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Effect of interest rate capping on capital market performance in Kenya

Tabitha Thuo
Strathmore Business School (SBS)
Strathmore University

EFFECT OF INTEREST RATE CAPPING ON CAPITAL MARKET PERFORMANCE IN KENYA

TABITHA THUO

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DECLARATION AND APPROVAL

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

TABITHA WANJIRU THUO .....

Signature .....

Date .....

Approval

The thesis of **Tabitha Wanjiru Thuo** was reviewed and approved for examination by the following:

....

Dr. Julius Muia

Supervisor, Strathmore School of Management and Commerce, Strathmore University

....

Dr. George Njenga,

Dean, Strathmore University Business School, Strathmore University

....

Professor Ruth Kiraka,

Dean, School of Graduate Studies, Strathmore University

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LIST OF ABBREVIATIONS

ANOVA	:	Analysis of Variance
ASE	:	Amman Stock Exchange
CBK	:	Central Bank of Kenya
EU	:	European Union
IFC	:	International Finance Corporation
NSE	:	Nairobi Securities Exchange
OFT	:	Office of Fair Trading
SPSS	:	Statistical Package for Social Sciences

DEFINITION OF TERMS

Event Analysis: A statistical method that assesses the impact of an event on a certain phenomenon being studied. In this study, event analysis is a technique of determining the effect of interest rate capping on capital market performance.

Interest Rate Cap: The regulation of maximum interest rate charged on loans and minimum interest rate paid on deposits by commercial banks.

Panel Data: A data analysis technique which shows the relationship between two or more variables with consideration of the time effect on the study variables.

Regression Analysis: A statistical method that allows examination of the relationship between two or more variables of interest without consideration of the time series effect in the data.

ABSTRACT

The National Assembly of Kenya amended the Banking Act (2015) and introduced interest rate capping effective September 2016. This reopened an old debate over the appropriateness of regulatory interventions on bank interest rates. Proponents of interest rate capping argued that the credit market was inelastic and that interest rates were not being determined by market forces; resulting in banks charging high non-market interest rates on loans and paying low interest on deposits. In contrast, critics argued that interest rate caps would distort the market and prevent banks from offering loan products to borrowers at the lower end of the market who have no alternative access to credit. Informed by the close relation between financial and capital markets as well as the importance of the latter as an alternative source of business capital and investment asset class, this study sought to examine the effect of interest rate capping on the capital market performance in Kenya during the five years period from 2013 to 2018. The study used monthly secondary data from the Central Bank of Kenya and Nairobi Securities Exchange (NSE). Using panel data and event analysis, the study found that interest rates on loans and deposits had a significant negative effect on equity market performance; but insignificant positive effect on debt market performance. Interest rate capping on deposits had no significant effect on equity market performance while capping of interest rates on loans had a positive effect on equity market performance. Interest rate capping on loans and savings had no significant effect on debt market performance. Government borrowing was found to have a significant negative moderating effect on the relationship between interest rates and equity market performance. The study concluded that government borrowing increases interest rates and also reduces equity market performance. Further conclusion was that capping of interest rate on loans significantly improved equity market performance. The study recommends that the Central Bank should use market-based policies to influence interest rates since interest rate capping delivers desired effects in short term. Further, the government should focus on market interest rate stabilization to avoid the long run negative effects of interest rate capping on the economy. Further studies can examine the relationship between interest rate capping with equities at security level. Another study can determine the transmission mechanism of interest rate capping to the debt segment of capital markets.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The importance of interest rates in influencing economic performance is recognized globally (Miller, 2013). Contributing to this debate, Karine (2014) observes that interest rates are important economic tools since they are directly linked to financial markets. High interest rates increase the cost of loans and thus discourage borrowing, spending and investments (Campion, Ekka & Wenner, 2012). Additionally, high interest rates increase foreign appetite for government bonds and fixed deposits, thus resulting to foreign capital inflows (Harun, Ilhan, & Alper, 2014). Interest rates also affect all financial markets, including but not limited to stocks, bonds, futures, forex and options (Campion, Ekka & Wenner, 2012).

The importance of interest rates in an economy has over the years forced governments across the world to introduce interest rate caps (Karine, 2014). This is in spite of existing literature suggesting that interest rates should be determined by supply and demand (Amadeo, 2017). In Kenya, bank interest rate caps were introduced in September 2016 through amendment to the Banking Act 2016. Proponents of the change in the banking law argued that the credit market was inelastic and that interest rates were not being determined by market forces. However, the introduction of interest rates capping was effected amid warnings by the World Bank, International Monetary Fund (IMF) and other international institutions of the negative effects of the interest rate caps on the economy (Kingori, 2016).

Interest rate is the amount of money due per period, as a proportion of the amount lent or deposited (Celebi & Honig, 2019). The total interest on an amount lent or deposited depends on the principal sum, the interest rate, the compounding frequency, and the length of time over which it is lent or deposited (Harun, Ilhan, & Alper, 2014). Interest rate is also defined as fee charged by a lender to a borrower for the use of borrowed money, usually expressed as an annual percentage of the principal; the rate is dependent on the time value of money, the credit risk of the borrower and the inflation rate among others (Brock & Rojas, 2000). Chirchir, (2012) terms interest rates as the annual price charged by a lender to a borrower in order to obtain a loan. This is usually expressed as a percentage of the total amount loaned.

Conventionally, the interest rates applicable in a country are determined by the interest rate regime in the economy. There are generally two regimes; the fixed and the free (floating) interest rate

regimes. The fixed interest regime applies where interest rates are capped and are not determined by the market. Conversely, free interest regime implies that interest rates are determined by the market forces of demand and supply (Sambiri, 2014). According to World Bank (2014), most governments across the world adopt a mix of fixed and floating interest regime. A fixed interest rate regime mainly uses interest rate cap to achieve desired interest rates. According to IFC (2013) interest rate capping refers to a regulatory mechanism aimed at determining "*fair and reasonable interest rate"* on loans and deposits. It is a mechanism that has been adopted widely so as to protect the welfare of the consumers.

A study by Miller (2013) reported that about 40 developing and transitional countries had interest rate ceilings in place. In European Union member countries, 14 states had a form of contractual interest rate ceiling in 2010, while 13 had no interest rate caps (Helms & Reille 2004). OECD (2018) indicate that in major global economies like Canada, Italy, US, Japan, France and United Kingdom, long term interest rates are mainly determined by the price charged by the lender, the risk of the borrower and the fall in the capital value. In these countries, short term rates are determined by market forces whereby central banks, in their role as regulators, cap the rates through monetary policies (OECD, 2018). In their study covering 193 countries around the world, World Bank (2014) found that at least 76 countries, say 39%, were using various forms of interest rate caps on loans. These controls had varying degrees of effects, including the withdrawal of financial institutions from specific segments of the market and an increase in the total cost of the loan through additional fees and commissions.

Contributing to the foregoing debate, World Bank (2012) reported that interest rate capping is adopted by countries for varying reasons. In 2009, Spain put in place interest caps so as to prevent the exploitation of its consumers while Belgium, Poland, the Slovak Republic, and the United Kingdom hoped to protect the consumers from predatory lending and excessive interest rates. In Estonia, the purpose of the interest rate caps was to reduce over-indebtedness while in the Netherlands, it was meant to decrease the risk-taking behavior of credit providers. Other developed countries have at varying times adopted a form of maximum level of interest rates including France, Germany and the USA. In these countries, there was a domination of interest rates caps after the financial crisis in 2008 targeting loan sharks, predatory lending practices and growth of payday loan companies (Miller, 2013).

In the recent past, many countries in Africa have used interest rate caps. In 2012, Zambia's authorities introduced caps to counter the perceived risk of over indebtedness and the high cost of credit (IFC, 2013). According to World Bank (2014) Morocco, Tunisia, Algeria, Libya and Egypt used interest rate caps mainly in the microfinance sector where ceilings were set typically around 3-5% per month. In West Africa, Benin, Burkina Faso, Cote-d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo signed up to an interest rate limit of 27% per annum for microloans. Similar caps are used across South Asia; in Bangladesh, for example, microloans are capped at 27% per annum to support rural borrowers and the agricultural sector (Miller, 2013).

In Kenya, interest rate capping is not a new phenomenon since it had been in place in the period prior to interest liberalization in 1991. Before 1991, interest rates on bank loans were set not higher than 16% per annum. However, following interest rate liberalizations in 1991, the determination of interest rates was left to market forces which saw bank lending rates rise steadily to a high of 32% per annum in April 1994. This period was characterized by high implicit costs of credit (CBK, 2017). Sambiri (2014) further observes that the period between 1992 and 2015 witnessed a lot of macroeconomic and financial instability. The trend presented in figure 1.1 provides a historical perspective following rate liberalization in 1991.

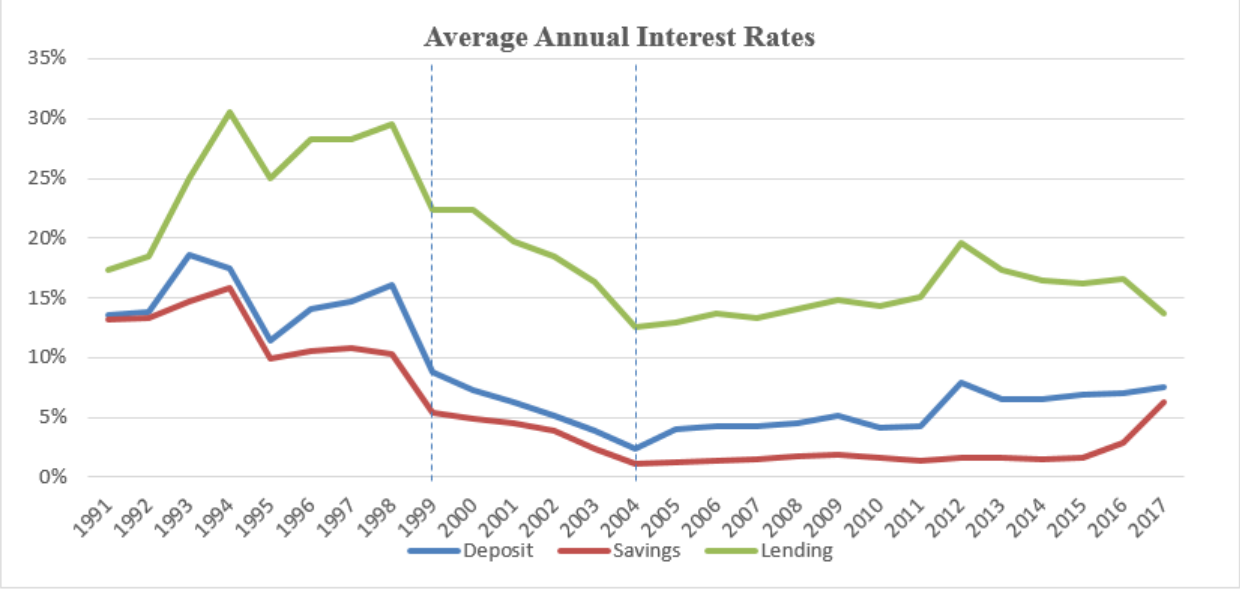

Figure 1.1: Average Interest Rates in Kenya

Source: Central Bank of Kenya Interest rate tables (2018)

Figure 1.1 above, clearly shows a phenomenon of rising interest rates from 1991 that peaked in 1998, giving rise to numerous debates and widespread concerns about the cost of loans in Kenya. Thus, following a decade-long campaign by lawmakers, Kenya passed an amendment to the Banking Act in 2015 that specified the maximum interest rates on loans and minimum interest rates payable on deposits from September 2016. The introduction of interest rate capping reopened an old debate over the appropriateness of regulatory interventions to capping bank interest rate on loans that are deemed by policymakers to be excessively high. The new law put a cap on bank interest rate on loans at 4.0% above the Central Bank Rate (CBR) and placed a floor on the deposit interest rates at 70% of the CBR. The rationale of the capping of interest rates was to have a capping-led economic pattern that was expected to yield great positive effects to the society.

Though interest capping is hypothesized to stabilize bank interest rates, it has received considerable criticism that has mostly pointed out the resulting negative side effects (Republic of Kenya, 2015). Supporting interest rate capping, Otieno (2016) opined that capping interest rates in Kenya was a greater constitutional and democratic step for the country. The cap was expected to lead to greater economic outcomes of double-digit economic growth, achieving Kenya's Vision 2030 and the 2030 global sustainable development goals as well as the Africa Agenda 2063. In addition, capping interest rates was meant to instill banking discipline and bring about flexibility in interest rates (Otieno, 2016).

