

**EFFECT OF INTEREST RATE CAPPING ON LOAN PORTFOLIO
PERFORMANCE OF LISTED COMMERCIAL BANKS IN KENYA**

BY

MECHA NYABOKE GENEVIVE

**A RESEARCH PROJECT PRESENTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF MASTER OF SCIENCE IN FINANCE, SCHOOL
OF BUSINESS, UNIVERSITY OF NAIROBI**

NOVEMBER, 2018

DECLARATION

I declare that this is my work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed: _____ Date: _____

Mecha Genevive

D63/5505/2017

This Research project has been presented for examination with my approval as the University Supervisor.

Signed: _____ Date: _____

Dr Cyrus Iraya

Senior Lecturer, Department of Finance and Accounting

School of Business, University of Nairobi

ACKNOWLEDGEMENT

I would like to acknowledge my supervisor Dr. Cyrus Iraya whose crucial leadership, guidance and encouragement throughout the period of this research project has been invaluable. To God be the Glory.

DEDICATION

This work is dedicated to lovely son Grenellaume Masese Jnr, my dear parents Mr. and Mrs. Denis Mecha Masese and my siblings Dr. Cleophas, Edith, Ennocent and Winrose.

Thanks for your prayers, continued support and encouragement. God Bless you.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
DEDICATION.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
ABSTRACT.....	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study.....	1
1.1.1 Interest Rate Capping.....	2
1.1.2 Loan Performance	3
1.1.3 Interest Rate Capping and Loan Performance	5
1.1.4 Listed Commercial Banks in Kenya	6
1.2 Research Problem	7
1.3 Objective of the Study	10
1.4 Value of the Study	10
CHAPTER TWO: LITERATURE REVIEW.....	11
2.1 Introduction.....	11
2.2 Theoretical Framework.....	11

2.2.1 Modern Portfolio Theory	11
2.2.2 Theory of Rational Expectation	12
2.2.3 Free Market Theory	13
2.3 Determinants of Loan Portfolio Performance	14
2.3.1 Interest rate capping	14
2.3.2 Size of Deposit	15
2.3.3 Firm Size	16
2.3.4 Non-Performing Loans	16
2.4 Empirical Review	17
2.5 Conceptual Framework	23
2.6 Summary of Literature Review	23
CHAPTER THREE: RESERCH METHODOLOGY	25
3.1 Introduction	25
3.2 Research Design	25
3.3 Target Population	25
3.5 Data Collection	25
3.6 Diagnostic Tests	26
3.7 Data Analysis	26
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION	27
4.1 Introduction	27
4.2 Diagnostic Tests	27

4.2.1 Normality Test	27
4.3 Descriptive Statistics.....	28
4.4 Paired Samples Test.....	31
4.5 Discussion of the Findings.....	32
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	34
5.1 Introduction.....	34
5.2 Summary of the Findings.....	34
5.3 Conclusion	35
5.4 Recommendation	35
5.5 Limitation of the Study	36
5.6 Suggestions for Further Research	36
REFERENCES.....	38
APPENDICES	43
Appendix I: Listed Commercial Banks at the Nairobi Securities Exchange	43
Appendix II: Data before Capping of Interest Rate	44
Appendix III: Data after Capping of Interest Rates	46

LIST OF TABLES

Table 3. 1 Data Analysis Trend	26
Table 4. 1 Descriptive statistics before capping rate	28
Table 4.2:Descriptive statistics after capping rate	29
Table 4.3: Paired Samples Test.....	31

LIST OF FIGURES

Figure 2.1 Conceptual Framework	18
---------------------------------------	----

LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
CBR	Central Bank Rates
CFC	Credit Finance Corporation
DTB	Diamond Trust Bank
DTMs	Deposit Taking Microfinance
EPS	Earnings per Share
HF	Housing Finance
IRC	Interest Rate Capping
KCB	Kenya Commercial Bank
KNBS	Kenya National Bureau of Statistics
MPT	Modern Portfolio Theory
NIC	National Industrial Credit
NPL	Non- Performing Loans
NSE	Nairobi Securities Exchange
SMEs	Small and Medium Enterprise
SPSS	Statistical Package for Social Science

ABSTRACT

This study sought to determine the effects of interest rates capping on the increase of value of the loan book, customer deposits, firm size and non-performing loans of commercial banks was significant one across the industry. This study was necessitated by the law passed in August 2016 that came into effect in September 2016 seeking to regulate and place a cap on interest rates charged by commercial banks in Kenya. The argument by commercial banks in Kenya was that this law would have had negative repercussions, and that there would likely be cases of credit rationing in the economy, and commercial banks would end up suffering. This study adopted a study research design and data collection was both quantitative in nature, from banks' financial statements. The population targeted was all listed commercial banks at Nairobi Securities Exchange. Quarterly data was collected and analysed for a period of 12 quarters, with 6 quarters period prior (31st March 2015 to 30th June 2016) and 6 quarter after (31st Dec 2016 to 31st March 2018). Data was obtained from the Central bank of Kenya, where quarterly report of the banking sector in Kenya is usually carried out. The event study on the dependent variables was analyzed in terms of Paired T-test analysis both periods of the study. Natural log of all the variables was used for efficiency of data analysis in SPSS. This study conducted paired samples test to find out whether the increase of value of the loan book, customer deposits, firm size and non-performing loans of commercial banks was significant one across the industry. The results of this study revealed that interest rates and levels of personal loans advanced by commercial banks are related. The results indicated that there was a significant change and movement in the levels of personal loans for the two periods, and that after the interest rates capping at 14%, the levels of personal loans advanced by commercial banks increased significantly. This leads to the conclusion that at low interest rates, demand for personal loans increases, and that at higher rates of interest, demand for personal loans goes down. Having concluded that there was significant change on the increase of value of the loan book, customer deposits and firm size the study recommends that commercial banks should adopt effective lending practices that will enable reduction of non-performing loans which have increased after capping of interest rates.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Lending of money is one of the world's oldest professions which probably accounts for the recurring skepticism about its value (Irving Michel man). Consumers make choices based on the price of money just as they respond to prices of other goods and services. Governments over the world place interest rate caps for various reasons which could be economical or political. However, the major reason for interest capping is consumer protection, more especially the uninformed low income consumers of credit facilities from the exploitation of Commercial banks through the high interest rates and other hidden charges that are not disclosed to the consumers at the time of entering into the loan contract.

Through capping of interests people are granted access to credit at interest rates that are reasonable. Commercial banks have experienced a reduction in profit margin because it is a difference between the deposit rates and the lending rates. However, through stabilized interest rates commercial banks can grow their loan portfolio by giving credit access to many clients and boost their financial status. Capping reduces the level of bad debts and this enhances the bank's loan portfolio performance in addition to increased credit advances to distinctive borrowers (Ng'ang'a, 2017).

This study is anchored on Free Market Theory, Loan Pricing Theory and Modern Portfolio Theory. Free market theory was developed by Friedman (1962) argues that money in circulation grows as the economies grow in contrast to situations where the money supply is controlled by the government. The Loan pricing theory was developed by Stiglitz and Weiss (1981). The theory explains the risks associated with commercial

banks for charging high interest rates. This scares away borrowers and increases the chances of default risk because of exorbitant interest rates. Modern Portfolio Theory (MPT) was first presented by Markowitz (1959). Gollinger and John Morgan (1993) took Markowitz's portfolio theory to the banking sector and to the allocation and optimization of loan portfolio in particular. The theory explains that healthy loan portfolios are vital assets for banks in view of their positive impact on the performance of the banks.

Through capping of interest rates commercial banks contends that the free market system is jeopardized. According to the Kenya National Bureau of Statistics (KNBS) report, the amendment of the Banking Act in August 2016 to regulate the interest rates resulted into a significant decline in interest rate; during September 2016 interest rates was 13.84 percent down from 16.75 percent registered in same month in 2015. In the recent past, two major reforms have taken place in the banking sector. In November 2015, excise duty of 10% was introduced on commissions earned by the bank and most of the banks transferred this charge to the consumers.

In September 2016, in a move to regulate interest rates the Members of Parliament passed a bill that sought to amend the Banking Act by restricting interest rate charged by banks. The amendment capped the lending interest rates at percent above the Central Bank Rate (CBR) of 10 percent and fixed a minimum deposit rate of 70 percent of the CBR. It would therefore be vital to evaluate if other factors within the organizations further affect performance of these institutions (CBK, 2017).

