

**EFFECT OF INTEREST RATE CAPPING ON LOAN DEFAULT RATE AMONG  
DEPOSIT TAKING MICRO FINANCIAL INSTITUTIONS IN KENYA**

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## **DECLARATION**

I declare that this research project is my original work and has not been submitted to any other college, institution or university for academic credit.

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This research project has been submitted for examination with our approval as the appointed supervisors.

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## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>viii</b>
<b>LIST OF ABBREVIATIONS AND ACRONYMS</b> .....	<b>ix</b>
<b>CHAPTER ONE: INTRODUCTION</b> .....	<b>1</b>
1.1 Background of the Study .....	1
1.1.1 Interest Rate Capping.....	3
1.1.2 Loan Default Rate .....	4
1.1.3 Interest Rate Capping and Loan Default Rate .....	5
1.1.4 Deposit Taking Micro Financial Institutions in Kenya.....	6
1.2 Research Problem .....	8
1.3 Research Objective .....	9
1.4 Value of the Study .....	9
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	<b>11</b>
2.1 Introduction.....	11
2.2 Theoretical Review .....	11
2.2.1 Loanable Funds Theory .....	11
2.2.3 Free Market Theory .....	13

2.3 Determinants of Loan Default Rate .....	14
2.3.1 Capping of Interest Rate .....	14
2.3.2 Management Efficiency .....	15
2.3.3 Gross Loan Book .....	15
2.4 Empirical Review.....	16
2.5 Summary of Literature Review.....	18
2.6 Conceptual Framework.....	19
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>20</b>
3.1 Introduction.....	20
3.2 Research Design.....	20
3.3 Population and Sample .....	20
3.4 Data Collection .....	20
3.5 Data Analysis.....	20
3.5.1 Test of Significance .....	21
<b>CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND</b>	
<b>INTERPRETATION OF DATA FINDINGS.....</b>	<b>22</b>
4.1 INTRODUCTION .....	22
4.2 Descriptive Statistics.....	22
4.3 Diagnostic Tests.....	23
4.3.1 Normality Test .....	23

4.3.2 Linearity Test .....	24
4.3.3 Multicollinearity Test.....	25
4.3.4 Homoscedasticity Test.....	26
4.4 Correlation Analysis .....	27
4.5 Regression Analysis.....	28
4.5.1 Regression Model Summary.....	29
4.5.2 Analysis of Variance.....	29
4.5.3 Regression Coefficients .....	30
4.6 Interpretation of Study Findings .....	32
<b>CHAPTER FIVE: SUMMARY AND CONCLUSIONS.....</b>	<b>34</b>
5.1 Introduction.....	34
5.2 Summary.....	34
5.3 Conclusions.....	35
5.4 Policy Recommendations.....	35
5.5 Study Limitations.....	36
5.6 Areas for Further Studies .....	36
<b>APPENDIX I: DATA COLLECTION SHEET .....</b>	<b>43</b>
APPENDIX II: DATA USED .....	44

**APPENDIX III: KENYA CBK LICENSED DEPOSIT TAKING MICROFINANCE  
INSTITUTIONS.....46.3**

## LIST OF TABLES

<b>Table 4. 1: Descriptive Statistics</b> .....	22
<b>Table 4. 2: Tests of Normality Table</b> .....	24
<b>Table 4. 3: Multi-Collinearity Test Table</b> .....	26
<b>Table 4. 4: Homoscedasticity Table</b> .....	27
<b>Table 4. 5: Correlations Table</b> .....	28
<b>Table 4. 6: Model Summary Table</b> .....	29
<b>Table 4. 7: ANOVA TABLE</b> .....	30
<b>Table 4. 8: Regression Coefficient Table</b> .....	31