Interest rate caps have also been established to protect consumers from usury and exploitation by guaranteeing access to credit at reasonable interest rates and to facilitate prosecution of exploitative and deceptive lenders. They can also help protect the public interest by ensuring a fair and reasonable interest rate on loans (OFT 2010). Interest rate regulation also affects the performance of the economy in terms of business profitability, the level of investment, lending and borrowing behaviour, competition in the banking industry, economic performance, shadow banking systems, liquidity, flow of foreign capital, development of small-scale business, exchange rates and inflation (Okoth, 2014). Outside the intermediation role that is played by the banking sector, a keen look at other sectors that could be impacted by interest rate regulations suggests that the capital markets are likely candidates on account of their disintermediation role. Evidently, interest rate capping would be expected to affect the performance of the capital market. This fact is better explained by examining the transmission mechanism of interest rates in an economy.

A useful framework for informing an inquiry into the outcome of interest capping is an examination of traditional interest rate channel with the hypothesis that real, rather than nominal, interest rates influence investment, spending on new housing, consumer spending, and aggregate demand. Under this framework, decreases in real interest rates tend to lower the cost of borrowing by households and businesses, resulting in greater investment spending, which leads to an overall increase in aggregate demand. The essence of these processes is captured aptly by an abridged version of interest transmission model that was developed by the European Central Bank in 2019 as shown in figure 1.2 below.

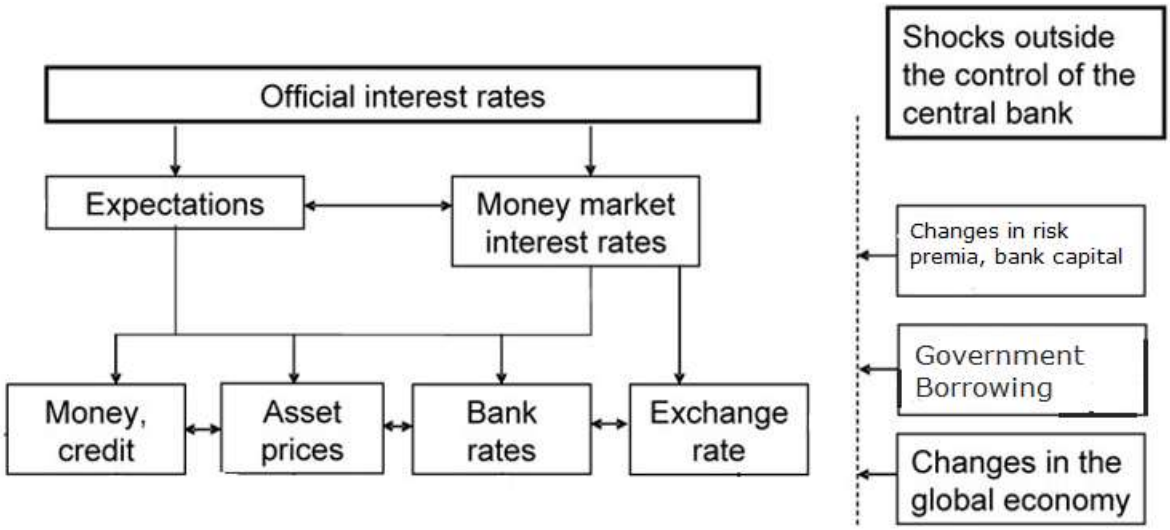

Figure 1.2: Expected Transmission Mechanism of Interest Rates in the Economy

Source: European Central Bank (2019)

The model in figure 1.2 above suggests that a change in official interest rates is deemed to directly affect money-market interest rates and interest rates on loans and deposits which are set by banks to their customers considering competition and risk levels. This triggers expectations of changes in interest rates which affect the investment behavior of investors. Higher interest rates make it less attractive for households and businesses to take out loans for financing consumption or investment because of the increased risk that borrowers may be unable to pay back their loans. This dampens asset prices. As equity prices fall, households may reduce consumption. Banks may cut back on the amount of funds they lend to households and firms. This may also reduce the consumption and investment by households and firms respectively. Consumption and investment

are also affected by movements in asset prices via wealth effects and effects on the value of collateral. Conversely, as equity prices rise, share-owning households become wealthier and may choose to increase their consumption.

Under interest rate capping regime, a country's central bank determines the official interest rate. Interest rate capping may reduce banks appetite to lend affecting credit availability and money in circulation and thus reducing demand for goods and services (European Central Bank, 2019). Outside the control of Central Banks, the European Central Bank (2019) postulates that the transmission of changes in interest rates are affected by changes in the risk premia; government borrowing and changes in the global economy. Foreign government borrowing reduces pressure on local currency and thus exchange rate. During repayment of foreign currency dominated loans, depreciation of local currency takes place and thus driving inflation (Ganatra, 2015). Fiscal policy like government borrowing also affects interest rates. Domestic government borrowing reduces the amount of credit available and thus reducing supply of credit and exerts pressure on interest rates to go up.

From the foregoing, it can be deduced that an aspect that may deserve attention in the realm of interest rates and capping of interest rates is the performance of capital markets as a source of business investment capital and form of investment assets. This is also based on the fact that traded capital market assets are in many ways closely related and complimentary to banking sector funds.

In a market-based economy like Kenya, the capital markets play a key role in facilitating the movement of capital from segments with surplus funds to those that are deficient; while by-passing the banking sector. This is a critical function in promoting economic growth. The capital market is largely made of equities, debt and derivative markets (Celebi & Honig, 2019). On account of the fact that the derivatives market is not developed in Kenya, this study is designed to examine the asset prices of the main segments of the capital market: equities and debt markets. An appreciation of the relative sizes of the financial markets and capital markets in Kenya can be seen from the data in table 1.1 below that shows key volume statistics.

Table 1.1: Selected Indicators of the Sizes of Financial and Capital Markets in Kenya

KES Billions, December	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Bank Loans	1,497.1	1,881	2,091.4	2,182.6	2,013.6	2,327.6
Bank Deposits	1,909.0	2,292.2	2,485.9	2,618.4	2,900.0	2,558.2
Equities Market Capitalization	1,894.2	2,242	2,522	1,931.61	2,521.77	2,211
Debt Market Capitalization	1,633	1,816	1,523	1,869.53	2,145.99	3,683

Source: Central Bank of Kenya (2018)

Analysis of table 1.1 above shows the relative sizes of bank loans, bank deposits, quoted equities capitalization and quoted debt capitalization in Kenya. The statistics indicate that financial and capital markets are substantial compared to a gross domestic product of about Shs 8.6 trillion in 2018: demonstrating their importance in the economy.

In Kenya, the equity market performance has traditionally been measured by the NSE 20 Share price index. However, the index has been criticized as not being an accurate measure of performance of the stock market since it does not include all shares being traded in the market (Wanyoike, 2015). The above notwithstanding, and as is the case with numerous jurisdictions, the 20 share stock exchange index remains a useful measure of the performance of the equity markets. Kenya's stock exchange index is derived from a sample of representative companies. Currently, there are 61 listed companies grouped into Agricultural, Commercial, Telecommunication, Automobile, Finance and Investments, Manufacturing, Construction and Allied, Energy and petroleum, and Growth Enterprise Market Segment (Omar, 2015). Capital market contributes significantly to the economic growth in the country. It is the market where companies raise capital and generally resources move from sources with surplus to capital deficient segments. Capital markets are an invaluable source of capital for businesses. Celebi and Hönig (2019) provide a useful justification for examining the performance capital markets and opines that the behavior of a country's capital markets serves as a reliable indicator of national economic performance.

The capital market for debt capital in Kenya trades in listed debt securities that are either short term, medium term or long term. The debt market performance is normally measured by debt yield. Debt yield is a ratio of net operating income of the debt over the maturity period to the total loan value (Ihsan *et al*, 2015). An inquiry into the pricing of debt as depicted by debt yield would shed light into the role played by interest capping in the performance of the Kenya's capital markets.

1.3 Research Problem

It has been established that the performance of the capital market represents the economic position of a country at a particular period (Onyuma, 2012). Therefore, changes in the returns of the capital market is likely to imply that a country is experiencing significant changes in the performance of major sectors of the economy. This implies the need to understand the factors that affect the securities returns. An understanding of the underlying factors is a first step to influence the performance of the capital market which in turn influences the economic outcomes of individuals, households, corporates and the economy as a whole. Specifically, a number of studies, namely; Rozeff and Kinney (2014); Nkoro and Uko (2016) have shown that prevailing interest rates have a major influence on the performance of the capital market. Theoretically, interest rates caps are further established to not only control the interest rates but also capital market performance indicators.

Critics of interest rate capping like Miller (2013) argued that interest rate caps distort the market and prevent financial institutions from offering loan products to those at the lower end of the market that have no alternative access to credit. Interest rate capping is hypothesized by IFC (2016) to affect performance of the capital markets although this is yet to be adequately explored. According to Cytonn (2019), the stock market performance in Kenya has been on a declining trend closing at 18.0% in 2018 compared to the 28.4% gain in 2017 despite the implementation of the interest rate caps by the CBK.

Empirically, Celebi, and Hönig (2019) studied the impact of macroeconomic factors on the German stock market and established a significant positive relationship between interest rates and German stock market performance. Flannery and Protopapadakis (2012) also showed that capital market returns are significantly correlated with interest rates and inflation, while Khalid, (2017) studied the effects of interest rate on the stock market performance of Pakistan and established a unidirectional causality between interest rate regulations and capital market performance. Laeven (2003) found that financial liberalization measures, such as the elimination of interest caps, had positively affected small enterprises' access to finance and thus improving investments while Ellison and Forster (2006) observed a movement of investments to states with less restrictive lending. These findings relate well with studies conducted by Ndung'u, (2014) and Nandwa (2006) in Kenya which found that interest rate capping had a negative impact on stock market

performance. In a similar way, Addin, and Alam (2010) taking a case of Dhaka Stock Exchange, established that interest rate has significant negative relationship with share price. Using a vector error correction model and Johansen's cointegration technique Ratanapakorn and Sharma (2007) found that USA stock prices relate negatively to the long-term interest rate. On the contrary, Ihsan *et al*. (2015) found an absence of long-run relationship between interest rate controls and stock market returns. Sir (2012) found that interest rate changes led to short-term adjustments but no long-term dynamic movements of stock prices. Ganatra (2015) found that bond performance was not significantly influenced by the level of interest rates in the Kenyan market.

The above shows the dearth of empirical evidence in Kenya that explores the interactions between interest rates control and capital market performance. Though a number of studies are available on the same subject, they have mostly investigated interest rates in general without taking into account the interest capping effects. Therefore, existing literature does not provide a conclusive framework for understanding the effects of interest rate capping on the capital market performance. Additionally, there is a scarcity of studies conducted in Kenya since the passing of the interest rate capping law. Understanding the above is essential as the impact of interest rate on capital markets provides important lessons for monetary policy, risk management practices, financial securities valuation and government policy towards financial markets. This study was designed to address the following research question: what is the effect of interest rate capping on capital market performance in Kenya?

1.4 Research Objectives

1.4.1 General Objective

The main objective of the study was to determine the effect of interest rate capping on capital market performance in Kenya.

1.4.2 Specific Objectives

The specific research objectives of the study were to:

i. Determine the effect of interest rates on capital market performance in Kenya,
ii. Assess the effect of interest rate capping on capital market performance in Kenya,
iii. Assess the moderating role of government borrowing on the relationship between interest rates and capital market performance.

1.5 Research Questions

i. What is the effect of interest rates on capital market performance in Kenya?
ii. What is the effect of interest rate capping on capital market performance in Kenya?
iii. What is the moderating role of government borrowing on the relationship between interest rates and capital market performance?

1.6 Scope of the Study

This study was limited to Kenya's bank interest rates caps and capital market performance. Interest rates data comprised only the reported monthly average interest rates on bank deposits and bank loans. The equity market performance was measured by Nairobi Securities Exchange 20 Share Index at the end of every month. Debt market performance was measured by the monthly debt yield of debt securities trading at NSE. The study period was five years period from 2013 to 2018.