1.1.1 Interest Rate Capping

Interest rate capping is a situation where interest rates are allowed to fluctuate but within set limits. Interest capping is the enactment of law which seeks to put a ceiling

and floor on interest rate pricing by commercial banks. As does any binding price ceiling an interest rate cap do interfere with the gains from trade flowing to both borrowers and lenders. Different governments adopt different strategies including an entirely rigid system or a flexible system where there is discrimination in capping based on loan type customer nature. A flexible cap rate is where interest rates are pegged on a base rate set by the respective government central bank while fixed cap is one where the government gives a specific interest rate that should be adopted by all the commercial banks operating in the country (Miller, 2013).

Interest rate capping is meant to protect consumers by making loans more affordable and increase access to finance. The cap standardized the interest to a range of 13.5% and this created an incentive to lenders because they could extend credit to many people. Interest rate is the charges a borrower incur for the use of money or assets they borrow from a lender or a financial institution (Ellison, 2006). These interest rates are reached at after considering the actual cost of funds, overheads, provision for nonperforming loans and banks profitability. Therefore, interests cap may result in financial strain for some commercial banks depending on respective banks operational costs. Although the interest cap may limit the bank's profitability in the short-run it necessary for banks to offer a variety of financial products to enhance their competitiveness in the long-run. Interest measurement was done through a study on effect before and after the capping (Miller, 2013).

1.1.2 Loan Performance

According to Gale (2010) Loan portfolio can be termed as the rate of return on loan products where number of customers applying for loan, the amount borrowed, prompt installment payment and collateral backing the loans are considered. Loan portfolio

performance is defined as the aggregate sum of credit given out in as advances in various advance items to the distinctive sorts of borrowers (Trigo, Lee and Rhyme, 2004). Advance portfolio execution is reflected in various factors relying upon whether it is the monetary establishment or the customer exploring it. Commercial banks concentrate on advances as far as there is an unpaid debt, advance reimbursement, portfolio in risk and advance overhaul through intrigue installment in a set period. Loan portfolios are assets to the bank and their value is not only dependent on the interest rates but also the portfolio quality (Ellison, 2006).

Loan portfolio is therefore, a major bank asset and contributes a significant portion of the bank revenue. The risk associated with loan portfolio is quite high and very significant to bank safety and soundness. According to Qin and Ndiege (2013) good loan portfolio management process is necessary to minimize the level of credit risk and as such portfolio managers are careful on loan approval processes and adequately monitor loan portfolio performance. The main aim of portfolio management is to ensure that risks associated with lending activities are clearly identified and information is passed to top management and board of directors for necessary actions.

In an effort of increasing profitability commercial banks task is to offer as many loan products as possible and try to minimize the level of non-performing loans by encouraging prompt repayment (Greenidge and Grosvenor, 2010). According to Jovovic (2014) non-performing loan is a loan that has not been serviced for more than ninety days. These loans which have not been frequently paid affect the loan portfolio performance of a bank. It is therefore, necessary for banks to place adequate measures to minimize the amount of impaired loans. It is prudent for banks to consider the

performance of the real economy while giving out loans because default risks may be higher in recession time.

1.1.3 Interest Rate Capping and Loan Performance

It is without doubts that interest rate capping affect the way banks allocate credit in the market from theoretical and previous studies. Friedman (1962) in his argument was against all form of control by government. He stated that any form of control would bring shortage and he gave an example of price fixing on tomatoes with a conclusion that such a move would cause shortage. Government intervention on any form of control distorts market forces and the results are not very much predictable. Keynes (1960) said that transaction deposits and the deposit interest rates are inversely proportional where low interest rates affects the financial performance of institutions negatively because of limited loanable funds. On the other hand, modern portfolio theory by Markowitz (1952) show the risk appetite of investors where financial institutions are said to be risk averse and tend to adopt discriminative lending practices to reduce risk.

Jovovic (2014) in his investigation takes note of that unforeseen change in monetary variables will prompt change later on loan fee. In this manner financing cost top gets rid of hypothesis on the normal level of loan cost in future. Be that as it may, if the banks expect the issuance of credits to specific people to be unfavorably influenced by financing cost top, presentation of such controls will make banks to rethink advances issued to those gatherings saw to be hazardous. The cynicism among business counts on the effect of financing cost top to their gainfulness for the most part makes them to start cost cutting procedures like saving, shutting down branches and decreasing measure of unbound advances subsequently abridging accessibility of credit in the market.

According to Forcher (2006), an increase in demand for credit is inversely related to the interest rate. When customers fail to pay their loans on time, the amount of credit available also decreases (Kodongo and Ojah, 2012). Increase in inflation rates also causes an increase in the interest rates as the purchasing power of money decreases. Secured loans are offered at lower interest rates compared to unsecured loans. Additionally, when wage rates rise, interest rates also increase (Corb, 2012).

1.1.4 Listed Commercial Banks in Kenya

Commercial banks are regulated by their respective central banks all over the world. According to CBK's directory, there are forty-three commercial banks in the country some of which are internationally based. The headquarters of these banks are in Nairobi and they serve both retail and corporate customers. The banks in the country perform the following function: creation of money, community savings, ensure smooth support of payment mechanisms, ensure smooth flow of international transactions, storage of valuable goods and provision of credit services. The Central Banks of Kenya falls under Treasury docket, is accountable for the formulation and execution of monetary policy and foster of liquidity and proper operations of Kenyan commercial banks. This policy formulation and implementation also include commercial banks financial risk management and financial performance (Central bank of Kenya, 2017). Out of the 43 banks, 31 are owned by locals and 13 by foreigners while 11 are listed on the Nairobi Securities Exchange (CBK, 2017).

The performance of the general economy to some extent depends on the wellbeing of the banking sector and their ability to operate efficiently. There are forty two commercial banks in Kenya (CBK, 2017). Out of the forty two licensed banks in Kenya, there are 11 listed banks on the security exchange namely: KCB Bank Group, Equity

Bank, Co-operative Bank, I&M Bank, DTB, National Bank of Kenya, CFC Stanbic, HF Group, Standard Chartered Bank, NIC Bank and Barclays Bank Kenya (nse.co.ke). Listed commercial banks in Kenya have seen a slow growth in earning per share (EPS) of 8.2% in 2017 a decline of about 6% in comparison to year 2016. This decline is attributed to interest capping and a further decrease in rates (CBK, 2017).

Bank interest rates in Kenya have been varying and largely open to market forces of demand and supply. The Banking Amendment Act 2001 is one of the major developments that took place in the industry in attempts to regulate the interest rate regime in the country. Since then developments have taken place in regulation including adoption of Bank Base Lending Rates as reference rates. Also the banking amendment bill of 2015 was signed in to law on 25th August 2016. This in effect capped the interest rates charged by commercial banks in Kenya where a maximum of 4% above the CBK rate was allowed for lending and deposit rates were set at a minimum of 70% on the CBK rate (CBK, 2017).

1.2 Research Problem

Interest rate capping is one of the oldest and mostly recurring government intervention methods in the financial market (Hester and Benjamin, 2016). The query as whether change in interest rates influences the stock markets has been widely studied equally in academic and document circles and there are supporters and rivals of interest rate capping. The supporters argue the capping of interest rates helps in protecting the public interest through fair charges on borrowings. that, Proponents argue that the introduction of interest rate ceilings give the small income earners an opportunity to access loan s as well as a protection from exploitation by lenders (OFT 2010). External factors such as elections, new government and changing government policies also have a direct effect

on interest rates and increased risk of loan defaults and non-performing loans which affect loan performance of banks. Lenders secure themselves against the increased risk of default brought about by these factors by pegging the pricing on credit facilities to the likelihood of default such that higher risk unsecured loans attract higher interest rates than lower risk secured loans advanced to borrowers with a good track record of payment. The higher the risk of default, the higher the interest rates (Horcher, 2006).

Financial performance of Kenya's banking industry has been a subject of public interest. For instance, the industry posted a KSh. 89.5 billion pre-tax profit in 2011, a 20.5 percent increase from previous year KSh.74.3 billion. The customer base has also increased considerably in the last four years from 4.7 million to 15.7 million. There were high spreads between lending rates and deposit rates compared to other developing peer economies, and the resulting high profitability in the sector. This caused public furor and led the introduction effort to cap interest rate, regulate the pricing of loan and interest on deposit. The failure of most commercial banks has been particularly linked to the adverse impacts of fluctuations in interest rates and corporate governance among other factors which influence loan portfolio performance (Mbua, 2017). In this view, this show there is still lays a gap that could be strengthened if proper research work is done in the area of the topic.