## ABSTRACT

Capping of interest rates was undertaken by the government of Kenya as a strategy to help curb the increased lending rates that were charged by commercial banks. The capping affected commercial banks while deposit taking microfinance institutions were not affected by the regulation. However, a spill-over effect was experienced by these institutions as most of the borrowers were not able to secure access of loan facilities from commercial banks since their risk profiles were higher than the potential return to the commercial banks. These individuals therefore resulted to seek borrowing in deposit taking microfinance institutions among other informal lenders who would charge arbitrary interests. This study sought to understand the effect of interest rate capping on loan default rates. A regression model was undertaken to determine the relationship between interest rate capping and loan default rate. Secondary data was collected for a period of five year (2014-2018) for each variable. The capping of interest rate variable was tested by introduction of dummy variables, 1 and 0. 1 represented the period after capping interest rate while 0 represented period prior to capping of interest rates. Other variables that were used as control variables included the management efficiency as well as loan books by the deposit taking MFIs. Full data was obtained from 9 MFI institutions, which were used in data analysis. The diagnostic test undertaken, indicated that data did not pass on normality test, while it passed on all the other tests. Non parametric tests were therefore conducted in form of spearman's correlation and the variables were standardized by calculating the z scores for the variables. The regression model indicated a coefficient of determination of 23.9% which indicated a relatively strong model. The analysis of variance indicated that the null hypothesis should be rejected and the p value was less than alpha value that indicated that the effect was significant. The effect of interest rate capping was found to be positive with a spearman's rho of 0.31 while management efficiency, and loan book had negative correlation. The general result findings was that there was a statistically significant effect of capping interest rates on loan default rate among the deposit taking microfinance institutions in Kenya.



## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>CBK</b>	Central Bank of Kenya
<b>CBR</b>	Central Bank Rate
<b>KCB</b>	Kenya Commercial Bank
<b>KWFT</b>	Kenya Women Finance Trust
<b>MFI</b>	Micro Financial Institutions
<b>NGO</b>	Non-Governmental Organizations
<b>UNDP</b>	United Nations Development Programme
<b>USA</b>	United States of America
<b>USAID</b>	U.S Agency for International Development
<b>SME</b>	Small and Medium Enterprises

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Villegas (1982) said that capping of interest rate is maximum amount that is set on interest rates charged on loans advanced where the loan default rate is arguably the proportion of debt outstanding for a period of more than 90 days to the total amount of loans issued. It's the government that enacts the ceiling of interest rate Capping of interest rates is enacted by the government or other authorities, with an aim of pegging interest rates charged and therefore control the maximum possible interests paid for money borrowed to lower loan default rate as loan burdens are expected to decrease with reducing the charge for low interest rate. However, the rise in for loans demand may also have negative consequences on total loans defaulted by clients. Lending institutions have always been very instrumental in the growth of any economy. One of the main factors that makes them vital is their ability to create credit. They enhance a multiplier effect of credit advanced to their clients that increases total credit. There are various ways in which the institutions use to advance credit which include personal unsecured loans, credit cards issuance, invoice discounting, mortgages, business loans and others. However, one of the major risks faced by all lending facilities is default on funds that have been lent out, which increases nonperforming loans. This risk affects Micro Financial Institutions (MFIs) more because of their limited operating activities (Kargi, 2011).

A number of theorists have suggested theories that pertain to the defaulting of loan rate and interest rate relationship. Ohlin (1937) developed what was later referred to as loanable funds theory. Proponents of this theory suggest that between the interest rates charged by lenders and the demand of this loan there is a inverse connection. The theorists therefore suggested that increase in interest rates reduces the loans demand as loans become expensive that decreases their rate of return on investments. Other relevant theories include classical theory of interest rates that suggest that demand and supply of savings affect interest rates. Free market theory that suggests regulations to be put in place in regard to interest rates, to ensure development. The theories argue both in support of capping of interest rates as well as against capping of interest rates. Alshatti (2015) stated that MFIs are bedeviled with many risks such as financial risks, credit risks,

foreign exchange risks, interest rate risks, reputational, legal risks and operational risks while conducting their business operations. Credit default risks are however more rampant and refer to the probability of the borrower failing to repay either the total amount of the loan or part of the loan extended. (Han, 2015).

Chaibi and Ftiti (2015) indicated that loan default risk is a problem cutting across financial institutions from across the globe both locally, regionally and globally. As per a report by a Chinese Banking Regulatory Commission, there has been increment of the loan default risk pertaining to financial institutions in the country. This trend was observed to persist increasing for Chinese financial institutions through the year 2014. The volume of nonperforming loans in the country's financial institutions registered a surge to 842.6 Billion Yuan from 250.6 billion Yuan from the preceding year 2014 (Chi & Li, 2017). Regionally in Africa, loan default risk is also a problem that continues to cut across financial institutions. In 2017, the Ethiopia government opted to put eighteen commercial banks under the direct supervision of its National Bank and a majority of them are required to maintain a significant amount of provisions relating to Loans and Advances as there is high loan provision expenses which are above the Basel standard (Tadesse, 2017). In the USA, in August 2007, the collapse of the sub-prime mortgage market was precipitated by the rampant increase of loan default risk in early 2006 experienced in all sectors (Greenidge & Grosvenor, 2010). The 2007 – 2009 financial crisis resulted in immense trading losses and insolvency problems of financial institutions globally. The well noted New York based bank JPMorgan Chase is an evident example of major losses as it lost \$2 Billion in May 2012 as a result of speculative hedging closely related to the trading practices that caused the losses in 2011 (Kopecki *et al.*, 2012).