1.7 Significance of the Study

1.7.1 Significance to Policy Makers

With the ongoing debates on whether to scrap interest rate capping in Kenya, this study gives policy makers a better understanding of the impact of the interest rate capping on the capital market performance and thus investment environment in Kenya. This is motivated by the fact that the capital market performance provides a useful measure of the performance of the entire economy.

This study provides information to legislators on some of the unintended wider effects of the cap, thus assisting in making the decision on whether to scrap interest rate capping.

1.7.2 Significance to Investors and Market Practitioners

The study will enable investors to discern how the interest rate capping indirectly affects their returns as a result of the effects on the capital market performance under study thus help them in making optimal decisions. Knowledge of the relationship between interest rates and capital market performance will help in formulating capital raising strategies for business firms and investment decisions that will accommodate both anticipated and unanticipated changes in interest rate. Investors will be in a position to predict the outcomes of various market situations and thus minimize loses that may be incurred in the future as a result of changes in interest rate regulatory framework.

1.7.3 Significance to Theory

The study is of benefit to the academic community by providing a body of knowledge on the interest rate capping. This will serve as a basis for further research into effect of interest rate caps and their effect on capital market performance. The study has also recommended areas for further research, which can anchor future inquiry.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical and empirical literature relating to interest rate capping, equity market performance and debt market performance. This is done by examining different theories that underlie the subject of this study as well as discussing their proposition and implication to the research variables. This is followed by a review of related empirical literature with emphasis on the objective of the study, methodology and the expected results. The chapter finalizes with a summary and an overview of the proposed conceptual framework.

2.2 Theoretical Review

The study makes reference to Fisher Effect Theory, Efficient Markets Hypothesis, Keynes' Liquidity Preference Theory and Economic Theory. These theories have been used to bring out the expected theoretical relationship between interest rates capping and capital market performance.

2.2.1 Fisher Effect Theory

The Fisher Effect Theory was initially proposed by Fisher (1930) to explain the relationship that exists between inflation changes and the expected price of assets. The theory states that expected asset returns move one-to-one with expected inflation which is brought about by changes in real interest rates. The theory is applicable to any instrument that can serve to transfer wealth through time. These assets should also provide a hedge against unexpected inflation; thus the returns of the assets moves with expected inflation (Harun, Ilhan & Alper, 2014). The theory makes an assumption that in the fully expected situation, the change of nominal interest rate and inflation rate is one-to-one, the rising of a country's expected inflation rate will eventually lead to proportional rising of the country's currency deposit rates. The theory is however limited in that it does not seem to fully establish the relationship that exists between long-term expected inflation and nominal interest rate (Hatemi, 2011).

The theory's preposition to the study thus is that inflation acts a main determinant of stock market performance. Thus so as to control the interest rates, the government ought to put in place measures to stabilize inflation. Stable and low inflation will translate affect asset returns. Interest rate capping will not be effective as long as the country experiences high inflation rates. Acaravci et

al., (2011) established that real interest rates were essentially constant while nominal rates adjusted to any changes in expected inflation. The theory however fails to indicate the Fisher effect on specific industries in the economy hence the need to empirically determine this. The importance of the theory to the study is that it provides a framework of understanding what drives interest rates and thus raising the question on the effect of interest capping on stock market performance Kenya. High inflation coupled with capping will imply reduction in available funds for investments and investors' purchasing power and thus negatively affecting capital market performance through a reduction in demand of securities. However, this is likely to correct in long run if inflation increases at a higher rate than interest rates.

2.2.2 Efficient Markets Hypothesis

The theory was developed by Fama (1970) to explain the changes in the performance of securities trading in the securities markets. According to the theory, securities' prices reflect the information available to the investors. Efficient markets theory dictates that the price of an asset reflects all relevant information that is available on the intrinsic value of that asset. One of the arguments made in favor of the stock market is that it acts as an arena within which share values can be accurately or efficiently priced. If new information comes to the market with regard to a company's securities and its performance, it will be quickly and rationally transferred into the company's listed securities. Fama (1991) noted that market efficiency varies from weak form, semi strong form to strong form efficiencies. If stock markets were fully efficient, the expected returns from every stock would be the same and thus only unanticipated random information can cause share prices to deviate from the expected average yields.

The theory is based on the assumption that securities market are efficient and investors respond immediately to the information that is available. Critics of the theory argue that it is not supported by the evidence, which shows rather that investors are affected by herd instinct, a tendency to churn their portfolios, a tendency to under-react or over-react to news and asymmetrical judgements about the causes of previous profits and losses. Further, many alleged anomalies have been detected in patterns of historical share prices. The best known of these are the 'small firm' effect, the January effect and the mean reversion (Wei, 2007).

The implication of the theory to the study is that capital market performance as measured by the returns of both equities and debt securities returns will be determined by the information available. Thus, introduction of interest capping was unexpected information which was expected to reduce commercial banks profitability. The reduced commercial banks profitability was expected to be interpreted as reduced demand and returns on the commercial banks securities. This, according to the theory was expected to reduce capital market performance. The theory also supports use of event analysis to assess the relationship between interest rate capping and capital market performance.

2.2.3 Keynes's Liquidity Preference Theory

Keynes (1971) proposed the Keynes's Liquidity Preference Theory (LPT) to explain how interest rates are determined in a free market. The theory holds that low long-term rate of interest (less than double digits), is a precondition to economic prosperity and social advance. The theory assumes that people's demand for money is not for transactions purpose but for precautionary and speculative motives. Whereas the transaction demand and precautionary demand for money increase with income, the speculative demand is inversely related to interest rates because of the forgone interest. The theory argues that market forces of demand and supply should determine interest rates and interest rate capping may not be needed (Heijdra & Van der Ploeg, 2002).

Where there are market failures and the rules of demand and supply are not adequate to achieve equilibrium interest rates, LPT argues that he central bank should intervene by use of monetary policy, mainly money supply. However, due to the level of income in a country, monetary policy may not work leading to a liquidity trap. This is a situation, described by LPT, in which injections of cash into the private banking system by a central bank fail to decrease interest rates and hence make monetary policy ineffective. To correct this situation, LPT argues against interest rate caps and proposes other measures to boost employment and income in the country (Heijdra & Van der Ploeg, 2002).

Critics of Keynesian theory opine that the theory assumes a given level of income as the determinant of interest rate. Therefore, one cannot determine the rate of interest until the level of income is known and the level of income cannot be determined until the rate of interest is known (Amadeo, 2017). Thus, interest rate capping will not have a significant effect on the economy since interest rates is driven by level of income.

The implication of the theory in examining the effect of interest rate capping on the capital markets performance is that the effect of interest rate capping, if any, would be felt in short term but not in long term. According to the theory, the central bank would regulate the rate of interest and hence the price of financial assets. The higher the rate of interest, the lower the price of assets with given expectations, and the higher is the demand for money which will have adverse effects on the capital market performance. In the long run, the effect of interest capping will not affect the capital markets unless there is a change in the level of income.

2.2.4 Economic Theory

Stiglitz and Weiss originally introduced the Economic Theory in 1981 to explain how interest rates are determined and consequential effect on the economy. The theory holds that interest rates are pegged on the perceived risks on the loans and hence interest rates caps are not required. The theory argues that credit risk results from market imperfections that emanate from information asymmetry and the inability of lenders to differentiate between safe and risky borrowers. Therefore, when making a credit decision, a bank cannot fully identify a client's potential for repayment. Two fundamental issues arise namely; adverse selection and unable to differentiate (Stiglitz & Weiss, 1981). In adverse selection, clients that are demonstrably lower risk are likely to have already received some form of credit whereas those that remain will either be higher risk, or lower risk but unable to prove it. While in 'unable to differentiate', the bank will charge an aggregated rate which is more attractive to the higher risk client. This leads to a raised probability of default ex ante.

The theory makes the assumption that as interest rates and other terms of contract change, the borrower's behaviour is likely to change. Increase in the interest will result in decrease in returns in the transactions (Stiglitz and Weiss, 1981). The theory's importance is that interest rate caps will restrict the banks from managing credit risks thus resulting in a negative on banks decision to lend money and hence less funds available for investment in capital market. The theory sensitizes on proper credit risk managements by the commercial banks so as to stabilize the interest rates which mainly arise from the perceived risks on the loans. Further, the inability of banks to manage credit risk will result in commercial banks poor performance hence a decrease in the equity market performance. Thus, according to economic theory, commercial banks are crucial drivers of capital

markets performance. The capital market performance mainly depends on the ability of commercial banks to manage credit risk and not interest capping.

2.3 Empirical Review

Over the last couple of years, interest rate changes and capping has received a lot of attention from researchers and practitioners alike. This includes studies both locally and internationally that attempt to establish the effect of interest rates capping on various sectors, capital markets included.

2.3.2 Effect of Interest Rate Capping on Capital Market Performance

Pallegedara (2012) used secondary data to examine the dynamic relationships between stock market performance and the interest rates in Sri Lanka during a period of interest rate capping from June 2004 to April 2011. The all share price index in the Colombo Stock Exchange was used as a measure of stock market performance indicator and Sri Lanka interbank offer rate as a measure of interest rates. The researcher employed conventional time series econometric techniques namely Unit Root Test, Cointegration Test, Vector Auto Correction Model (VECM), Granger-Causality test and Impulse Response Functions (IRF) to examine the relationships between the stock market index and interest rates. These analyses established that stock market performance had no causal relationship with interest rates in the short run but found a negative correlation in the long run. The study recommended for scrapping of interest rate capping based on the premise that the short term gains were not sustainable in long run.

Thorbecke (2006) examined how stock returns react to monetary policy shocks in the United States. The study analyzed the effect of monetary policy changes on 22 industries over a long period: from 1953 to 1990. Using VAR estimations, the researcher observed that one standard deviation rise in the federal fund rate decreases nominal stock returns by an average of -0.80% per month.

Aziza (2010) studied the effects of interest rates policy on the stock market performance and how monetary policy shocks are transmitted to the stock market for both developing and developed countries. Using a comparative approach, the research also sought to investigate if the stock market reaction to money supply, interest rates on loans and inflation in developing countries is different from that in developed countries. It was observed that in developing countries, growth of money exerts negative shocks on stock market capitalization in Chile, India, Indonesia, South Africa and

Nigeria. There was no stable relationship between inflation and the interest rate on loans in Nigeria and New Zealand.

Macmillan (2009) also used cointegration analysis for the USA and Japanese stock markets between 1965 and 2005 to examine the long-term relationship to macroeconomic factors, namely industrial production, consumer price index, money supply and the long-term interest rate. For the Japanese stock market, the authors detected a positive impact of industrial production and a negative impact of the money supply on stock prices. Furthermore, these analyses showed that the consumer price index and the long-term interest rate have a negative effect on industrial production. For the USA stock market, the researcher reported a positive impact of industrial production and a negative impact of the consumer price index and the long-term interest rate on stock prices.

Ioannidis and Kontonikas (2008) analyzed the impact of interest capping policy on stock prices in several countries. They found a correlation between contractionary monetary environment and declining stock returns. Their sample included 13 OECD countries over the period from 1972 to 2002. By regressing nominal stock returns against changes in short-term interest rates, they reported that ten of the 13 countries within the sample had a statistically significant negative coefficient, which indicates a relationship between higher interest rates and lower nominal stock returns. After adjusting nominal stock returns for dividend payments, the strong negative relationship between them was not affected.

Uddin, and Alam, (2010) investigated the existence of market efficiency on the Dhaka Stock Exchange (DSE) based on the daily general price index from 1994 to 2005 and also the empirical relationship between stock index and interest rate in Bangladesh based on monthly data from 1992 to 2004. Employing ordinary least-square (OLS) regression, the study found a linear positive relationship between share price and interest rate, share price and growth of interest rate, growth of share price and interest rate, and growth of share price and growth of interest rate. For all of the cases, included and excluding outliers, it was found that interest rate has significant negative relationship with share price and growth of interest rate also has significant negative relationship with growth of share price.

Miller (2012) studied interest rate caps and their impact on financial inclusion. The study examined a number of countries that had introduced interest rate capping. The study designated interest rate

capping as an event and thus used event analysis to examine the effect on financial inclusion. The analyzed independent variable was interest rate capping on loans. One important finding in this study was that the amount of loans advanced decreased with introduction of interest rate caps.