Loan portfolio performance and interest rate capping of banks has attracted many researchers' minds. This is because some banks have gone under while others are facing serious default or low loan uptake. Globally, Nkuah (2015) found that loan portfolio quality has significant effect on the financial performance of the selected Ghanaian universal banks. Rodgers (2013) found that loan performance have positive significant effect on profitability of microfinance institutions in Uganda. Kaggwa (2013) found

that interest rates have negative significant effect on loan portfolio performance of Centenary Bank Entebbe Road Branch in Uganda. Siddigui, Malik and Shah (2012) researched on the impact of interest rate volatility on non-performing loans in Pakistan and found that as much as there was a rise in the NPLs of commercial banks it was not affected by the volatility of interest rates.

Locally, Koech and Moronge (2018) found that interest rate capping statistically, strongly and significantly correlated to growth of the SMEs in Kenya. Muiru, Oluoch and Ajang (2018) found that there is a significant relationship between loan portfolio management and profitability of DTM institutions in Kenya. Kibobo (2017) found that that IRC have negative effect on profitability of financial performance of equity bank. Ng'ang'a (2017) found that financial performance of listed commercial banks at NSE was negatively affected by the introduction of capping interest rate. Kisaka (2016) found that credit rating practices have a positive significant effect on loan book performance of commercial banks in Kenya.

From the global and local empirical studies above, it is clear that capping interest rates does not address a market failure problem; it instead introduces one. Therefore this creates a reason enough to conduct further studies to investigate interest rate capping in Kenya context and identify its effect on loan portfolio performance. In addition most of the studies conducted in Kenya have focused on interest rate capping and financial performance of financial institutions and none has focused on interest rate capping and loan portfolio performance of commercial banks in Kenya. Therefore this breeds the knowledge gap upon which this study seeks to fill. Therefore this study attempted to give an explanation to the question, what is the effect of interest rate capping on the loan portfolio performance of commercial banks listed at NSE?

1.3 Objective of the Study

The objective of the study is to determine the effect of interest rate capping on the loan portfolio performance of listed commercial banks in Kenya.

1.4 Value of the Study

The management personnel of the listed commercial banks are in a key position to understand the determinants of loan portfolio performance which in turn play a bigger role in determining their operations. Their findings are valuable in making decisions regarding capital sourcing through equity as well as how to increase investor confidence generally through increasing loan performance.

The findings from the study are of important to the government policy makers evaluate the effects of the capping law on the performance of the Kenyan economy through extension of credit to businesses in Kenya. The study findings assist to realize more effective ways of reducing interest rate on loans over the long run and of improving access to finance.

The study findings provides further studies that Scholars and academicians in the finance discipline can use to conduct future studies to broaden the knowledge on IRC. Furthermore, they can consider the methods and results of this research and possibly extend it in various directions. The study adds to the present information on loan portfolio performance and interest rate capping in the Kenyan context.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical framework applied in the study and reviews previous studies done IRC and loan portfolio. It contains the theoretical review, determinants of loan portfolio, empirical review, conceptual framework and summary of literature review.

2.2 Theoretical Framework

This section presents a view of guiding theories touching on the effect of interest rate capping on loan portfolio performance of listed commercial banks in Kenya. This study focused on three theories namely: Modern Portfolio Theory, Free Market Theory, and Rational Expectation Theory

2.2.1 Modern Portfolio Theory

This theory according to Markowitz (1959) collaborate income diversification and portfolio theory on investment approach where investor balances the risk against the expected maximum earning from overall portfolio. Furthermore, diversified portfolio is an effective approach to increase returns while reducing risk associated with the investment. As such, portfolio selection strategies have gained traction in financial literature in the recent past. Although Markowitz focused on securities, his novel theories have found their way into many industries and environments including optimal credit selection in banking. Gollinger and John Morgan (1993) took Markowitz's portfolio theory to the banking sector and to the allocation and optimization of loan portfolio in particular.

To this effect, modern portfolio uses the approximate “mean-variance” approach to simply portfolio selection problem. The basic idea is that investors should rationally choose portfolios that offer the highest return for the least amount of risk. Loan portfolio is typically the largest asset and the most predominant source of income to commercial banks. As such, it is one of the greatest of a risk to commercial banks. Lax credit standards, poor portfolio risk management, or poor internal controls can expose a commercial bank to excessive loss. Effective management of the loan portfolio and the credit function is fundamental to a commercial banks safety and soundness. This theory supports this study because it argue that healthy loan portfolios are vital assets for banks in view of their positive impact on the performance of the banks.

2.2.2 Theory of Rational Expectation

This hypothesis was first engendered by Muth in 1961. The hypothesis contends that a future financial event can be controlled by the present circumstance. For example, we can figure future financing cost by utilizing current one and our desires will at last drive them to expected esteem. Market recognitions stay to be one of the key determinants of real result, say the instance of securities and offers for example. Keynes alludes to this as "floods of positive thinking and cynicism" that decided level of business exercises. Members will act in a way as of now on account of their observation later on and such activities will approve the result of their desires (Nkuah, 2015).

Jovovic (2014) in his examination noticed that startling changes in monetary variables will prompt change later on financing cost. Loan cost top gets rid of hypothesis on the normal level of financing cost in future. Be that as it may, if the banks expect the issuance of advances to specific people to be unfavorably influenced by financing cost top, presentation of such controls will make banks to rethink credits issued to those

gatherings saw to be hazardous. The negativity among business depends on the effect of financing cost top to their productivity as a rule makes them to start cost cutting strategies like conserving, shutting down branches and decreasing measure of unbound advances subsequently abridging accessibility of credit in the market. The hypothesis does not bolster enthusiasm topping since it is unimaginable for banks and financial specialists to appreciate most extreme gain as for monetary conditions in light of the fact that the loan costs are as of now known and settled (Frenkel, 2010). The theory does not support interest capping because it is impossible for lenders and investors to enjoy maximum gain with respect to economic conditions because the interest rates are already known and fixed.

2.2.3 Free Market Theory

The theory was developed by Friedman (1962). He advocated for a free market system as he indicated that money in circulation would grow as the economy grew as opposed to situations where money supply was controlled by the government. In a free market, the difference between the deposit interest rates and the lending interest rates is called spread. However, spread are different from the rate of interest because they determined by the individual financial institution (Chirwa and Mlachila, 2004).

For a free market economy the central bank has a role of signaling interest rate charged but should not dictate to the financial institution on what to charge. Financial institutions should be given the liberty to determine the margins on the spread of the interest rates based on the level of expenses and the level of risk awareness. The spread is influenced by the existing monetary and fiscal policies and should not be dictated (Emmanuelle, 2003). Free market does not necessarily oppress consumers as the spread is managed by the level of competition in the market (Frenkel, 2010). This theory

is relevant to our study because it argues that interest rates should be determined by demand and supply of loanable fund in a free market, therefore there should be no capping of interest rates.

2.3 Determinants of Loan Portfolio Performance

Loan portfolio performance is important aspect for financial institutions over the business cycle because loan is a significant asset. Therefore, financial institution soundness and sustainability is dependent on how well the loan performs. Better loan performance is an indication of financial health in a bank. This study seeks to examine various factors that determine loan portfolio performance.

2.3.1 Interest rate capping

Interest rates are used as alternative in pricing the risk of borrowers. Banks therefore, charge high interest rates in order to cover for default risk in case of default. However, high interest charge would make the loans expensive and this would make it difficult for borrowers to pay increasing chances of default. Beck (2013) researched on the effect of interest rates on the level of NPLs and concluded that the relationship between them was positive. Interest rate capping makes it difficult in pricing the risks of high risk borrowers and this have resulted in a reduction of the loan portfolio of banks because of decreased lending. Interest rates was measured in terms of average loan interest rates as per given quarter period.

When interest rates are high they scare away the borrowers hence profits for banks decline. In Kenya for example, since the introduction of interest rate capping, many commercial banks have reported decline in profits because the lending levels has been

affected ultimately reducing the interest income. Many banks have been forced to scale down most of their operations as a result of declined profits, by lending mostly to the government and large corporates and increasing loan fees in a bid to offset the loss in interest income. High inflation rates affects interest rates negatively while low inflation rates affects interest rates positively (Miambo and Gallegos, 2014).

2.3.2 Size of Deposit

Machiraju (2008) stipulates that the basis of credit money is the bank deposits which are of two kinds, namely primary deposits (constituting cash or cheques which have been deposited by customers) and derivative deposits (arise on account of granting loans or purchase of assets by a bank). It is out of the primary deposits that the bank makes loans and advances to its customers. Machiraju (2008) thereafter discusses the process of credit creation by taking into consideration an instance of a cash deposit by customer. In the example he provides, the bank that receives the cash deposit maintains 10% of the deposit as the required cash reserve and has a surplus of 90% which it can profitably employ in the assets like loans. Thus, based on the above, we can conclude that the volume of deposits does in fact determine the volume of loans a commercial bank can advance to its customers as a bank will lend out the deposit amount which is in excess of its cash reserve requirement.