The overwhelming evidence on impact of loan default on the depository institutions of Kenya fiscal performance and economic performance in a country suggests that it is an important factor that should be considered by both micro and macro policy makers. Capping of interest rates affected institutions that are governed by the banking act, which basically means the commercial banks. Commercial banks retaliated by reducing the total supply of loans to risky individuals as well as start-up firms and SMEs that were considered to be of high risk. The government of Kenya has also significantly increased its domestic borrowing, which has meant that the commercial banks find it better to issue

loans to low risk government than issue loans to high risk clients at almost the same interest rates. Clients who were therefore not in position to secure loans in commercial banks therefore resulted to Deposit Taking MFIs, MFIs, Fintech companies among other places. The influxes of demand for loans in Deposit Taking MFIs signify an increase in total loans issued by the Deposit Taking MFIs. Therefore, an increased total loan book would signal an effect on the total loan default rate.

### **1.1.1 Interest Rate Capping**

Villegas (1982) defined interest rate as the cost that is charged by lenders on the use of funds they advance to the borrowers. The borrowers refund the total funds borrowed together with the extra cost as interest which serves to compensate the lenders for the risk they take in advancing credit as well as the discomfort they persevere when they postpone their present consumption needs (Gregoriou et al., 2013). Interest rate is vital for any commercial bank as it determines the spread between the interest rate the commercial bank charges its client, and the interest rate the bank pays to depositors of funds. The higher the interest rate spread, the higher the profitability of the bank. Interest rate capping is setting a certain ceiling, on the amount of interest rate the commercial bank can charge its client, as well as setting the minimum amount of interest the bank can pay depositors of funds (Ferrari, 2018).

There are four major elements that constitute the banking interest rates, these are; the actual cost of funds, overheads, provision for defaulting loans, and bank profitability. The target of every sensible financial institution is to increase its owners' wealth through profitable business which is majorly from the interest income earned from loans issued. In addition, in the scenario where there is default on loans this expense is charged on the remaining borrowers indirectly. Further to these, the expenses of the firm which include overheads incurred in administration, the cost of funds, the loan processing fees, salaries to employees, technological costs and expansion cost are to be covered by the interest income (Miller, 2013). These costs vary from one financial institution to the other and therefore placing caps/ floors could be detrimental and unfair to some of the financial institutions.

The intended motive for enacting these restrictions on the interest rates in Kenya was to curtail the exorbitant profit financial institutions earned while the borrowers suffered from the unfair interests charged. Therefore, the Kenyan government thought it of important to intervene and secure consumers through CBK. This was geared towards motivating more lenders to issue loans thus resulting into more people and institutions accessing viable credit. However, the downside results from the high demand of loans that push the financial institutions to instill stringent conditions on borrowing and therefore, exclusive clients with high value collaterals are able to access the loans while the rest are denied. The capping of interest rates also brought about a nationwide debate on whether the move by government to cap interest rates would have positive or negative long run effects. The regulator, Central Bank of Kenya, was also opposed to capping of interest rates and commercial banks of course went to court in order to have the law abolished on the grounds of being unconstitutional. Commercial banks have experienced reduced activity in form of opening new accounts and branches in the country. They have also laid off staff in the period after capping of interest rates. This shows that capping of interest rates is a major event that is worth the study, on the effects of such an event to different factors (Ferrari, 2018).

### **1.1.2 Loan Default Rate**

Loan default rate is the proportion of debt issued past 90 days to the total amount of funds issued as loans by a commercial bank. According to CBK (2017) any loans that remains inactive for a period of 90 days is considered to be non-performing loan and the borrower is considered at default of the said loan. However, some jurisdiction only consider loan that has not been serviced for 120 days for it to be considered non-performing.

Lenders use default rate statistics to measure their exposure to risk of financial loss that the borrower may fail to meet his/her full repayment and warning of operational problems due to lack of funds.