Celebi, and Hönig, (2019) studied the impact of macroeconomic factors on the German stock market: Evidence for the crisis, Pre-and Post-crisis periods. Using a dataset on 24 factors and over a timeframe of about 27 years, the study found evidence that across most subsamples, the Composite Leading Indicator (OECD), the Institute for Economic Research (ifo) Export Expectations index, the ifo Export Climate index, exports, the Consumer Price Index CPI, as well as 3 year German government bonds yields show delayed impacts on stock returns. The results illustrate that in the crisis period a larger number of factors and economic indicators had significant impact on the stock market returns compared to the pre-and post-crisis periods. This implies that in the post-crisis period a macro-driven market prevails.

Khalid, (2017) studied the effects of interest rate on the stock market performance of Pakistan. The study analyzed the short-run together with the long-run interconnections between the aggregate market capitalization and macroeconomic variables by employing the econometric tools of Johansen approach, Error Correction Model (ECM) and then inspection of Variance Decomposition. Causal linkages were explored by the application of Granger-Causality test. The findings of the study were that there exists a unidirectional causality between interest rate regulations and stock market performance.

Suhaibu, Harvey and Amidu (2017) examining monitory policy and stock market performance found that the stock markets of the 12 African countries are positively affected contemporaneously by their respective monetary policies through the interest rate channel, but could not find evidence to the reverse reaction. The study then estimated impulse response functions and established that both money supply and real interest rate decline in response to positive and negative stock market shocks respectively, while inflation responds positively to a negative stock market shock. Of the two monetary policy stances considered (money supply and real interest rate), real interest rate was found to have the greatest influence on the stock market and inflation. Conversely, the stock market exerts greater influence on real interest rate than it does on money supply, therefore indicating a reverse relationship between monetary policy and the stock market.

Rachael and Moses, (2017) investigated the effect that interest rate capping has on the performance of stocks at the Nairobi securities exchange. Interest rate was operationalized into lending interest rate capping and saving interest rates capping. The target population of the study consisted of all the 61 company stocks. This study used secondary data which was obtained from the Nairobi Securities Exchange, Central Bank of Kenya and Kenya National Bureau of Statistics for a five year period from January 2012 to January 2017. The NSE All Share Index was selected as a representative of all the stock prices. Quantitatively data was presented in tables and figures while descriptive statistics like the mean and standard deviation were used to describe the data. Event analysis technique was used in establishing how interest rate capping affected stock market performance. The study found that interest rate capping had a negative effect on stock market performance in Kenya. Notably, the study was done less than a year since interest rate capping came into effect and therefore the findings could not be very reliable. While event analysis was used, regression analysis was omitted in spite of being a more reliable inferential tool. The study also failed to include moderating and moderating variables and therefore assumed that interest rate capping was the only variable affecting the NSE performance.

Adelegan and Radzewicz (2009) in their study on the effect of interest rates on bond performance, established that high level of interest rates tend to have a depressing impact on bond issuance and bond market development. This is mainly because very few firms are likely to service debts in the event that interest rates are high. However in the event that interest rates are variable, investors are likely to have some appetite for long-term fixed rate notes. The main reasoning of this the risk that the purchasing power of long-term fixed rate assets is likely to face erosion. In addition, the fluctuations in world interest rates play a very special role in influencing interest spreads. This is largely attributable to lowering of the cost of funding imminent for international bond investors while at the same time affecting the cost of financing when it comes to emerging sovereign markets.

Smales (2012) carried out a study in the Australian market to examine how interest rates affect performance of bonds. In his study, it was established that interest rates affect the performance of bonds. The researcher further established that right after a scheduled macroeconomic announcement, the sensitivity to order flow went up in the Australian interest rate futures market. This was attributed to an increase in the level of information asymmetry. In a related study in Kenya, Ganatra (2015) sought to determine the factors that affected the performance of the

KENGEN bond between 2010 and 2015. The study revealed that there was a negative insignificant relationship between interest rates and performance of the KENGEN bond. This implies that the performance of KENGEN's bond was negatively influenced by the level of interest rates in the Kenyan market.

2.3.2 Government Borrowing, Interest Rates and Capital Market Performance

The review of empirical evidence in this section focuses on the relationship between interest rates, government borrowing and stock market performance. This is done for a wide spectrum of studies and countries.

Pallegedara (2012) examined the dynamic relationships between stock market performance and the government expenditure in Sri Lanka during June 2004 to April 2011. He used all share price index in the Colombo stock exchange as a measure of stock market performance indicator and Sri Lanka interbank offer rate as a measure of interest rate. He employed some conventional time series econometric techniques namely Unit root test, cointegration test, vector auto correction model. The findings were that government expenditure was negatively associated with stock market in the long run while no causal relationship was found in the short run.

Graham, Leary and Roberts (2014) examined how government borrowing affects corporate financing and investment. Using a novel dataset of accounting and market information spanning most publicly traded nonfinancial firms over the 20th century, the study showed that U.S. federal government debt issuance significantly affected corporate financial policies and balance sheets through its impact on investors' portfolio allocations and the relative pricing of different assets. Government debt was found to be strongly negatively correlated with corporate debt and investment, but strongly positively correlated with corporate liquidity.

In a cross-country study, Lee (2015) investigated whether financial policy affects stock markets in Belgium, France, Germany, United Kingdom and the USA using Granger causality test, Vector Error Correction Model (VECM) and vector autoregressive estimates (VAR) techniques. The study employed quarterly data on stock prices, Federal budget deficits, money supply and industrial production from 1974-1998. Empirical results of the study revealed that the stock market in Belgium did not fully capture and reflect publicly available information on financial policy

proxies by government budget deficits unlike in the other countries where financial policy significantly affected aggregate stock prices.

Omondi and Olweny (2011) sought to investigate the effect of macro-economic factors on the stock return volatility on the Nairobi Securities Exchange. The study focused on the effect of foreign exchange rate, interest rate and government expenditure fluctuation on stock return volatility. Monthly time series data for a ten years period was used. The main findings of the study were that corporate financial performance were symmetric but leptokurtic and not normally distributed. Government expenditure fluctuations were found to influence inflation which in turn influenced interest rates and stock market performance.

2.4 Summary of Literature Reviewed and Knowledge Gap

The theory and evidence on the rationale and effect of capping of interest rates is fairly wide as has been the debate over the appropriateness of this regulatory intervention. Theoretically, interest rate caps are established to directly influence interest rates that should in turn eventually have knock-on effects on other sectors of the economy on account of the inter-connectedness of the economy. A closely connected sector is the capital market in its source for disintermediated finance for business firms and assets for investors. Critics of interest rate capping argue that interest rate caps distort the market and prevent financial institutions from offering loan products to those at the lower end of the market that have no alternative access to credit. This consequently hurts the low income segments that the government aims at protecting.

Literature reviewed in this study does not provide a conclusive framework for understanding the effect of interest rate capping on capital market performance in the Kenyan economy. Additionally, there is scarcity of studies conducted in Kenya since the passing of the interest rate capping law in 2016. Indeed, available literature is not sufficient to explain whether the capping of interest has had a positive or negative effect on the capital market performance as depicted by asset prices.

The study reviewed four theories: Fisher Effect Theory, Efficient Market Hypothesis, Keynes's Liquidity Preference Theory and Economic Theory. The theories provide conflicting suppositions on how interest rate capping is likely to affect capital market performance. Furthermore, empirical literature does not provide conclusive information on the underlying relationship between interest rate capping and capital market performance. For instance, Miller (2012) found that the amount of

loans advanced reduced with introduction of interest rate caps. Pallegedara (2012) concluded that stock market performance was negatively associated with interest rate capping in the long run while no causal relationship was found in the short run. After introduction of the rate cap, Mbua (2017) found that share prices for the banks dropped significantly meaning that interest rates were a factor that affected the decision to invest in bank shares. Nganga (2017) and Munguti (2017) also obtained related findings.

Supporters of interest regulation in Kenya argue that capping the interest rates was vital since interest rates were not market responsive despite the measures formulated by the Central Bank's Monetary Policy Committee. Theoretical underpinnings present contradicting implications on the capital market performance in Kenya. However, there is no conclusive empirical literature in Kenya detailing how interest rate capping affects the capital markets. This creates a knowledge gap that this study aims to address by undertaking a study on effects of interest rates capping on capital market performance in Kenya.

2.5 Conceptual Framework

The conceptual framework that was developed for this study is depicted diagrammatically in figure 2.1 below to answer the research questions in 1.4 above by presenting the variables of concern as informed by the foregoing literature review. The independent study variable was interest rate capping which was operationalized by two variables: interest rate on bank loans and interest rates paid on bank deposits. On the strength of the literature reviewed, government borrowing was identified as a moderating variable. The dependent variable, capital market performance, was measured by equity market performance and debt market performance.

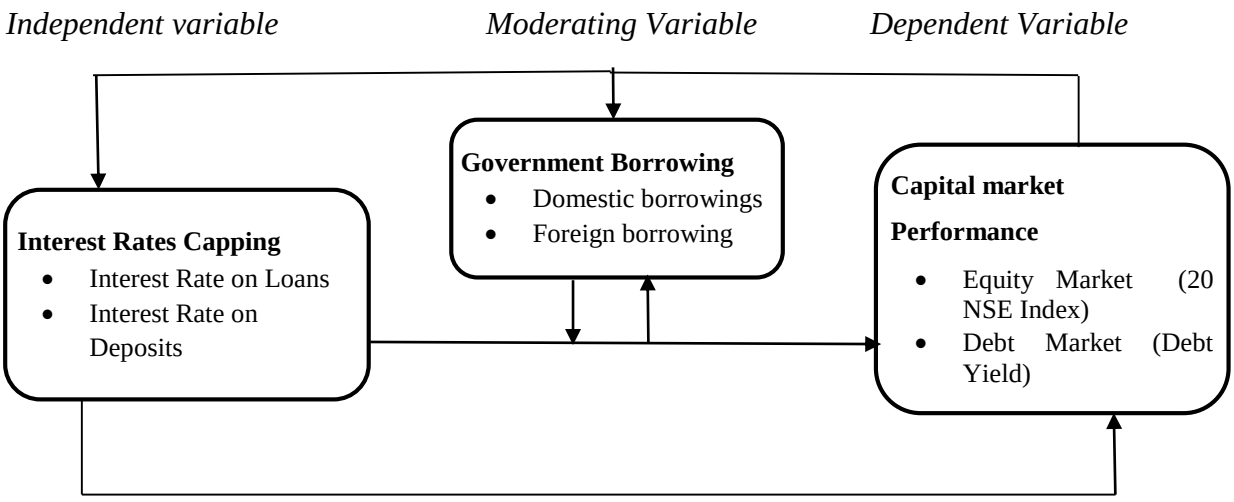

Figure 2.1: Conceptual Framework

Source: Researchers Own Conceptualization (2019)

2.5.1 Interest Rates capping

Interest rate capping is used by governments to achieve desired interest rates without consideration of the market forces. This is done where a government has identified a market failure in a certain industry that results in an imbalance in the distribution resources; it therefore pre-determines the interest rates to force a greater focus of financial resources on the underprivileged sector. Interest rates are made of four components, which assess the appropriateness of an interest rate cap as a policy instrument, or whether other approaches would be more likely to achieve the desired outcomes of government. The components include commercial banks' profits, non-performing loans, overheads and cost of credit (Miller, 2013). For this study, interest rate capping on loans and deposits will be the regarded as the independent variable. According to the conceptual model in 2.1 above, capped interest rates are presumed to have a direct and moderated influence on stock/debt prices in the stock exchange.

2.5.2 Government Borrowing

Government borrowing from the domestic market has an effect of reducing liquidity in the local market and thus spur interest rates from the scarcity created (Lee, 2015). It reduces the amount of funds available to private sector, the amount available to invest in capital market and hence reduced performance of the market (Kwadwo *et al.,* 2016). Government borrowing from foreign markets is expected to ease liquidity strain from the local market and hence expected reduced borrowing and increased amount available to invest in local market. In the conceptual model for this study,

government borrowing is presumed to moderate the influence of interest rates on capital market performance, which in turn exerts a reverse influence on the government debt and interest rates.

2.5.2 Capital Market Performance

Interest rate caps in this study are hypothesized to affect the capital market performance. Capital market is a measure of overall economic performance and provides businesses with access to capital, provides access to vital information about companies and the potential gains based on the firm's future performance for secondary investors (Osoro, 2013). This study specifically examined equity and debt market performance.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the research methodology that was applied in the study. The chapter covers the research design, study population, sampling design, and data collection methods and finalizes with the data analysis and presentation of the findings.