The financial performance depends on the amount of money available in the bank to support their operation. Bank with a relatively high amount of money to cater for their operations tend to perform better than those with strained resources. One of the reasons which bring about capital inadequacy is the bank run which is brought about by the fear of customer losing their money as a result of collapsing of commercial banks (Gale, 2010). Therefore commercial banks need to set up emergency funds to cater for daily

operations. Other risks which are faced by commercial banks include credit risk which is due to high default rates from the customers. Therefore, banks should maintain adequate level of deposits to cater for these uncertainties (Kibobo, 2017).

2.3.3 Firm Size

The size of the firm According to Pandey (2010) is determined through the total assets held by the firm. Large size favor the firm because of the large pool of resources that improve the financial structure of the firm compared to small firms. It is therefore, logical for large cap returns to be less volatile compared small cap returns. There are theories that clarify the link between size and returns. For instance, Capital Asset Pricing Model (CAPM) by Sharpe (1964) takes in to account the risk free rate and risk premium in the computation of the expected return. The risk free rate is a certain return on an asset that a shareholder earns while; the risk premium is the supplementary return the shareholder earns for a higher risk in comparison to investing in risk free assets. Abdullahi (2011) analyzed the effect of firm size on share return and found that the small firms stocks obtained higher returns than the large firms stocks and the size of a firm effect was momentous when returns with adjusted risks were controlled for variance in earnings to ratio in prices.

2.3.4 Non-Performing Loans

There are various credit guidelines that regulator require lender to put in place for effective credit administration and improved loan repayment. One of these requirements is credit procedures framework that requires all customers to pay their loan outstanding in time. The credit guidelines help in accelerating loan administration process and stipulate repayment of loan in time to reduce occurrence of NPLs. Horne and Van (2007) found that optimal credit guidelines governing banks helps in

strengthening credit standards for banks to make profits because of decreased NPLs. This is a criteria used in making decisions on who qualifies for credit approval to lower loan loss and improve loan portfolio performance.

2.4 Empirical Review

The importance of interest rate capping has been a great issue in developing and developed nations and therefore, this matter has attracted the attention of researcher in the recent past. There are many empirical studies on interest rate capping and loan portfolio, but these studies have outlined mixed results. This section covers various studies conducted both globally and locally.

Koech and Moronge (2018) did a research to determine the influence of interest rate capping on growth of small and medium enterprises based in Kenya's city of Nairobi. This study adopted a descriptive research design with a target population of 4560 SME firms the city of Nairobi and the analysis of the data was through SPSS and presented in frequency tables with modes of central tendency. The study results state that capping of interest rates in statistics significantly and strongly led to SMEs growing, Thus establishing the relationship outlined in this study quantitatively. Therefore credit plays a major role in mending the gap between financial assets, business owners and required financial assets. Hence there being a need to balance the two and stimulate credit demand. Loan borrowers are of the view that reduced rates enhance credit uptake and inclusion financially but otherwise high rates lead them to having too much debt. As well as banks can only lend upon mobilization of possibly enough funds from their clients and capping of the rates would result in uneven nature of the assets and liabilities of lending institutions. The study therefore recommended the recognition that rates capping is fundamental in impacting the growth of SMEs, thus any concerns for

regulations of chargeable rates on credit offering and financial instruments of other kinds must be based on necessary control measures of the patterns in the economy that would have big influence on SMEs and hence promoting the process of decision making that is rational for the SMEs growth setting controls of interest rates bears huge fiscal effects in the development of an economy.

Muiru, Oluoch and Ajang (2018) did a research to establish the effect of loan portfolio management on the profitability of deposit taking microfinance institutions in Kenya's city of Nairobi. This study adopted a descriptive research design with correlation and regression analysis being used to determine the relationship. The target population was all the 14 licensed deposit taking microfinance institutions with operations in Nairobi and collection of the data was through questionnaires. The study determined that portfolio loan management significantly affects the profitability outcomes of deposit taking microfinance institution through a positive relationship. The study therefore recommended that due diligence on client screening and portfolio controls should be emphasized by the DTMs. The portfolio control should involve enforcing means and ways of recovering loans in instances client exhibit signs of late payment or default.

Kibobo (2017) did a research to examine interest rates capping and performance of financial institution in Kenya, with a study case on Equity bank. This study adopted a descriptive research design with the target population being ninety six Equity bank's customers and staff. The study used a stratified sampling method, and the data collection tools of the primary and secondary data were questionnaires and interviews. The analysis was descriptive involving percentages and weighted averages the data was then represented in pie charts, frequency tables and bar graphs. These study findings depicted that banks have focused on government lending to counter risk effects and

mobile banking platforms, The study concluded that interest rates capping cannot be a measure in the long-term and recommended better other applicable policies and measures.

Ng'ang'a (2017) did a research to establish impacts of interest rate capping on financial performance of the commercial banks in Kenya. The study adopted a descriptive research design coupled with content analysis. The population target was the 42 bank present in Kenya. The data collected was secondary having been obtained from the financial statements of the specific banks. The study established that financial performance as was determined by Return on equity was affected negatively by capping interest rates introduction in Kenya as a result of the reduced interest rates spread. Also, the asset quality measured by non-performing assets ratio was seen to exhibit a negative relationship to return on equity and therefore the lower the return on equity is as a result of the higher non-performing assets. The operating efficiency was measured by using operating costs to total operating income was seen to be negatively related to return on equity because high operating costs against operating income results to a lower return on equity. The study therefore recommended that the Kenyan government revises the interest rate capping policy to avoid the performance of bank from being affected negatively as well as input measure to ensure exploitation of the Kenyan people by banks ends. Banks were also urged to shift a lot of focus on interest income through innovativeness in their products as this creates buffer against lower rates spreads impacts. In addition, banks should devise means of improved operating efficiency as this promotes profitability and protects shareholders wealth.

Kisaka (2016) did a research to establish the effects of credit rating practices on loan book performance o of the commercial banks in Kenya. The project adopted a cross-

sectional survey design with a population study of all the forty four banks in the country and data collection sources were secondary and primary. The primary data was obtained using questionnaires that are semi-structured majorly on the extent of application of credit rating practices by banks and secondary data was from the specific banks annual reports mainly based on performance as per the loan book. The study found out that credit rating practices predict loan book performance of the banks. The bank used both statistical and relationship models for risk assessment and managers were involved in the credit decisions and that the banks consider the borrowers historical background, ability to repay loans, credit reference bureau report, the loan collateral and rationing of credit in the assessment of a credit risk. The study recommended commercial banks management should put more emphasis on the use of practices such as credit rating to lower the loan default rates. Further recommendations were that the banks to provide credit products that are unique to customers and become sensitive to prevailing economic situations for them to attain sustainability in the long-term as customers play a vital role in determining the banks success.

Nkuah (2015) carried out a study on the effect of loan portfolio quality on the performance of banks in Ghana. The study employed panel regression techniques. Among various data techniques, fixed effect model was identified as the best technique based on Hausman test between fixed and random effect. The study population was made up of 10 Ghanaian universal banks. The data for the study was obtained from secondary source (2007 - 2013). The return on equity and net interest margin were used to proxy financial performance while loan portfolio profitability and loan loss provision/gross loan advances were used as proxies for loan portfolio quality. The findings of the study established that loan portfolio quality has significant effect on the financial performance of the selected Ghanaian universal banks. The study

recommended that universal banks in Ghana should develop effective and efficient strategies and policies to improve the quality of their loans in order to improve their profitability. It further recommended that, efficient cost management must be adopted by Ghanaian universal banks to improve performance.

Kaggwa (2013) did a research to establish the effect interest rates would have on a loan portfolio performance of the commercial banks, with a study case being focused on centenary bank on Entebbe road in Uganda. This study adopted a study research design and data collection that was both quantitative and qualitative, using documentary reviews and questionnaires. The population targeted was seventy three respondents of centenary bank for a period between the years 2009-2012 with references to previous years for comparison purposes. These study findings depict that clients still default on loan repayments thus increasing negative effects in the bank even as the bank tries to follow regulations and procedures for administration of credit. These effects have developed risks in loan portfolio performance and the overall profitability. It also indicated that there was no effective analysis being done on the rising interest rates impacts on repayment of loan trends. The study therefore recommended that there be a loan portfolio management that is effective and that starts with an oversight of the risks in loans by individual, trends in the economy and needs assessment first then interest rates on the loans, as fair interest facilitate client voluntary desire to pay in an affordable manner. Also, introduce urgent strict enforcements towards credit officers who offer credit regardless of policies on credit in the bank.

