	0.011621	0.011621	0.003869	-0.041011	0.033680	-0.002665	0.008331	-0.011621
7/19	0.009057	0.009057	0.004057	-0.004276	0.009057	-0.000117	0.016870	0.081279	-0.012526	0.018719	0.002457	-0.009057
7/20	0.000627	-0.023913	-0.014448	-0.006129	0.000627	0.000627	0.000627	-0.082274	-0.058196	0.005412	0.003950	-0.000627
7/21	0.001610	0.007900	0.022019	0.001610	-0.003492	0.001610	0.001610	-0.020988	0.001610	-0.007913	-0.005012	-0.001610
7/22	0.015819	-0.002700	-0.002700	-0.002700	0.017813	-0.002700	0.005052	0.037763	-0.010512	-0.002700	-0.009366	0.002700
7/25	-0.007553	0.004568	0.004568	0.018173	0.007080	-0.023210	-0.003124	-0.050988	0.012442	-0.000240	-0.005499	-0.004568
7/26	0.010256	0.004121	0.004121	0.010833	-0.008410	0.013645	0.019625	-0.031173	0.011934	-0.005540	-0.006048	-0.004121
7/27	0.011435	0.011588	0.000338	0.038671	-0.004815	-0.004096	-0.002296	0.005338	0.020842	0.005338	0.005338	-0.005338
7/28	0.002040	-0.004171	0.007065	0.008492	-0.021037	0.002040	-0.005652	0.044723	0.002040	0.016674	-0.008234	-0.002040
7/29	-0.005876	-0.030876	-0.000876	-0.031517	-0.008501	-0.043971	-0.013628	0.029212	-0.021143	-0.001068	-0.002416	0.005876
8/1	0.001985	0.020867	0.008046	-0.005112	0.008046	0.047650	0.008046	-0.008903	0.000294	0.008046	0.008046	-0.008046
8/2	-0.005308	0.007350	-0.010283	-0.005308	0.021007	-0.033880	-0.005308	-0.011055	0.002504	-0.010093	-0.001860	0.005308
8/3	0.005879	-0.006468	-0.000218	0.013115	-0.002783	0.048801	-0.015843	-0.000218	-0.015722	0.004589	-0.007091	0.000218
8/4	-0.001678	0.016961	0.004383	0.004383	-0.011042	0.013728	0.004383	0.015943	-0.011366	0.004383	0.000922	-0.004383
8/5	-0.005109	0.007313	-0.020109	-0.005109	-0.010331	-0.005109	0.010764	-0.010823	0.026891	-0.005109	-0.008581	0.005109
8/8	0.005339	0.005339	0.005339	0.005339	0.018462	0.005339	0.013151	-0.006156	-0.002413	0.005339	-0.005114	-0.005339
8/9	0.001296	-0.017109	0.001296	0.001296	-0.001294	-0.026481	0.009048	-0.033587	0.016921	-0.008273	0.015381	-0.001296
8/10	-0.001191	-0.001191	-0.001191	-0.014349	-0.042750	-0.001191	-0.001191	-0.037336	-0.008883	-0.001191	-0.001191	0.001191
8/11	-0.020602	0.003788	0.008865	0.010455	-0.004342	-0.024783	0.003788	-0.052462	-0.011715	0.013450	0.003788	-0.003788
8/12	0.000191	0.000191	0.005242	0.013436	-0.048989	0.000191	0.000191	-0.013054	0.000191	-0.004593	0.000191	-0.000191
8/15	0.001113	0.001113	-0.003912	0.001113	-0.021875	0.010917	0.001113	0.007825	-0.014635	-0.008502	-0.002359	-0.001113
8/16	-0.011539	-0.011539	-0.011539	-0.005003	-0.008598	-0.011539	-0.011539	-0.004873	-0.035539	-0.001831	-0.011539	0.011539
8/17	0.005858	0.018358	-0.011693	-0.006642	-0.053563	-0.016351	0.001050	-0.006642	-0.039429	-0.006642	-0.003158	0.006642
8/18	0.000790	-0.011330	0.012039	0.000470	0.003886	0.006963	0.006963	0.033453	0.023912	0.006963	0.000019	-0.006963
8/19	-0.000035	-0.000035	-0.003924	-0.006895	-0.003083	0.006177	-0.001457	-0.013178	0.022843	0.006177	-0.007809	-0.006177
8/22	0.001834	0.001834	0.006936	-0.018034	0.001834	0.011638	-0.005858	0.028150	-0.022756	-0.007781	-0.033627	-0.001834
8/23	0.003860	0.003860	0.003860	-0.016411	-0.021062	0.032986	0.011612	-0.002551	-0.029754	0.003860	-0.021876	-0.003860
8/24	-0.005754	-0.012004	-0.020982	-0.012650	0.016610	0.003680	0.001938	-0.076722	-0.014450	-0.000900	-0.005754	0.005754
8/25	-0.037088	-0.062756	-0.043467	-0.046115	0.009787	-0.053969	-0.039807	0.016385	-0.026013	0.029670	-0.053951	-0.044162