3.2 Research Design

This study adopted an explanatory research design to enable making of valid conclusions and to accurate portray the characteristics of the study variables. Also, the eexplanatory research design enabled collection of data that explained the effects of interest rates capping on capital market performance. The advantage of this design was that the researcher was able to use various forms of data to achieve the study objectives. Inferences concerning the dependent and independent variables of the study were made. This design also allowed quantitative analysis of the study data and is consistent with the research methodology adopted by Miller (2013), Nganga (2017) and Munguti (2017).

3. 3 Target Population and Sampling

The target population comprise the elements or components that are of interest to the researcher and conform to similar specifications (Mugenda & Mugenda, 2008). In this study, the target population was all the listed companies in Kenya's stock exchange. As at 31st December, 2018, there were 67 listed companies in Kenya (NSE, 2018). Due to the study population being small and therefore manageable, the study adopted the census approach so as to incorporate all the 67 listed companies. This was in line with Gay (2003) who recommends that where the target population is less than 100, the whole population should be included in the study and a census survey undertaken. It is to be noted that a census-based study as opposed to a study based on a sample avoids the problem of generalizability.

3.4 Data Collection Methods

This study used secondary data only. The data was obtained from the Central Bank of Kenya database and Nairobi Securities Exchange (NSE). The data that was collected from the Central Bank of Kenya related to interest rate on bank loans, interest rate on bank deposits and the volume of government borrowing while the data collected from NSE was the 20 Share Index and debt

securities yield. Monthly data for both the independent and dependent variables was obtained for the period before and after the interest rate cap- from 2013 to 2018. Related studies, which used secondary data to achieve similar study objectives are by Nicaragua *et al.* (2012) and Pallegedara (2012). In addition, studies that measured interest rates capping using a similar approach include Mbua (2017), Nganga (2017) and Munguti (2017).

3.5 Data Analysis and Presentation

Kothari (2004) states that data analysis is the process of systematically applying statistical and logical techniques to describe data. The secondary data obtained for this study was entered into STATA version 15 and SPSS version 22.

Descriptive analysis comprising means and standard deviation was used to describe the study data and allude to the study relationship. Panel data was used to determine the relationship between the interest rates, interest rate capping and capital market performance. The results were then presented in tables from which the interpretations were drawn. The monthly data was analyzed for the period of six years.

In a related study that examined the effect of interest rates capping on the banking sector, Mbua (2017) applied simple linear regression analysis and used event analysis to test the hypothesis that various capital market performance indicators before the interest rate capping were not different to those after the interest rate capping. Munguti (2017) also used event analysis to determine the impact of interest rate capping on the stock returns of commercial banks listed at the Nairobi Securities exchange.

To test the direct relationship between interest rates and stock market performance, the following model was used:

$$Y_t = \beta_0 + \beta_1 X_{ilt} + \beta_2 X_{ibt} + \varepsilon \qquad \textit{(Equation 3.1)}$$

To determine the moderating relationship of government borrowing on the relationship between interest rates and capital market performance, the below model was used:

$$Y_t = \beta_0 + \beta_1 X_{ilt} + \beta_2 X_{ibt} + \beta_3 X_{gbt} + \varepsilon \qquad \textit{(Equation 3.2)}$$

To determine the effect of interest rate capping on capital market performance, a dummy variable reflecting the interest rate capping was introduced for the period after interest rate capping. Panel model was then be applied on the model as below.

$$Y_t = \alpha + \beta_0 + \beta_1 X_{ilt} * Cap + \beta_2 X_{ibt} * Cap + \varepsilon \quad \textit{(Equation 3.3)}$$

Where:

Y_t = capital market performance (equity and debt) at time t

X_{ilt} = interest rates on bank loans at time t

X_{ibt} = interest rates on bank deposits at time t

X_{gbt} = government borrowing at time t

$ß_0$ = constant

$ß_n$ = coefficient of the independent variable

ε = Error term

The study variables were operationalized as shown in table 3.1 below.

Table 3.1: Operationalization of the Study Variables

Objective	Hypothesized Relationship	Measurement	Analysis
To determine the effect of interest rate on capital market performance	Interest rates significantly affects capital market performance.	Monthly interest rates on deposits, Monthly interest rates on loans, NSE 20 Share index, debt yield	• Descriptive statistics including the mean and standard deviation • Panel analysis
To assess the effect of interest rate capping on capital market performance in Kenya	Interest rate capping is expected to affect capital market performance.	monthly interest rates on deposits, monthly interest rates on loans, NSE 20 share index, debt yield	• Descriptive statistics which include the mean and standard deviation • Event analysis • Panel Data
To assess the moderating role of government borrowing on the relationship between interest rates and capital market performance	Government borrowing affects interest rates and capital market performance.	Monthly local and domestic borrowing, NSE 20 Share index, debt yield.	• Descriptive statistics which include the mean and standard deviation • Panel data model

3.6 Research Quality

To ensure reliability of the study results, statistical inferencing was done where the results were evaluated using various inferential analysis. Analysis of Variance (ANOVA) and coefficient of determination was used to draw inferences on the significance of the study results. Specifically, Analysis of Variance assisted the researcher to assess the overall model adequacy by testing the variability of capital market performance associated with the interest rate capping as shown by panel data analysis. The t-test and the F-test statistics were used to test which of the independent variables have more predictive power. These analyses are in line with similar approaches by Nicaragua *et al.* (2012), Pallegedara (2012), Mbua (2017), Nganga (2017) and Munguti (2017). To determine the nature of the panel data and assess the best model for analysis from random and fixed effects, Hausman test was used.

3.7 Ethical Issues in Research

Ethics are norms or standards of behavior that guide moral choices about our behavior and relationship with others. The goal of ethics in research is to ensure that no one is harmed or suffer adverse consequences from research activities. Unethical activities include: plagiarism, breaking respondents' confidentiality, misinterpretation of results, avoiding legal liability among others (Cooper & Schindler, 2006). Mugenda and Mugenda (2003) opine that ethics are rules of conduct or set of principles that are used in conforming to the conduct of a given professional group.

Ethical standards were observed in conducting the study. Plagiarism in the research was avoided by citing all sources of information and data used in the study. The study also acknowledged all the individuals and organizations who have played a role in the study. The study also sought permission for data collection from the university and organizations that own the data. The results presentation and interpretations were done objectively and avoid any misrepresentations.

CHAPTER FOUR: DATA ANALYSIS, RESEARCH FINDINGS AND INTERPRETATIONS

4.1 Introduction

This chapter represents the analysis, findings and interpretations of the study on the effect of interest rate capping on capital market performance in Kenya. The analysis is based on the secondary monthly data the six years period from 2013 to 2018. Whereas ddescriptive and inferential statistics were used to interpret the results of the study, tables and graphs were used for presentation of findings.

4.2 Description of Study Variables

This section sought to describe the research variables and to establish any particular trends over the six year study period in Kenya. The research variables investigated included interest rate trends, government borrowing trends, trends in NSE-20 Share Index and trends in debt yield.

4.2.1 Interest Rate Trends

The data on interest rate trends comprise the average monthly interest rates on loans and average interest rate on bank deposits which was collected from the Central Bank of Kenya over the study period. The findings are presented in figure 4.1.

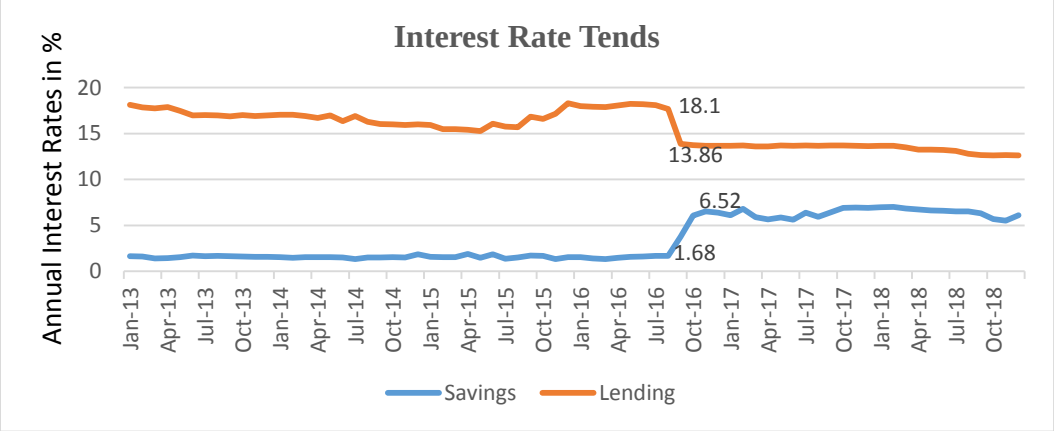

Figure 4. 1: Bank Interest Rates Trends in Kenya

Figure 4.1 above shows that prior to the imposition of the interest rate cap, the average monthly interest rate on bank loans had been experiencing an upward trend, rising from an annual rate of 15.75% in July 2015 to 18% in January 2016 where it remained relatively constant until October 2016 when it drastically dropped to 13.86% representing a 1.89% drop. Thereafter, the average interest rate on loans remained stable albeit with a slow decrease to close at an annual average of 12.67% in December 2018. The drop in October 2016 and subsequent continued stability of low interest rate on bank loans was attributed to the interest capping introduced in the 3rd quarter of 2016. This comprised a cap on interest rate on loans at 4.0% above the Central Bank Rate and a floor on the rate of deposits at 70% of the CBR (Cytonn, 2017). The average interest rates on bank deposits have been both low and stable over the study period. The average annual deposit rates increased steadily to 1.68% in July 2016 and rose sharply to 6.52% in October 2016. Thereafter, deposit interest rates remained stable to close at 6.1% in October 2018.

The interest spread provides useful insights on the behavior of interest rates before and after the capping in Kenya. As expected, the interest spread reduced substantially from an annual average of 10% prior to the interest rate capping to an annual average of 7% after the interest rate capping. Table 4.1 below provides additional indicators of the relative stability of interest rates in Kenya over the study period.

Table 4.1: Standard Deviation of Interest rates in Kenya during the Study Period

Period	Loans	Deposits	Interest Rate Spread
Before Capping	1.108	0.440	1.259
After Capping	0.464	0.422	0.597

With respect to loans, deposits and interest rate spreads, the capping of interest rates in 2016 introduced pricing stability in the banking sector. In the three cases examined, the variability of interest rates, as depicted by the standard deviation, fell after the introduction of the interest caps.

4.2.2 Government Borrowing Trends

The trend in government borrowing was measured using monthly local and domestic borrowing. The findings obtained are shown in figure 4.2 below.

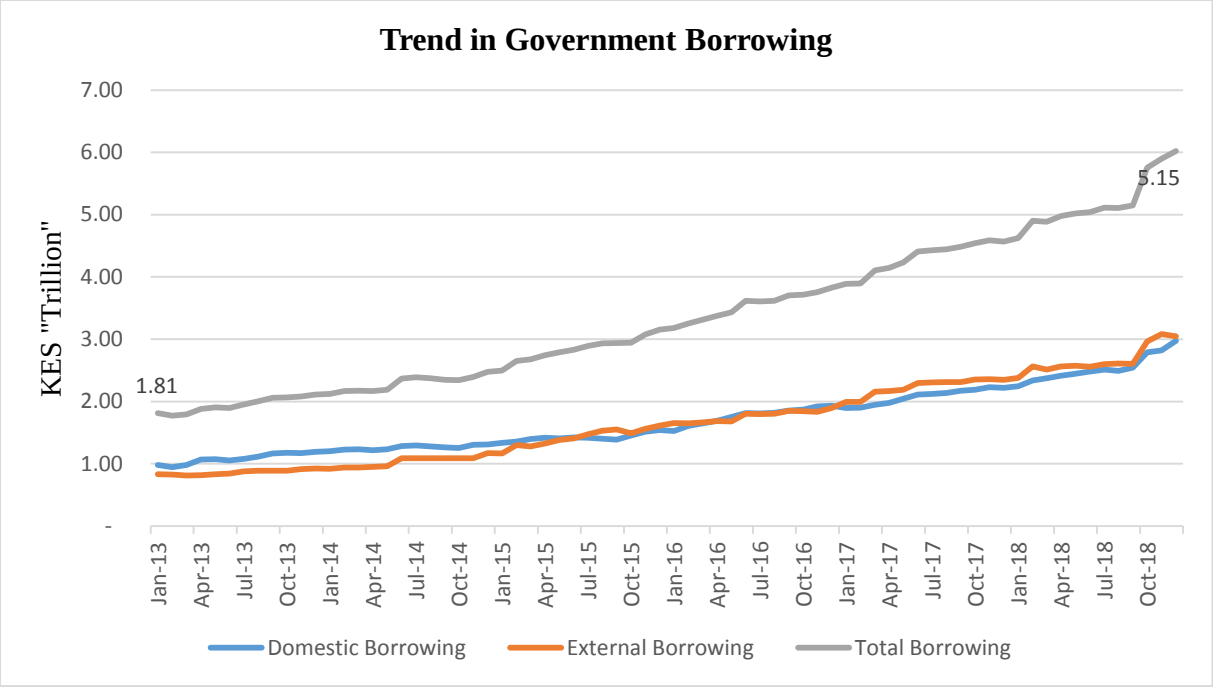

Figure 4. 2: Government Borrowing Trends in Kenya

The above analysis indicates that the total government borrowing has been on a steadily increasing trend over the study period from a low of Ksh 1.81 Trillion in January 2013 to Ksh 5.15 Trillion in October 2018 signifying a 184% increase in government borrowings. This implies that Kenya's economy continues to depend on borrowing to finance its capital projects as evidenced by increasing volumes of treasury bills, bonds and central bank overdraft.