Siddigui, Malik and Shah (2012) researched on the impact of interest rate volatility on non-performing loans in Pakistan. The study covered twenty one banks and used weighted average lending interest rate published quarterly by the state bank of Pakistan.

Weighted average of NPLs was obtained from banks financial statement. The outcome was that as much as there was a rise in the NPLs of commercial banks it was not solely impacted by the volatility of interest rates.

2.5 Conceptual Framework

The conceptual framework gives a portrayal of how the factors identified are related to each other. The independent variable is IRC, while the dependent variables are loan portfolio, total deposits, firm size and gross non-performing loans.

Independent Variable

Dependent Variable

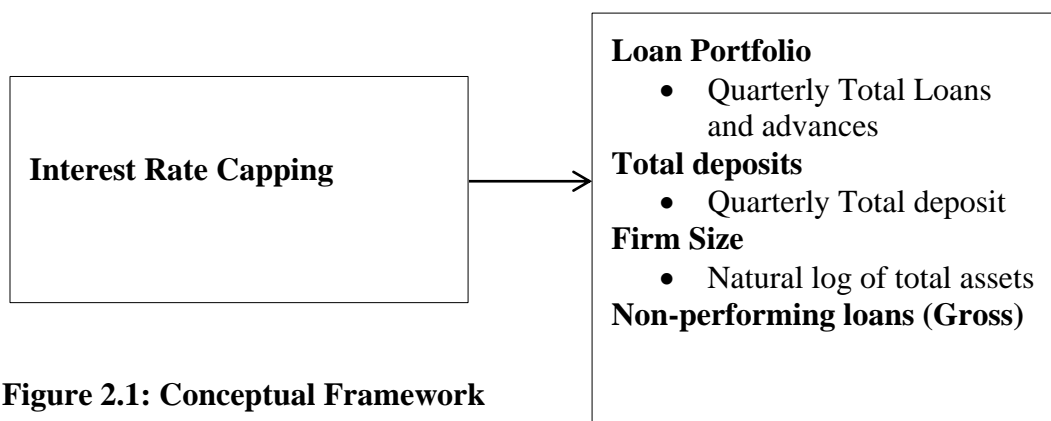


Figure 2.1: Conceptual Framework

Source: Researcher, 2018

2.6 Summary of Literature Review

This chapter outlines the existing literatures on interest capping, determinants of financial performance and theories outlining relationship between the variables. Despite the empirical and theoretical studies that have been carried out on the interest rate capping and financial performance, it is still not clear on the relationship between the two variables. Theoretically, different opinions have been outlined where modern portfolio theory supports that healthy loan portfolios are vital assets for banks in view of their positive impact on the performance of the banks. The rational expectation theory does not support interest capping because it impossible for lenders and investors to enjoy maximum gain with respect to economic conditions. On the other hand, Friedman on his free market theory argues that interest should be determined by

demand and supply of loanable fund in a free market hence capping should not be implemented.

Global studies found that in the short term bases there is a positive relationship between IRC and financial performance. The local studies shows that there is a there is negative relationship between capping of interest rates and financial performance. There is lack of consensus among the various scholars and this breeds the knowledge gap upon which this study seeks to fill. Motivated by this gap, this study, therefore, seeks to establish the effect of capping of interest rates on loan portfolio performance of banks listed at NSE.

CHAPTER THREE: RESERCH METHODOLOGY

3.1 Introduction

This chapter describes methods of research to be applied to objectively determine the effect of interest rate capping on loan portfolio performance of commercial banks listed at NSE. It also shows the population of study, research design, data collection and analysis criteria.

3.2 Research Design

The study used an event study descriptive research design. This method is appropriate because it enabled comparison of the interest rate capping reaction to an event by making an observation on loan performance before or after the event. Mugenda (2003) explains that an event study involves defining the event and estimating whether the IRC beyond normal or expected changes in response to the announcement of the interest capping.

3.3 Target Population

According to Mugenda and Mugenda (2003) target population refers to the total element which the research findings are generalized. The study focuses on listed commercial banks in Kenya. According to CBK Annual Report 2017 there are 11 listed commercial banks as illustrated in Appendix 1. The study involved all the 11 listed banks thus involve census study. The estimation period includes six quarters before capping and six quarters after capping

3.5 Data Collection

The study was facilitated by secondary data. Quarterly data was collected and analysed for a period of 12 quarters, with 6 quarters period prior (31st March 2015 to 30th June

2016) and 6 quarter after (31st Dec 2016 to 31st March 2018). Data was obtained from the Central bank of Kenya, were quarterly report of the banking sector in Kenya is usually carried out. The data collected was quantitative in nature. The total loan and advances, total deposit, total assets and total non- performing loans value was collected from each bank quarterly financial statements.

3.6 Diagnostic Tests

Normality test is done because it is impractical to achieve accurate and reliable deductions about the reality on whether the population from which the sample is derived is normally distributed (Ghasemi and Zahediasl, 2012). Shapiro Wilk test of normality was used to assess whether the data is normally distributed.

3.7 Data Analysis

Data collected was analysed using t -test statistic at 5% significant level with the help of statistical package for social sciences (SPSS) version 22. The t-test is a statistical tests that is used to compare means of two groups. This test is used to compare whether the movement in absolute means of the two periods is a matter of chance or not. This test was used to find out whether the differences between pre and post interest rates capping regimes is statistically significant.

Table 3. 1 Data Analysis Trend

Before rate capping				After rate capping								
March 31 st 2015	June 30 th 2015	Sept 30 th 2015	Dec 31 st 2015	March 31 st 2016	June 30 th 2016	Sept 30 th 2016	Dec 31 st 2016	March 31 st 2017	June 30 th 2017	Sept 30 th 2017	Dec 31 st 2017	March 31 st 2018
Q6	Q5	Q4	Q3	Q2	Q1	t=0	Q1	Q2	Q3	Q4	Q5	Q6

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter deals with the analysis of data collected and presents the findings of the study as set out in the research methodology. The results are shown in terms of a two-sample T-test that is used in comparing the means of two different samples. The main aim and objective of the study is to analyze the effect of interest rates capping on the loan portfolio performance by commercial banks listed at NSE in Kenya.

4.2 Diagnostic Tests

The researcher carried out diagnostic tests on the collected data. A test of Normality, Multicollinearity was undertaken.

4.2.1 Normality Test

To test normality of data, Shapiro Wilk was used.

Table 4.1 Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Total loans and advances before capping	.962	66	.430
customer deposits before capping	.949	66	.194
firm size before capping	.964	66	.473
Non-performing loans before capping	.984	66	.539
Total loans and advances after capping	.936	66	.252
Customer deposit after capping	.934	66	.261
Firm size after capping	.947	66	.187
Non-performing loans after capping	.966	66	.489

4.3 Descriptive Statistics

This sought to study the characteristics of the data for personal loans advanced, customer deposits, firm size and non-performing loans by listed commercial banks for the two periods under study. I.e. the period before and the period after the law on interest rates capping came into effect. The means, median, maximum, minimum, skewness and kurtosis statistics of the data were considered. Skewness is a measure of the availability of symmetry in data. Data is considered symmetry when it has similarity on the right and the left in relation to the central point. Kurtosis measures whether the data in the study is heavily tailed or light tailed relative to normal distribution. The kurtosis is levels between -2 to +2 are considered acceptable to prove the existence of normal distribution of -1.96 to +1.96 is considered within the normal distribution. The result of the findings for the two periods is shown in the tables below after first converting them to their natural logs;

Table 4. 2 Descriptive statistics before capping rate

	N	Minimum	Maximum	Mean	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Total loan and advances	66	10.6784	11.5411	11.12347	.008	.295	-.572	.582
Customer deposits	66	10.5194	11.6731	11.1802	-.436	.295	.184	.582
Firm size	66	10.7960	11.7533	11.3358	-.343	.295	-.175	.582
Non-performing loans	66	9.3165	10.5182	9.89278	.203	.295	-.235	.582

Source: Research Findings (2018)

The results from table 4.2 show the various means for the data on personal loans advanced, customer deposits, firm size and non-performing loans by commercial banks

in Kenya for a period of 6 months (March-2015 to Sept- 2016) before the law on capping of interest rates came to effect. The results show that the minimum level of personal loans advanced, customer deposits, firm size and non-performing loans granted by commercial banks in Kenya for the period was 10.6784, 10.5194, 10.7960 and 9.3165 respectively while the maximum level of personal loans advanced, customer deposits, firm size and non-performing loans granted by commercial banks in Kenya for the same period was 11.5411, 11.6731, 11.7533 and 10.5182 respectively. The mean level of personal loans advanced, customer deposits, firm size and non-performing loans granted for the period was 11.1234, 11.1802, 11.3358 and 9.89278 respectively. From the analysis skewness value fell between -0.436 and 0.203 therefore there is a normal distribution pattern for the data since the values vary between -1.96 and +1.96. In addition the kurtosis value falls between -0.5 to 0.184 this is within the accepted range of -2 to +2.