8/26	0.048549	0.014057	-0.005757	-0.071096	-0.068946	-0.070305	-0.071859	0.042427	-0.066199	-0.040486	-0.068093	-0.028141
8/29	-0.004396	0.014651	0.046481	-0.064283	-0.039163	-0.068764	-0.063655	0.021895	0.028937	0.028937	-0.068285	-0.028937
8/30	0.022841	-0.005095	0.059623	-0.044578	0.005998	-0.042435	0.042968	-0.004941	0.075068	0.002151	0.027792	-0.002151
8/31	0.013889	0.016601	0.045322	0.058536	0.068227	0.080105	0.068340	-0.027038	0.067483	-0.014632	0.080105	0.019895
9/1	0.012946	-0.007168	-0.010330	-0.018308	0.084381	0.090783	-0.045171	0.007068	0.017731	-0.005361	0.072601	0.000126
9/2	0.003734	-0.002718	-0.007872	-0.021236	0.078451	-0.086051	-0.002718	-0.002718	-0.029033	0.002546	-0.032379	0.002718
9/5	0.018025	0.005204	0.000023	0.005204	-0.027829	0.023386	-0.004230	-0.059082	0.005204	0.047089	-0.034097	-0.005204
9/6	0.013279	0.000621	-0.041045	-0.018247	0.000621	0.000621	0.000621	0.015888	0.000621	-0.009429	0.000621	-0.000621
9/7	-0.037282	0.056955	-0.021521	0.000218	0.025062	0.012122	0.019265	-0.037376	0.000218	-0.030239	0.004763	-0.000218
9/8	-0.016670	-0.064086	-0.009239	0.005932	-0.006713	-0.003683	0.005663	-0.003683	-0.012692	-0.003683	0.014417	0.003683
9/9	0.004366	-0.015935	-0.031138	-0.008792	-0.011831	0.008855	0.037505	-0.008792	0.000299	-0.014027	0.013431	0.008792
9/13	-0.004847	-0.004847	-0.004847	-0.014371	-0.035335	0.029835	-0.031396	0.065466	-0.004847	-0.062742	0.021240	0.004847
9/14	-0.012388	0.007793	0.000599	-0.018632	0.006888	0.000599	0.000599	0.015197	-0.026428	0.039705	0.009073	-0.000599
9/15	0.001014	-0.005565	0.011578	-0.005565	-0.005565	-0.005565	-0.041929	-0.012759	-0.033343	0.010564	-0.009767	0.005565
9/16	0.043075	-0.003890	-0.012076	0.010396	0.010396	-0.011951	0.000962	-0.011343	-0.008652	0.010396	0.010396	-0.010396
9/19	-0.029296	0.010513	0.001767	-0.003980	-0.003980	0.018877	0.005544	0.025650	-0.003980	-0.035726	-0.003980	0.003980
9/20	0.008254	0.001112	-0.003174	0.018058	0.008254	-0.008505	-0.010614	-0.013328	-0.030581	-0.002675	0.008254	-0.008254
9/21	0.006920	0.006920	-0.068225	0.016628	-0.002455	0.006920	-0.002696	0.006920	0.017021	0.006920	0.006920	-0.006920
9/22	-0.012804	0.000183	0.012683	0.019414	0.003338	0.000183	0.000183	-0.043935	0.020183	0.022282	0.004402	-0.000183
9/23	-0.034318	-0.030200	-0.001423	0.008011	-0.004568	-0.012787	-0.001423	-0.009115	0.008381	0.003983	0.015384	0.001423
9/26	0.023059	0.025477	-0.010325	-0.004152	-0.010461	-0.021394	-0.023570	-0.004152	-0.004152	-0.009529	-0.012417	0.004152
9/27	-0.039193	-0.006080	-0.012292	0.021957	0.006618	0.005616	-0.006080	0.001672	-0.006080	-0.033107	0.002253	0.006080
9/28	0.009047	-0.019730	-0.003453	0.045410	0.005912	0.003266	0.018948	0.062893	-0.000662	-0.018731	0.000782	-0.009047
9/29	-0.033151	0.017026	-0.012603	0.031256	-0.012603	0.022280	0.046220	-0.056399	-0.002800	0.027397	-0.004270	0.012603
9/30	-0.007912	-0.007912	0.023733	0.025701	-0.004768	-0.019148	0.029125	0.007355	-0.007912	-0.018901	0.012749	0.007912
10/3	0.039944	-0.016000	0.002405	0.040911	-0.059887	-0.021681	0.028643	0.021594	0.042253	-0.016000	0.004243	0.016000
10/4	0.003781	0.010976	0.027878	-0.042372	0.046404	0.009496	-0.004766	0.011028	-0.014567	0.003781	-0.004155	-0.003781
10/5	-0.000670	-0.000670	-0.024200	-0.008735	-0.035261	0.005012	-0.009291	0.006524	0.018021	-0.000670	0.003330	0.000670
10/6	0.012958	0.006335	-0.005713	-0.018055	0.022622	0.006335	-0.011056	-0.000808	-0.021188	0.006335	-0.001633	-0.006335