4.2.3 Trends in Debt Yield

The returns on capital debt instruments were measured using monthly average yields over a six years period (2013- 2018). The results are shown in Figure 4.3 below.

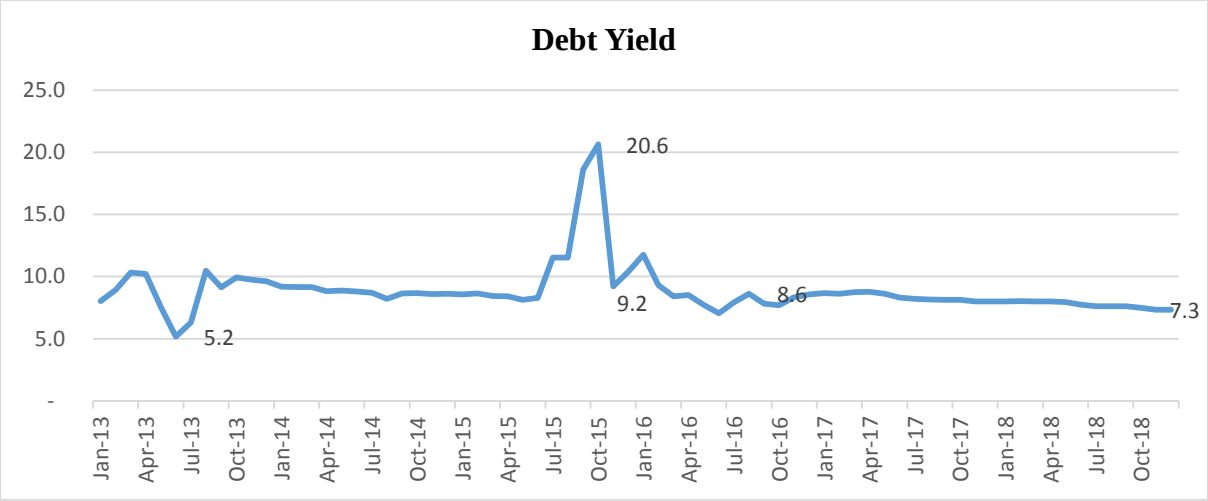

Figure 4. 3: Trends in Annual Capital Market Debt Yield in Kenya

Figure 4.3 indicates that the returns to capital market debt have been stable over the six years period with exception of July to October 2015 period when a spike was recorded peaking with a debt yield of 20.6% in October 2015, but with a sharp drop two months thereafter. The sharp rise in debt yield in 2015 was as a result of reduced liquidity in the domestic market on account of a sudden increase in government domestic borrowing. The introduction of interest rate capping in September 2016 saw the debt yield drop slightly from 8.6% to 7.8%. This pictorial presentation does not indicate any unusual movement on debt returns with introduction of interest rate capping.

4.2.4 Trends in NSE-20 Share Index

The stock price performance was measured using the NSE-20 Share Index which is a price weighted index calculated as a mean of the top 20 best performing counters. The constituent companies are selected based on a weighted market performance during the period under review. The trend in the index over the study period is presented in Figure 4.4 below.

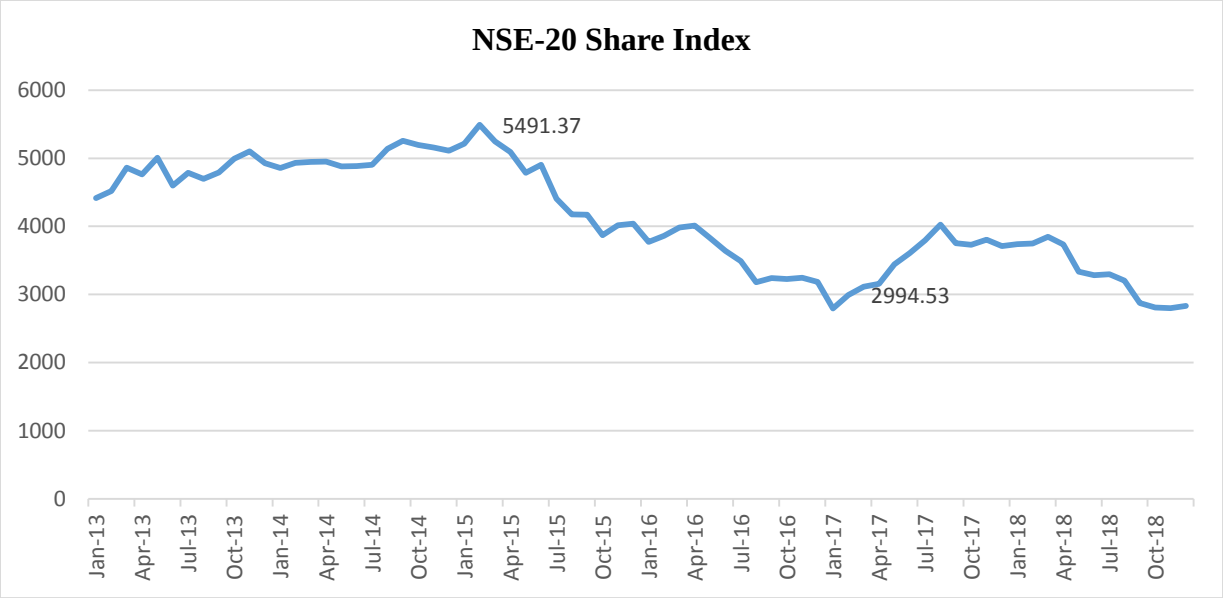

Figure 4. 4: NSE-20 Share Index Trends

Figure 4.4 indicates that the NSE-20 Share Index has been experiencing a downward trend from a high of 5491.37 in January 2015 which thereafter dropped substantially to 2994.53 in January 2017 then rose slightly to 4000 in July 2017 and fell again to close at 2833.44 in October 2018. This fluctuation and notable drop in the NSE-20 Share Index may be due to the initial mention of the banking act amendment in 2015. However, Amenc (2010) argued that most stock indices are highly inefficient and these indices are not comparable to the mean variance optimal portfolios since they lie below the efficient frontier.

4.3 Hausman Test

Hausman Test was used to determine whether the model had random and fixed effects and thus determine the model panel to use. The null hypothesis for Husman Test was that the preferred model has random effects; the alternate hypothesis was that the model had fixed effects. The findings from this analysis are presented in table 4.3 below.

Table 4.3: Hausman Test

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Lending_Ra~s	-54.5898	-142.0144	87.42456	27.40874
Saving_Rate	-1.198197	-30.55273	29.35453	.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 6.74
Prob>chi2 = 0.0344

The analysis displayed above showed a p-value of 0.0344<0.05 which meant that the hypothesis that the model depicted random effects was rejected. Thus, the model data depicted a fixed effects meaning that the analysis should be done using fixed effects model.

4.4 Panel Data Analysis

Panel data analysis was used to achieve the study objectives as discussed below.

4.4.1. Effect of Interest Rates on Equity Market Performance

The study hypothesized that interest rate affected the stock market performance. The panel data results obtained to test this hypothesis are presented in table 4.4 below.

Table 4.4: Panel Results on the Effect of Interest Rates on Equity Market Performance

```
Fixed-effects (within) regression               Number of obs      =        72
Group variable: Month                           Number of groups   =        12

R-sq:  within  = 0.5890                         Obs per group: min =         6
       between = 0.2665                                        avg =       6.0
       overall = 0.5807                                        max =         6

                                                F(2,58)            =     41.56
corr(u_i, Xb)  = -0.0302                        Prob > F           =    0.0000
```

NSE_20_Index	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lending_Ra~s	-387.8587	67.56704	-5.74	0.000	-523.1088	-252.6086
Saving_Rate	-196.9943	86.43553	-2.28	0.026	-370.0138	-23.97481
_cons	8508.854	1557.199	5.46	0.000	5391.782	11625.93
sigma_u	108.71441					
sigma_e	549.49258					
rho	.03766824	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(11, 58) =     0.22                 Prob > F = 0.9952
```

The study obtained overall R^2 of 0.5807, $F_{(2,58)}$ of 41.56, $p<0.05$. This meant that interest rates accounted for 58.07% of the changes in equity market performance in Kenya. The results further show that the relationship between interest rates and equity performance was also significant. Thus the coefficient obtained for interest rate on loans was -387.8587 ($p<0.05$) and -196.9943 ($p<0.05$) for interest rate on deposits. This meant that both interest rates on loans and interest rates on deposits have negative and significant effects on stock market performance. It appears that the equity market is sensitive to interest rates as indicated by the strong R square. The inference is that during the study period, higher interest rates on bank loans and higher interest rates on bank deposits were associated with lower equity price performance of quoted stocks and vice versa.

4.4.2 Effect of Interest Rates on Debt Market Performance

The study hypothesized that interest rates have an effect on the capital market debt performance. The findings from this study are presented in table 4.5 below.

Table 4.5: Panel Results on the Effect of Interest Rates on Debt Market Performance

```
Fixed-effects (within) regression               Number of obs      =        72
Group variable: Month                           Number of groups   =        12

R-sq:  within  = 0.1237                         Obs per group: min =         6
       between = 0.2791                                        avg =       6.0
       overall = 0.0862                                        max =         6

                                                F(2,58)            =      4.09
corr(u_i, Xb)  = -0.1098                        Prob > F           =    0.0217
```

Debt_Yield	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lending_Ra~s	-.1763007	.2545	-0.69	0.491	-.6857378	.3331364
Saving_Rate	.1703637	.3255706	0.52	0.603	-.4813367	.8220641
_cons	6.811345	5.865391	1.16	0.250	-4.92951	18.5522
sigma_u	.8371707					
sigma_e	2.0697349					
rho	.1406024	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(11, 58) =     0.95                 Prob > F = 0.4978
```

The study obtained overall R^2 of 0.0862, $F_{(2,58)}$ of 4.09, $p<0.05$. This meant that over the study period, interest rates accounted for only 8.62% of the changes in debt market performance in Kenya. Furthermore, at $\alpha=0.05$, the relationship between interest rates and debt performance was insignificant. The coefficient obtained for interest on loans was -0.1763 ($p<0.05$) and 0.17035 ($p>0.05$) for interest on deposits. This meant that interest on bank loans had negative but insignificant effect on debt market performance while interest on deposits had a positive but insignificant effect on debt market performance. Overall, the inference is made that the debt capital market as operationalised by debt yield is weakly affected by interest rates.

4.4.3 Effect of Interest Rate Capping on Equity Market Performance

Interest capping event was the moderating effect on the study to assess how the event affected the equity and debt market performance. The findings on the effect of interest capping are presented in table 4.6.