Table 4.3: Descriptive statistics after capping rate

	N	Minimum	Maximum	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Total loans and advances	66	10.6883	11.6260	11.1577	-0.170	0.295	-0.593	0.582
Customer deposits	66	10.5266	11.6986	11.2411	-0.743	0.295	0.398	0.582
Firm size	66	10.8250	11.8112	11.3945	-0.533	0.295	-0.240	0.582

Non-performing loans	66	9.7919	10.6412	10.1695	0.249	0.295	-0.781	0.582
----------------------	----	--------	---------	---------	-------	-------	--------	-------

Source: Research Findings (2018)

Table 4.3 shows that the total number of data points analysed per variable were 66, that is, the six quarters data for the 11 commercial banks listed at NSE whose full financial statements were available. The results from table 4.3 show the various means for the data on personal loans advanced, customer deposits, firm size and non-performing loans by commercial banks in Kenya for a period of 6 months (31st Dec 2016 to 31st March 2018) after the law on capping of interest rates came to effect. The results show that the minimum level of personal loans advanced, customer deposits, firm size and non-performing loans granted by commercial banks in Kenya for the period was 10.6883, 10.5266, 10.8250 and 9.7919 respectively while the maximum level of personal loans advanced, customer deposits, firm size and non-performing loans granted by commercial banks in Kenya for the same period was 11.6260, 11.6986, 11.8112 and 10.6412 respectively. The mean level of personal loans granted for the period was 11.1577, 11.2411, 11.3945 and 10.1695 respectively. The analysis of skewness and kurtosis show a normal distribution pattern for the data since the z-values vary between -1.96 and +1.96.

A comparison of the statistics for the two periods shows the following observations. First, the mean for the personal loans advanced, customer deposits, firm size and non-performing loans by commercial banks in Kenya after the capping of interest rates is higher than for the period before. On the other hand the maximum and minimum level of personal loans advanced, customer deposits, firm size and non-performing loans for the period after is also higher compared to the period before.

4.4 Paired Samples Test

On this section enables to establish whether the observed difference in descriptive statistics on personal loans advanced, customer deposits, firm size and non-performing loans issued by banks is dependable one or may have happened by chance. The results establish whether the increase of value of the loan book, customer deposits, firm size and non-performing loans by some banks was significant one across the industry. The table below shows paired sample tests of the loans after first converting them to their natural logs for both periods;

Table 4.4: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Total loans and advances -								
	Total loans and advances after capping	-.03427	.05669	.00698	-.04820	-.02033	-4.911	65	.0001
Pair 2	customer deposits before capping -								
	Customer deposit after capping	-.06093	.05463	.00672	-.07436	-.04750	-9.061	65	.0001
Pair 3	firm size before capping -								
	Firm size after capping	-.05868	.04418	.00544	-.06954	-.04782	10.790	65	.0001

Pair 4	Non- performing loans before capping - Non- performing loans after capping	-.27677	.15816	.01947	-.31565	-.23789	14.217	65	.0001
-----------	--	---------	--------	--------	---------	---------	--------	----	-------

The mean tend to be negative because the natural logarithms of the loans after the capping of interest rate was subtracted from those before the capping. This implies that more loans were issued after the capping law came into effect. On the other hand, the positive standard deviations imply that, loans before the capping of interest rate deviated more from the mean than after the capping. The small value of the standard error mean indicates that there is less movement in the mean before and after the capping of interest rate. The results on the last column of the table show that the banks positively and significantly changed the way they disbursed their loans even introduction of the capping law. The p- value for the 2-tailed t-test for all the variables is 0.0001. The p-value is significant if it is less than 0.05 (5%), since the confidence level used is 95%. From the table, then the effect of the capping of interest rates was significant, since p- value is 0.0001, which is less than 0.05.

4.5 Discussion of the Findings

A comparison of the statistics for the two periods shows the following observations. First, the mean for the personal loans advanced, customer deposits, firm size and non-performing loans by commercial banks in Kenya after the capping of interest rates is higher than for the period before. On the other hand the maximum and minimum level of personal loans advanced, customer deposits, and firms' size and non-performing

loans for the period after is also higher compared to the period before. The research purposed to explore the effect of interest rate capping on loan portfolio, customer deposits, firm size and non-performing loans. The analysis of descriptive statistics clearly shows that the passing of the law on interest rates capping had an effect on the monthly levels of personal loans granted by commercial banks in Kenya. There was an increase in the mean level of personal loans advanced by commercial banks in Kenya from log of 11.12347 to 11.1577. Customer deposits increased from 11.1802 to 11.2411, firm size changed from 11.3358 to 11.3945 while the nonperforming loans changed from 9.89278 to 10.1695.

Also noted was that both the analysis of the minimum and the maximum levels of personal loans advanced for the two period show a 75 increase for the minimum levels, and a 10% increase on the maximum levels. The t-test statistical test were done after the descriptive statistics to establish whether the changes noted for the two levels were significant at 95% confidence levels, leading to the conclusion of whether the law had any effect or not. The test results show p values of < 0.001 . Since then the p is < 0.05 , this can be said to be significant. The null hypothesis, H_0 that Personal loans advanced by commercial banks and levels of interest rates are independent is therefore rejected at 95% confidence levels. It can therefore be concluded that interest rates and levels of personal loans advanced by commercial banks are dependent. These findings thus show that at lower levels of interest rates, commercial banks in Kenya issue out higher levels of personal loans as compared to periods whereby interest rates are at much higher levels. Thus, contrary to the arguments that the capping of interest rates would lock out many households from accessing credit, the findings of this study clearly indicate that the inverse is true.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the findings, summary of the study, conclusions, the policy implications and recommendations for further studies.

5.2 Summary of the Findings

The research purposed to explore the effect of interest rate capping on loan portfolio performance of commercial banks quoted at the NSE. The customer deposits, firm size and non-performing loans were also used. Quarterly data was collected and analysed for a period of 12 quarters, with 6 quarters period prior (31st March 2015 to 30th June 2016) and 6 quarter after (31st Dec 2016 to 31st March 2018). Data was obtained from the Central bank of Kenya, were quarterly report of the banking sector in Kenya is usually carried out. Both descriptive statistics and t-test statistical analysis was done on the data obtained for the two periods in order to establish statistical conclusions of the effects of interest rates capping on total loan and deposits, customer deposits, firm size and non-performing loans granted by listed commercial banks.

Descriptive statistical analysis showed that the mean, maximum and minimum levels of personal loans granted by commercial banks in Kenya rose for the period after the law on the capping of interest rates was passed and came into effects, implying more personal loans were advanced to households by commercial banks in Kenya after the law came into effect. The t-test analysis showed that p values of 0.001, thus p being < 0.05 leading to a conclusion that the difference is significant, and that interest rates and levels of personal loans advanced by commercial banks are dependent. On the other hand the customer deposits also increased after interest rate capping leading to an

increase in firm size.

5.3 Conclusion

The results of this study revealed that interest rates and levels of personal loans advanced by commercial banks are related. The results indicated that there was a significant change and movement in the levels of personal loans for the two periods, and that after the interest rates capping at 14%, the levels of personal loans advanced by commercial banks increased significantly. This leads to the conclusion that at low interest rates, demand for personal loans increases, and that at higher rates of interest, demand for personal loans goes down.

The results of this study shows that if the law on capping of interest rates remain in place, the levels of personal loans advanced by commercial banks in Kenya may keep on increasing as more and more households are able to afford credit. High interest rates contribute in locking out a majority of the population who are not able to afford credit due to the high rates in place. Thus, this study found out that contrary to the arguments by commercial banks in Kenya and other economic players in the country that the law may be detrimental, the opposite has actually proved true, and that more households have been able to afford credit, driving up the levels of personal loans granted by commercial banks in Kenya.

5.4 Recommendation

Having concluded that there was significant change on the increase of value of the loan book, customer deposits and firm size the study recommends that commercial banks should adopt effective lending practices that will enable reduction of non-performing loans which have increased after capping of interest rates. The policy makers will need to keep a closer eye on the whole industry and how it continues to operate in the controlled environment.

Equally it is crucial to note that low interest rates may not cover the overall cost of credit thus leading to a limitation in the diversification of investment in the banking industry as more banks seem to be investing majorly in government securities. Thus, the government and other stakeholders need to consider other innovative methods to ease cost of credit in order to lower the interest rates in the market.

The stakeholders should also consider the publication of the relevant fees associated to each borrowing limits. This would improve access to credit information by consumers in making informed choices. In the long run this will lead to increased competition and low interest rates.

5.5 Limitation of the Study

The population of the study is only limited on commercial banks listed at NSE, therefore this findings finding cannot be generalized to non-listed commercial banks in Kenya. The period of the study was also a limiting factor in the study. Six quarters before and after the capping of interest rate was considered for the purpose of this study and may not have been sufficiently enough to give true implications of the interest rate capping law on loan portfolio performance by the listed banks. Longer period may have yielded enough and reliable data to authoritatively compare and contrast the changes in the industry. The banks may have adopted short term measures which may not be true reflection of the business long term strategy. For data analysis purposes, T- test analysis was applied. Due to the shortcomings involved when using T-test analysis and misleading results when the variable values change, the findings cannot be able to be generalized with certainty.

5.6 Suggestions for Further Research

The findings of the study necessitate the need for more studies to be done in this area. For

instance a researcher can study the effect of interest rate capping on loan portfolio performance by tier 2 and 3 banks. This will exclude the listed commercial banks. The study can also be done on how the interest rate control affected performance and loans issued to SMEs and individuals by all banks with the exclusion of corporate firms whose risk profile is different. This will accurately predict the nature of businesses affected by the introduction of the law. Additionally, the study can be done at a later time when more data is available to evaluate whether any significant change may have occurred. Finally the study suggest for more study on other parameters affecting loan portfolio performance other than interest rate capping.

REFERENCES

- Beck, R., Jakubik, P., PiloIU, A. (2013) Non-Performing Loans: What Matters in Addition to the Economic Cycle? European Central Bank. Working Paper Series No 1515
- Central Bank of Kenya, (2016). Bank Supervision Annual Report 2016. Nairobi, Kenya
- Central Bank of Kenya, (2017). Bank Supervision Annual Report 2017. Nairobi, Kenya
- Chirwa, E. W. and Mlachila, M. (2004). Financial Reforms and Interest Rate Spreads in the Commercial Banking System in Malawi, IMF Staff Papers 51(1)
- Cohen, J., Cohen, P., West, S.G. and Aiken, L.S. (2013) *Applied Multiple Regression/Correlation Analysis for the Behavioral Science*. Routledge, New York.
- Corb, H. (2012). *Interest rate swaps and other derivatives*. New York ; Chichester: Columbia University Press.
- Ellison, Ana and Robert Forster. 2006. "The Impact of Interest Rate Ceilings: The Evidence from International Experience and the Implications for Regulation and Consumer Protection in the Credit Market in Australia." Policis Publications, United Kingdom.
- Emmanuelle,J.(2003).Monetary and fiscal policy, Kenya: University of Nairobi.
- Frenkel, J. A. and Razin, A. (2010). *Budget Deficit and Interest Rates in the World Economy*: National Bureau of Economic Research. Cambridge, Massachusetts.
- Friedman M. (1962). Capitalism and freedom. Chicago, IL: University of Chicago Press, 202-203

- Gale, D. (2010). Capital Regulation and Risk Sharing. *International Journal of Central Banking*, 6(4), 187-204
- Ghasemi, A., and Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *International Journal of Endocrinology and Metabolism*, 10, 486-489.
- Gollinger, T., L and J., B Morgan (1993). Efficient Frontier for a Commercial Loan Portfolio. *The Journal of Portfolio Management*, 2, 39-46.
- Greenidge. K. and Grosvenor, T. (2010). Forecasting Non-performing loans in Barbados. *Journal of Finance and Economics*, 1(5), 79-108
- Hester, P. and Benjamin, K. (2016). Reframing Financial Regulation: Enhancing Stability and Protecting Consumers: Mercatus Center at George Mason University.
- Horcher, K. A. (2006). *Essentials of managing treasury*. Hoboken, NJ: John Wiley and Sons.
- Jovovic, J. (2014). Determinants of Non-Performing Loans: Econometric Evidence Based on 25 Countries. *Unpublished Master Project*, City University London.
- Khan, K. (2012). *Financial Management*. New Delhi: Tata McGraw-Hill
- Kibobo, G, W (2017). Effect of Interest Rate Capping on Financial Performance of Equity Bank in Kenya, *Unpublished MBA Project, The Management University of Africa*
- Kisaka, G. (2016). Effect of Credit Rating Practices on Loan Book Performance of Commercial Banks in Kenya, *Unpublished MBA Project, University of Nairobi*

- Klein, N. (2013). Non-Performing Loans in CESEE: Determinants and Impact on Macroeconomic Performance. *IMF Working Papers*, 13(72)
- Kodongo, O., and Ojah, K. (2012). A comparative examination of currency risk pricing and market integration in the stock markets of Nigeria and South Africa. *Review of Development Finance*, 2(3-4).
- Kothari, S., and Warner, J. (2005). Stock Returns, Aggregate Earnings Surprises, and Behavioral Finance. *Journal of Financial Economics*, 25, 100-144
- Maimbo, S. M. and Gallegos, C. A. (2014). Interest Rate Caps Around the World: Still Popular, but a Blunt Instrument. *World Bank Policy Research Working Paper*, 5, 89-130
- Markowitz H. (1959). *Portfolio Selection*. The Journal of Finance, March, 1(3) 77-91.
- Markowitz H. (1959). Portfolio Selection. *The Journal of Finance*, 1(3) 77-91.
- Mbua, S, N. (2017). Effect of interest rate capping by central bank of Kenya, on the financial performance of listed commercial banks in Kenya, *Unpublished MSC Finance project, United States International University*.
- Miambo, S, and Gallegos, C. (2014). Interest Rates Caps around the World Still Popular, but a Blunt Instrument. *Policy Research Working Paper*, 1(1)
- Miller, H. (2013). Interest Rate Caps and Their Impact on Financial Inclusion. *Economic and Private Sector Report*, Professional Evidence and Applied Knowledge Services.
- Mugenda, O. M. and Mugenda, A.G. (2003). *Research Methods. Quantitative and Qualitative Approaches*. Press Africa Center for Technology Studies, Nairobi

- Muiru, M, S., Oluoch, W, O and Ajang, J. (2018) Effect of Loan Portfolio Management on The Profitability of Deposit Taking Microfinance Institutions in Nairobi, Kenya. *International Journal of Economics, Commerce and Management United Kingdom*, 6(2), 283- 295
- Muth, J. F. (1961). Rational Expectations and the Theory of Price Movements. *Econometrica*, 29 (3), 315–335
- Nakeba, A. (2010). The Role of Credit Management in the loan Performance of Indigenous Commercial Banks in Uganda. *Unpublished research project*, Makerere University.
- Ng'ang'a, A. K. (2017). The Impact of Interest Rate Capping on Financial Performance of Commercial Banks in Kenya, *Unpublished MSC Project*, University of Nairobi
- Nkuah, E. (2015). The effect of loan portfolio quality on the performance of banks in Ghana: *Kwame Unpublished Master of Business management Thesis*, Nkrumah University of Science and Technology.
- Qin, X. and Ndiege, B. O. (2013). Role of Financial Development in Economic Growth; Evidence from Savings and Credits Cooperative Societies in Tanzania. *International Journal of Financial Research*, 4(2), 115-125
- Ramadan, I. Z. (2013). Dividend Policy and Price Volatility. *International Journal of Academic Research in Accounting, Finance and Management Sciences*. *Empirical Evidence from Jordan* 3(5), 63-71

Rodgers, K. (2013). Loan performance and profitability of microfinance institutions.