Table 4.6: Panel Results on the Effect of Capping of Interest Rates on Equity Market Performance

```
Fixed-effects (within) regression               Number of obs      =        72
Group variable: Month                           Number of groups   =        12

R-sq:  within  = 0.6607                         Obs per group: min =         6
       between = 0.3824                                        avg =       6.0
       overall = 0.6540                                        max =         6

                                                F(2,58)            =     56.48
corr(u_i, Xb)  = -0.0180                        Prob > F           =    0.0000
```

NSE_20_Index	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1_Cap	85.94065	48.64712	1.77	0.083	-11.43713	183.3184
X2_Cap	-218.5001	53.45774	-4.09	0.000	-325.5074	-111.4928
_cons	8164.689	838.2838	9.74	0.000	6486.681	9842.696
sigma_u	98.276596					
sigma_e	499.24965					
rho	.03730387	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(11, 58) =     0.23                 Prob > F = 0.9946
```

The study obtained overall R^2 of 0.6540, $F_{(2,58)}$ of 56.48, $p<0.05$. This meant that interest rates with capping accounted for 65.4% of the changes in equity market performance in Kenya. At $\alpha=0.05$ the analysis shows that the relationship between capped interest rate and equity market performance was significant. The coefficient obtained for interest on loans was 85.941 ($p>0.05$) and -218.5 ($p<0.05$) for interest on deposits. Notably, the findings without capping presented in table 4.4 indicated that overall R^2 of 0.5807, F(2,58) of 41.56, $p<0.05$, coefficients for interest on loans was -387.8587 ($p<0.05$) and -196.9943 ($p<0.05$) for interest on deposits. Without the capping, interest rates on loans had a significant negative effect but with capping, it had a positive but not significant effect on equity market performance. Interest rates on deposits had negative and significant effect on equity market pre-capping and after capping periods. This meant that capping on interest rates on deposits did not have significant effect on equity market performance.

4.4.4 Interest Capping and Debt Market Performance

The panel results obtained with introduction of capping interest rates are presented in table 4.7.

Table 4.7: Panel Results on the Effect of Interest Rates Capping and Debt Market Performance

Fixed-effects (within) regression		Number of obs	= 72
Group variable: Month		Number of groups	= 12
R-sq: within = 0.1236		Obs per group: min	= 6
between = 0.2487		avg	= 6.0
overall = 0.0911		max	= 6
		F(2,58)	= 4.09
corr(u_i, Xb) = -0.0850		Prob > F	= 0.0218

Debt_Yield	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1_Cap	-.0687217	.2016937	-0.34	0.735	-.4724555	.3350121
X2_Cap	-.0685179	.2216388	-0.31	0.758	-.5121762	.3751404
_cons	10.68602	3.475572	3.07	0.003	3.728909	17.64314
sigma_u	.82015605					
sigma_e	2.0699174					
rho	.13569233	(fraction of variance due to u_i)				

F test that all u_i=0: F(11, 58) = 0.94 Prob > F = 0.5141

The study obtained overall R^2 of 0.0911, $F_{(2,58)}$ of 4.09, $p<0.05$. This meant that interest rates with capping accounted for 9.11% of the changes in debt market performance in Kenya. The relationship between capped interest rate and debt market performance was significant. The coefficient obtained for interest rates on loans was -0.0687 ($p<0.05$) and -0.0685 ($p<0.05$) for interest rates on deposits. Notably, the findings without capping presented in table 4.5 indicated that R^2 of 0.0862, F(2,58) of 4.09, $p<0.05$, coefficient obtained for interest rates on loans was -0.1763 ($p<0.05$) and 0.17035 ($p>0.05$) for interest rates on deposits. On account of the low oberall R^2 the import of these results is that interest rate capping had no significant effect on debt market performance.

4.4.5 The Moderating Effect of Government Borrowing on the Relationship between Interest Rates and Equity Market Performance

The study sought to determine the effect of government borrowing on the relationship between interest rates and equity market performance. The findings are presented in table 4.8.

Table 4.8: Panel Results on the Moderating Effect of Government Borrowing on the Relationship between Interest Rates and Equity Market Performance

Fixed-effects (within) regression		Number of obs	= 72
Group variable: Month		Number of groups	= 12
R-sq: within = 0.7644		Obs per group: min	= 6
between = 0.4965		avg	= 6.0
overall = 0.7581		max	= 6
		F(3,57)	= 61.65
corr(u_i, Xb) = -0.0112		Prob > F	= 0.0000

NSE_20_Index	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lending_Ra~s	-183.124	60.4226	-3.03	0.004	-304.1181	-62.12979
Saving_Rate	-245.2386	66.42952	-3.69	0.001	-378.2614	-112.2158
Govt_Debt	-559.3325	85.86723	-6.51	0.000	-731.2787	-387.3863
_cons	10440	1225.708	8.52	0.000	7985.566	12894.44
sigma_u	88.262387					
sigma_e	419.67636					
rho	.04235707	(fraction of variance due to u_i)				

F test that all u_i=0: F(11, 57) = 0.26 Prob > F = 0.9910

The study obtained overall R^2 of 0.7581, $F_{(2,58)}$ of 61.65, $p<0.05$. This meant that interest rates and government borrowing accounted for 75.81% of the changes in equity market performance in Kenya. The relationship was string and significant. Notably, without government debt, interest rates had an overall R^2 of 0.5807, $F_{(2,58)}$ of 41.56, $p<0.05$. Thus, government borrowing has a significant moderating effect on the relationship between interest rates and equity market performance. The coefficients obtained were -183.124 ($p<0.05$) for interest rates on loans, -245.239 ($p<0.05$) for interest rates on deposits and -559.33 ($p<0.05$) on government borrowing. Thus, interest rates on loans, interest rates on deposits and government borrowing have significant negative effect on equity market performance.

4.4.6 The Moderating Effect of Government Borrowing on the Relationship between Interest Rates and Debt Market Performance

The findings on the moderating effect of government borrowing on the relationship between interest rates and debt market performance is presented in table 4.9 below.

Table 4.9: Panel Results on the Moderating Effect of Government Borrowing on the Relationship between Interest Rates and Debt Market Performance

```
Fixed-effects (within) regression               Number of obs      =        72
Group variable: Month                           Number of groups   =        12

R-sq:  within  = 0.1278                         Obs per group: min =         6
       between = 0.3824                                        avg =       6.0
       overall = 0.0877                                        max =         6

                                                F(3,57)            =      2.78
corr(u_i, Xb)  = -0.1151                        Prob > F           =    0.0490
```

Debt_Yield	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Saving_Rate	.4333982	.2397708	1.81	0.076	-.0467346	.913531
Interest_R~e	-.5191352	.6033503	-0.86	0.393	-1.727323	.6890529
Govt_Debt	.1968378	.4274367	0.46	0.647	-.6590893	1.052765
_cons	6.384103	6.099117	1.05	0.300	-5.829168	18.59737
sigma_u	.84377251					
sigma_e	2.0829454					
rho	.14096347	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(11, 57) =     0.95                 Prob > F = 0.4971
```

The analysis of data yielded an overall R^2 of 0.0877, $F_{(3,57)}$ 2.78 and $p<0.05$. This meant that interest rates and government borrowing accounted for 8.77% of the changes in debt market performance in Kenya. The relationship between capped interest rate and debt market performance with government debt was very weak. Notably, as shown in table 4.4, without government debt, interest rates had an overall R^2 of 0.0862, $F_{(2,58)}$ of 4.09, $p<0.05$. The low R^2, is interpreted to mean that government borrowing had very weak moderating effect on the relationship between interest rates and debt market performance. The coefficients obtained were -0.5191 ($p<0.05$) for interest rates on loans, 0.4334 ($p>0.05$) for interest rates on deposits and 0.1968 ($p<0.05$) government borrowing. The coefficients for interest rate on loans and government borrowing indicated they are significant implying that interest rates and government borrowing have significant effect on debt market performance. However, the coefficient for interest rates on deposits was insignificant.

4.5 Event Analysis

Event analysis was used to establish whether interest rate regulation had a significant effect on capital market performance. Capital market performance in 2015 was compared to the prevailing

performance in 2017; one year before and after the introduction of interest rate regulation excluding 2016, the year in which the event occurred. The findings are presented in table 4.10.

Table 4.10: Event Analysis Results

		Sum of Squares	df	Mean Square	F	Sig.
Interest Rate on Deposits	Between Groups	277.874	1	277.874	2.14E+03	0.000
	Within Groups	5.981	46	0.13		
	Total	283.855	47			
Interest Rates on Loans	Between Groups	105.169	1	105.169	303.559	0.000
	Within Groups	15.937	46	0.346		
	Total	121.106	47			
Debt Yield	Between Groups	42.188	1	42.188	8.447	0.006
	Within Groups	229.739	46	4.994		
	Total	271.927	47			
NSE-20 Share Index	Between Groups	2.44E+07	1	2.44E+07	133.318	0.000
	Within Groups	8406864	46	182757.9		
	Total	3.28E+07	47			

The findings indicated that interest rates on deposits, interest rates on loans and capital market performance all had p-values of 0.000. This implies that interest rate capping significantly affected the prevailing interest rates on deposits, interest rates on loans and capital market performance. Event analysis thus confirms the significant effect of interest rates on capital performance. The same significant effect compares well with Uddin and Alam (2010) who found that interest rate capping had significant relationship with share price and performance of the stock market. These findings were also reported in Flannery and Protopapadakis (2012) who showed that stock market returns are significantly correlated with interest rates capping.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study sought to investigate the effect of interest rate capping on capital market performance in Kenya. This chapter presents the summary of findings, conclusion and recommendations from the study.

5.2 Summary of Findings

5.2.1 Effect of Interest Rates on Capital Market Performance

On the relationship between interest rates and equity market performance in Kenya, the study obtained an overall R^2 of 0.5807, $F_{(2,58)}$ of 41.56, $p<0.05$. This meant that interest rates accounted for 58.07% of the changes in equity market performance in the study period. The relationship between interest rate and equity performance was also significant. The coefficient obtained for interest rate on loans was -387.8587 ($p<0.05$) and -196.9943 ($p<0.05$) for interest rate on deposits. This meant that interest rate on loans and interest rates on deposits have negative and significant effect on equity market performance. Equity market is sensitive to interest rates as indicated by the strong R square.

On the relationship between interest rate and debt market performance, the study obtained overall R^2 of 0.0862, $F_{(2,58)}$ of 4.09, $p<0.05$. This meant that interest rates accounted for 8.62% of the changes in debt market performance in Kenya. The coefficient obtained for interest rate on loans was -0.1763 ($p>0.05$) and 0.17035 ($p>0.05$) for interest rate on deposits. This meant that interest rate on loans had negative but insignificant effect on debt market performance while interest rate on deposits had an insignificant positive effect of debt market performance. Thus, the effect of interest rates on the debt market is weak. These findings compared well with those of Khalid, (2017) who studied the effects of interest rate on the stock market performance of Pakistan and established a negative effect between interest rates and equity market performance. On the contrary, Sir (2012) found that the interest rates led to short-term adjustments but no long-term dynamic movements of stock prices.

5.2.2 Effect of Interest Rate Capping on Capital Market Performance

The study also sought to determine the effect of interest rate capping on capital market performance. With introduction of interest capping, capped interest rates and equity market performance had an overall R^2 of 0.6540, $F_{(2,58)}$ of 56.48, $p<0.05$. This meant that capped interest rates accounted for 65.4% of the changes in equity market performance in Kenya. The relationship between capped interest rate and equity market performance was also significant. The coefficient obtained for interest rate on loans was 85.941 ($p>0.05$) and -218.5 ($p<0.05$) for interest rate on deposits. Notably, the findings without capping indicated an overall R^2 of 0.5807, $F_{(2,58)}$ of 41.56, $p<0.05$, coefficients for interest rate on loans was -387.8587 ($p<0.05$) and -196.9943 ($p<0.05$) for interest rate on deposits. Without the capping, interest rates on loans had a significant negative effect but with capping, interest rates on loans had a positive but not significant effect on equity market performance. Thus, capping interest rate on loans had significant positive effect on equity market performance. On the other hand, interest rate on deposits had negative and significant effect on equity market both in pre-capping and after capping periods. This meant that the cap on interest rate on deposits did not have significant effect on equity market performance.