A case study: *Pride Microfinance Ltd, Nateete Branch: A Research project; Makerere University Uganda.*

Siddiqui, S. Malik, K. and Syed, Z.A. (2012). Impact of Interest Rate Volatility on Non-performing Loans in Pakistan, *International Research Journal of Finance and Economics*, 84, 640-652

Stiglitz, J. E. and Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *American Economic Review*, 71, 393-410

APPENDICES

Appendix I: Listed Commercial Banks at the Nairobi Securities Exchange

1. Barclays Bank Of Kenya Ltd
2. Cfc Stanbic Bank Ltd
3. Co-Operative Bank Of Kenya
4. Diamond Trust Bank Ltd
5. Equity Bank Ltd
6. I & M Bank Ltd
7. Kenya Commercial Bank Ltd
8. National Bank Of Kenya
9. National Housing Corporation
10. Nic Bank Ltd
11. Standard Chartered Bank

Appendix II: Data before Capping of Interest Rate

Log of Total Loans and Advances	Log of Total Customer Deposits	Log of Total Assets	Log of Total Non-performing Loans
11.09793505	11.19327539	11.36395151	9.78171144
11.12565951	11.21344794	11.37051285	9.774283625
11.14300822	11.2026198	11.34393777	9.843387402
11.16250168	11.21770235	11.38179533	9.727229331
11.18310601	11.22771346	11.38285143	9.89715059
11.18555409	11.26215595	11.40848118	9.942734083
10.9557819	11.02275227	11.26496322	9.562311664
11.00076314	11.06030657	11.30876746	9.590934745
11.02007247	11.05521526	11.31841336	9.608091843
11.02111305	11.02631355	11.31900589	9.686492732
11.01519543	11.03661923	11.31866372	9.71927194
11.08234764	11.19095706	11.32703907	9.759816159
11.2650288	11.3689374	11.4908159	9.888967195
11.31141473	11.3950592	11.51198596	9.920349549
11.32707277	11.40403353	11.52229464	9.941643937
11.31925584	11.42389861	11.53468364	9.913241266
11.32985343	11.41781026	11.54496075	9.933567559
11.34495944	11.44443895	11.55991699	10.01086756
11.16098214	11.21288203	11.3408283	9.31653079
11.20948445	11.23880825	11.36931534	9.372040332
11.23371657	11.2432939	11.38803884	9.439032058
11.24930813	11.2879178	11.43394351	9.691457865
11.25471535	11.31380194	11.4561922	9.857479709
11.25170291	11.33468388	11.47988608	9.869355241
11.35171184	11.44209512	11.57115557	10.00255351
11.37440946	11.4766822	11.60313683	10.03592027
11.42061903	11.49981478	11.64909479	10.07110296
11.43119153	11.48024932	11.6315072	9.958026057
11.43936019	11.47598977	11.63365748	10.03804873
11.4298044	11.50410468	11.64781006	10.11164225
11.0232929	11.02333266	11.19683336	9.38391962
11.04448288	11.05042847	11.21186455	9.392057349
11.06536152	11.06962599	11.22718208	9.578347023
11.060423	11.06741056	11.21701678	9.705197568
11.06972936	11.08678595	11.24374225	9.761433228
11.07095561	11.11440751	11.26186072	9.771022678
11.4728025	11.59890237	11.70779559	10.34005121
11.50596467	11.64643924	11.75328406	10.38351319
11.5411418	11.67307158	11.70523217	10.39001528
11.53903679	11.62776599	11.74670747	10.37065139

11.53900511	11.62678485	11.74569983	10.48340003
11.54082477	11.63691305	11.74814303	10.518228
10.84541037	10.9307595	11.06798692	9.843077227
10.85391324	10.98744904	11.09491694	9.83210221
10.86663416	10.95816868	11.07218002	9.81022519
10.83125525	11.04384335	11.09843714	10.07049956
10.8216133	10.99757976	11.06286423	10.22991024
10.81145575	10.98031758	11.06640796	10.43619739
10.67841501	10.51942915	10.79598861	9.587894632
10.69882731	10.57329942	10.81966545	9.618992262
10.71354696	10.57481665	10.82284645	9.609795504
10.72444809	10.61977227	10.85527337	9.612503699
10.7279215	10.61137519	10.85868904	9.655520388
10.72807703	10.59935717	10.85310432	9.729469256
11.02348234	10.982853	11.15755985	9.96167979
11.03464297	11.0218092	11.18527886	9.945096617
11.04609105	11.02439139	11.19194976	9.837435146
11.06449281	11.05062965	11.21955379	10.15690919
11.04916996	11.04270125	11.20655923	10.1268336
11.04980249	11.04922084	11.22803659	10.09917825
11.05713497	11.21332668	11.36706547	9.921722518
11.09080833	11.21275145	11.35830328	9.921531766
11.10213767	11.22165983	11.36481816	10.03264124
11.06117125	11.23561948	11.36915172	10.16725588
11.04055119	11.2663113	11.39751779	10.18778505
11.05791707	11.28074339	11.40815211	10.1863997

Appendix III: Data after Capping of Interest Rates

Log of Total Loans and Advances	Log of Total Customer Deposits	Log of Total Assets	Log of Total Non-performing Loans
11.22662446	11.25085845	11.41445859	10.05965053
11.22711197	11.25896255	11.41628876	10.06867867
11.21426764	11.27566195	11.42843748	10.07914885
11.21018252	11.30183375	11.44711123	10.07684091
11.22633543	11.26946013	11.43325346	10.10087772
11.21890571	11.28620098	11.4634324	10.10138585
11.06291171	11.07674316	11.33179711	9.845911022
11.06207521	11.11580466	11.32763108	9.848429237
11.07186346	11.1144905	11.35180486	9.811755321
11.08403445	11.17855068	11.37391814	9.968969786
11.11572968	11.18938017	11.39574339	10.01530798
11.10889345	11.1695827	11.3961748	10.01669483
11.37463025	11.41522957	11.54636527	10.05208473
11.39068474	11.44692055	11.57802277	10.0505667
11.40245495	11.45599135	11.58356861	10.08716591
11.41395315	11.46084378	11.58916671	10.22869136
11.40459709	11.45844401	11.5875512	10.27326332
11.40282009	11.47112079	11.5996576	10.45283699
11.27022029	11.37676603	11.51593276	9.876446998
11.2751116	11.40041944	11.52549755	9.926449515
11.28209906	11.40881361	11.5361925	9.965140246
11.29290451	11.42332419	11.55291643	10.2196565
11.29236276	11.42528448	11.56026946	10.17125664
11.28805383	11.43433281	11.56547552	10.18739146
11.42499279	11.52788579	11.67551543	10.27309444
11.41813417	11.54097281	11.69210055	10.29024158
11.42338706	11.55965332	11.70324347	10.30885242
11.42398134	11.56679267	11.71453778	10.31543896
11.44574687	11.57187559	11.71971713	10.25490271
11.43309024	11.58254307	11.72245354	10.25789859
11.08169598	11.11272585	11.26044701	9.914649753
11.10620743	11.17088493	11.30049092	9.915954987
11.11141051	11.14810221	11.291401	9.947883273
11.12449474	11.15017331	11.3030652	9.996168786
11.13065019	11.16903389	11.30673592	10.2472
11.13112552	11.17468273	11.31611169	10.30677865
11.58630068	11.65144646	11.77469185	10.50260266
11.5971369	11.6597405	11.78229685	10.50719969
11.60956877	11.68380739	11.79989722	10.5217783
11.6227262	11.69574867	11.8084357	10.54072091
11.62599591	11.69857825	11.810682	10.5739902
11.62181809	11.6958021	11.81122228	10.64122496

10.74051888	10.97252815	11.04955187	10.47693797
10.76437127	10.96741935	11.06318118	10.4627731
10.75605374	10.99469524	11.06680615	10.46829529
10.76256133	10.98866544	11.06550988	10.47138428
10.71900829	10.97440008	11.04089154	10.44181909
10.70884125	10.93893482	11.02215319	10.46149538
10.73615423	10.58072346	10.85691091	9.791932776
10.73717925	10.58379578	10.83242187	9.891179951
10.72237256	10.57238039	10.85505161	9.898443018
10.7092208	10.52658567	10.84995819	9.90873973
10.69582861	10.56419946	10.82956823	9.914457772
10.68826719	10.55523592	10.82503604	9.928378286
11.05867755	11.04853768	11.2290646	10.13315273
11.06566572	11.07129995	11.24011053	10.13989501
11.06733066	11.12436972	11.27758589	10.15660754
11.07391117	11.11869308	11.29157981	10.16739181
11.07831373	11.14275405	11.31423065	10.15597213
11.06413858	11.15815849	11.30056438	10.20240371
11.08888363	11.27090751	11.39877652	10.17719505
11.06772314	11.31178922	11.43812273	10.18660531
11.05323313	11.35118312	11.46101397	10.22822301
11.05782294	11.3774818	11.49206838	10.23005182
11.10138433	11.3290912	11.45594739	10.24602146
11.05632393	11.36546221	11.46833969	10.25026097