The study also sought to establish the effect of interest capping on debt market performance. The study obtained overall R^2 of 0.0911, $F_{(2,58)}$ of 4.09, $p<0.05$. This meant that capped interest rates accounted for 9.11% of the changes in debt market performance in Kenya. The relationship between capped interest rate and debt market performance was significant. The coefficient obtained for interest rate on loans was -0.0687 ($p>0.05$) and -.0685 ($p>0.05$) for interest rate on deposits. Notably, the findings without capping presented indicated an R^2 of 0.0862, $F_{(2,58)}$ of 4.09, $p<0.05$, coefficient obtained for interest rate on loans was -0.1763 ($p>0.05$) and 0.17035 ($p<0.05$) for interest rate on deposits. Thus, interest rate capping had no significant effect on debt market performance.

The findings were in line with those of Celebi and Hönig, (2019) who established a significant relationship between interest rates capping and German Stock Market performance. Ganatra (2015) also found that there was a negative insignificant relationship between interest rates and performance of bond. On the contrary, Pallegedara (2012) proposed scrapping of interest rate capping based on the premise that the gains were not sustainable in long run. These findings

contradicted those of Rachael and Moses (2017) who using event analysis technique, established that interest rate capping had a negative effect on stock market performance in Kenya.

5.2.3 Moderating Role of Government Borrowing on the Relationship between Interest Rates and Stock Market Performance

The study further sought to assess the moderating role of government borrowing on the relationship between interest rates and stock market performance. The findings obtained from the regression analysis revealed that when the government borrowing was introduced into the model as an moderating variable, an overall R^2 of 0.781, $F_{(2,58)}$ of 61.65, $p<0.05$ was obtained. This meant that interest rates and government borrowing accounted for 78.1% of the changes in equity market performance in Kenya. The relationship was significant. Notably, without government debt, interest rates had an overall R^2 of 0.5807, $F_{(2,58)}$ of 41.56, $p<0.05$. Thus, government borrowing had a significant moderating effect on the relationship between interest rates and equity market performance. The coefficients obtained were -183.124 ($p<0.05$) for interest rate on loans, -245.239 ($p<0.05$) for interest rate on deposits and government borrowing -559.33 ($p<0.05$). Thus, interest rate on loans, interest rate on deposits and government borrowing have significant negative effect on equity market performance.

In the debt market, the study obtained overall R^2 of 0.0877, $F_{(3,57)}$ of 2.78, $p<0.05$. This meant that interest rates and government borrowing accounted for 8.77% of the changes in bond market performance in Kenya. The relationship between capped interest rate and equity market performance was significant. Notably, without government debt, interest rates had an overall R^2 of 0.0862, $F_{(2, 58)}$ of 4.09, $p<0.05$. Thus, government borrowing had no significant moderating effect on the relationship between interest rates and debt market performance. The coefficients obtained were not significant implying that interest rates and government borrowing have no significant effect on debt market performance.

5.3 Conclusion

5.3.1 Effect of Interest Rates on Capital Market Performance

The study found out that bank interest rates are negatively correlated to equity market performance. The conclusion arising from this finding is that an increase in bank interest rates will lead to a significant decrease in the equity market returns. This is attributed to the fact that high interest rates increase the cost of borrowings by businesses and households and thus discourage borrowing, spending and investments. The ensuing reduction in the demand for quoted securities as an investment asset class leads to a lower price of equities in the capital markets. On the other hand, the study leads to a conclusion that interest on bank loans and interest paid on bank deposits have an insignificant effect on debt market performance.

5.3.2 Effect of Interest Rate Capping on Capital Market Performance

The study found that deposit interest rate capping had no significant effect on equity market performance. However, bank loan interest rate capping was established to have a positive effect on capital market performance. From this study a conclusion is made that the prevailing interest rate on loans will significantly influence the returns in the equity market. This could be due to interest rates being negatively related to stock market performance. Thus, interest rate capping had the effect of reducing interest rates and this led to improved equity market performance. In addition, due to the capping, commercial banks reduced their lending to risky customers. The less risky investors who are now able to access more borrowing with interest rate capping could be the ones investing in equity market. The risky borrowers who are unable to borrow as a result of the capping mainly invest in other assets and not the capital markets. It is further concluded that interest rate capping does not have significant effect on debt market performance.

5.2.3 Moderating Role of Government Borrowing on the Relationship between Interest Rates and Stock Market Performance

The study further found out that government borrowing has a significant moderating effect on interest rates and equity market performance. The conclusion is that higher government borrowing tends to increase interest rates and reduce equity market performance. This may be explained by

the fact increased government borrowing tends to impact negatively on economic growth and also the fact that in this situation the private sector tends to lack alternative source of financing. However, government borrowing is found not to significantly affect debt market performance.

5.4 Recommendations

5.4.1 Recommendations for Practice

The study established that interest rates are negatively correlated to equity market performance. Thus, equity market investors who invest for capital gains should consider reducing their equity portfolios when bank interest rates are low. This will ensure that they are able to maximize on capital gains. Further, in periods of high interest rates, stock market returns will be on the decline implying that this is the time to invest in equity stocks. Low interest rates lead to improved equity market performance and thus improved business environment which promote investments in the economy. With respect to businesses that are seeking for funds, it is recommended that the best time to go to the capital markets for equity capital is when the returns are low: during times of high bank interest rates.

5.4.2 Recommendations for Policy

The study findings were that interest rates on loans had a significant negative correlation with the stock market performance. It is therefore recommended that in their mandate of ensuring financial stability, central bank should aim to regulate interest rate levels through monetary policies. Monetary policies that result in low interest rates on bank loans translate to improvements in the performance of the economy including the equity market. Improved equity market performance will attract foreign investments in the country and thus further improving investments in the country. Further, the government should focus on market interest rate stabilization to avoid long run negative effects on interest rate capping on the economy.

Noting the that government borrowing was found to have an moderating effect on interest rates and stock market performance it is recommended that the government looks for alternative means of raising revenues and avoid too much borrowing which dampens stock market performance and

denies businesses of dis-intermediated equity finance through the capital markets. This calls for alternative sources of government revenues such other than domestic or foreign debt.

5.5 Areas for Further Research

The focus of this study was outcomes in Kenya's Nairobi Securities Exchange as relates to the capping of interest rates. Given that Kenya's stock market has relatively few securities, a deeper study can be undertaken to examine equities' prices at individual securities level to establish if there are significant differences in the relationship of interest rates and security prices for different market segments and hence different sectors. Another study can also be designed to determine the channels through which interest capping is transmitted to capital markets, especially noting that this study found no association between interest rate capping and capital markets debt yields.

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APPENDICES

Appendix I: Listed Companies in Kenya

1 Eaagads Ltd.

2 Kapchorua Tea Co. Ltd.

3 Kakuzi

4 Limuru Tea Co. Ltd.

5 Rea Vipingo Plantations Ltd.

6 Sasini Ltd.

7 Williamson Tea Kenya Ltd.

8 Car & General (K) Ltd.

9 Sameer Africa Ltd.

10 Marshalls (E.A) Ltd.

11 Barclays Bank Ltd.

12 CFC Stanbic Holdings Ltd.

13 I & M Holdings Ltd.

14 Diamond Trust Bank Kenya Ltd

15 HF Group Ltd.

16 KCB Group Ltd.

17 National Bank of Kenya Ltd.

18 NIC Bank Ltd

19 Standard Chartered Bank Ltd.

20 Equity Group Holdings

21 The Co-operative Bank Ltd

22 Express Ltd

23 Kenya Airways Ltd.

24 Nation Media Group

25 Standard Group Ltd.

26 TPS Eastern Africa (Serena) Ltd.

27 Scangroup Ltd.

28 Uchumi Supermarkets Ltd.

29 Hutchings Biemer Ltd.

30 Longhorn Publishers Ltd.

31 Atlas Development and Support Services

32 Deacons (East Africa) Plc

33 Nairobi Business Ventures Ltd.

34 Athi River Mining

35 Bamburi Cement Ltd.

36 Crown Berger Ltd

37 E.A Cables Ltd.

38 E.A Portland Cement Ltd.

39 Kenol Kobil Ltd.

40 Total Kenya Ltd.

41 KenGen Ltd.

42 Kenya Power & Lighting Co. Ltd.

43 Umeme Ltd

44 Jubilee Holdings Ltd

45 Pan Africa Insurance Holdings Ltd.

46 Kenya Re- Insurance Corporation Ltd.

47 Liberty Kenya Holdings

48 Britam Holdings Ltd.

49 CIC Insurance Group Ltd.

50 Onlympia Capital Holdings

51 Centum Investment Co. Ltd.

52 Trans- Century ltd.

53 Home Afrika Ltd

54 Kurwitu Ventures

55 Nairobi Securities Exchange Ltd.

56 B.O.C Kenya Ltd

57 British American Tobacco kenya Ltd.

58 Carbacid Investments Ltd

59 East African Breweries Ltd.

60 Mumias Sugar Co. Ltd

61 Unga Group Ltd.

62 Eveready East Africa Ltd.

63 Kenya Orchards Ltd.

64 A. Baumann Co. Ltd

65 Flame Tree Group Holdings Ltd.

66 Safaricom Ltd.

67 Stanlib Fahari I-REIT

Source; Nairobi Securities Exchange (2018)

Appendix II: Summary of Findings on the Relationship between the Independent and Dependent Variables

Objective	Table Number	R^2	Significant R^2 ?	Coefficient for interest on loans	Loan interest coefficient significant ?	Coefficient for interest on deposit	Deposit interest coefficient significant ?	Coefficient for interest on deposit	Borrowing coefficient significant?
1. Effect of interest rates on stock performance	4.3	0.5807	Yes	-387.86	Yes	-196.99	Yes	-	-
1. Effect of interest rates on debt performance	4.4	0.0862	No	-01763	No	0.1703	No	-	-
2. Effect of interest rates capping on stock performance	4.5	0.6540	Yes	85.941	No	-218.5	Yes	-	-
2. Effect of interest rates capping on debt performance	4.6	0.0911	Yes	-0.0687	No	-0.0685	No	-	-
3. Moderating effect of borrowing on interest rates and stock performance	4.7	0.7581	Yes	-183.124	Yes	-245.239	Yes	-559.33	Yes
3. Moderating effect of borrowing on interest rates and debt performance	4.8	0.0877	Yes	-0.5191	No	-0.4334	No	0.198	No

Appendix III: NACOSTI Clearance

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/15846/30264**

Date: **9th May 2019**

Tabitha Wanjiru Thuo
Strathmore Business School
P.O. Box 59857 - 00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effect of Interest Rate Capping on stock market performance in Kenya."*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **9th May, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

DR. STEPHEN K. KIBIRU. PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

THIS IS TO CERTIFY THAT:
MISS. TABITHA WANJIRU THUO
of STRATHMORE BUSINESS SCHOOL,
0-200 NAIROBI,has been permitted to
conduct research in *Nairobi County*

Permit No : NACOSTI/P/19/15846/30264
Date Of Issue : 9th May,2019
Fee Recieved :Ksh 1000

on the topic: *EFFECT OF INTEREST RATE CAPPING ON STOCK MARKET PERFORMANCE IN KENYA*

for the period ending:
9th May,2020

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL.: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 24586

CONDITIONS: see back page

Appendix IV: Ethical Clearance Certificate

Strathmore UNIVERSITY

18th June 2019

Ms Thuo, Tabitha
tabitha.thuo@equitybank.co.ke

Dear Ms. Thuo,

REF Protocol ID: SU-IERC0516/19 **Student No.:** MBA/7808/14

Effect of Interest Rate Capping On Capital Market Performance in Kenya

We acknowledge receipt of your application documents to the Strathmore University Institutional Ethics Review Committee (SU-IERC) which includes:

1. Study Protocol submitted 7th June 2019
2. Cover letter listing all submitted documents 7th June 2019
3. Proposal declaration Page signed by supervisors 7th June 2019

The committee has reviewed your application, and your study *"Effect of Interest Rate Capping on Capital Market Performance in Kenya"* has been granted **approval.**

This approval is valid for one year beginning **18th June 2019** until **17th June 2020.**

In case the study extends beyond one year, you are required to seek an extension of the Ethics approval prior to its expiry. You are required to submit any proposed changes to this proposal to SU-IERC for review and approval prior to implementation of any change.

SU-IERC should be notified when your study is complete.

Thank you.

Sincerely,

STRATHMORE UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE (SU-IERC)
18 JUN 2019
TEL: +254 (0)703 034 000
P. O. Box 59857 - 00200
NAIROBI - KENYA

for: Prof Florence Oloo
Secretary
Strathmore University Institutional Ethics Review Committee

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email info@strathmore.edu www.strathmore.edu