Conventionally, Micro Finance Institutions in Kenya have operated in relatively stable environment, but today the industry is faced with increased challenges especially from the new regulations and advanced technology. In August 2016, the Banking

(Amendment) Act, 2016 took effect and it sets the cap on the lending rate at the amount not exceeding four per cent the Central Bank base rate of 10 percent (Central Bank of Kenya, 2016). This interest rate capping has resulted competition among the MFIs at level ground, with no MFI having an advantage over another in terms of lending and deposit rates. As a consequence, the new regulation has even made it worse for the MFIs to compete with the commercial banks in lending since most MFIs cannot afford to lend below the rate of 14% thus forcing customers to switch to banks for loans at the expense of MFIs.

As a result of the new regulations, the performance of MFIs as noted by the CBK (2017) report, has continued to worsen year after year. In 2017, the microfinance banks have experienced an amount of decline in growth registering a 7% decrease in total assets in contrast to the year 2016 where the total assets increased by 5% and the year 2015 where it grew by 22%. Loans Net advances also decreased by 8.9% after the interest rate capping law in the year 2017. Furthermore, customer deposits declined by 3% in the year 2017 after the interest rate capping law. More negative trends were seen among the MFIs where a total of 2,792 deposit account holders transferred their accounts from MFIs in period of one year after the interest rate capping (CBK, 2017).

CBK (2017) report further indicated a decline in the overall performance by microfinance banks with an aggregate loss before tax of Ksh.622 million for the year ended 2017 as compared to an aggregate loss before tax of Ksh.377 million in the year 2016. The overall MFIs performance revealed a negative return on assets of -0.9% in the year 2017 and a negative returns on equity of -5.5% which indicates that even after the inception of the interest rate capping MFIs have continued to perform poorly. The report also indicated shrinkage in the loans by 8.9% compared to the previous years which show that the customers are shifting to commercial banks for loans since they are cheaper facilities (CBK, 2017).

### **1.1.3 Interest Rate Capping and Loan Default Rate**

Corb (2012) argues that one of the most significant factors that influences the performance of loans among financial institutions is the interest rate. Johnson (2017) argued that a downward fluctuation in market interest rates affects loans issued positively

and increases the default rates. There is a direct connection between the interest rate and amount of credit uptake with lower interest rates subject to attracting high number of defaulters. The end result of high numbers of loan being issued is the added risk of the borrowers defaulting on the loan and consequently negatively affecting the performance of financial institutions.

Mang'eli (2012) also states that the banking industry is positively influenced and not hindered by increase of interest rates. Ferrari, Masetti and Ren (2018) indicated that interest rate ceiling has adverse effects in the sense that risky and smaller borrowers will experience hardship in accessing and approval of loans. In addition there will be low number of financial institutions with reduced branch density, reduced price transparency, as well as increment of fees unrelated to interest and commissions. These will ultimately impact on the profitability of financial institutions as well as impact on overall loan default rate.

Maimbo and Gallegos (2014) indicate that interest rate ceiling/capping hurts the economy negatively and they agitate for other ways of managing interest rates on loans. Okwany (2017) has indicated that interest rate capping leads to the reduction in financial institutions' profits as there is increased default risk.

#### **1.1.4 Deposit Taking Micro Financial Institutions in Kenya**

MFIs in Kenya have been developing since the mid-1990s. Legislations enacted promoted the growth of this sector and in 2006 the Micro Finance Act was passed that became active in 2008. This trend continued and in the year 2010 there were 24 large microfinance institutions in the country that catered for approximately 1.5 million people with an aggregate capital of approximately US \$ 1.5 billion. Among these micro finance institutions there were exceptional that were able to grow into fully fledged banks such as Equity Bank which commanded a 73.50% and Kenya Women Microfinance Bank claiming 12.06%. The creation of the law that allowed creation of DTMs enabled older and larger MFIs such as Century, Rafiki and Remu DTM to mushroom to competitive banking institutions. There are 13 licensed deposit taking microfinance banks conducting business in Kenya currently, according to the CBK report (2017). They are classified into three groups, depending on the market share they influence. There are 3 large institutions

that have an aggregate market share of about 90%, there are 3 medium microfinance Institutions and 7 small microfinance institutions that control 3.4% of the market share. Due to government regulations and stiff competition the finance environment has undergone major changes. According to Mutai (2012), each financial institution must be aware of how to undertake its business in the market while still sustaining and safeguarding its competitiveness. NGOs also played a crucial role in the formation of DTM in liaison with the government through provision of donor funds while the government facilitated this noble initiative by providing a suitable and viable environment to achieve set objectives. Later commercial banks came in and provided support to the NGOs by financing the business operations (Ombati & Muturi, 2017).

In Kenya, Micro Finance Institutions bridge the gap left by big banks by providing loans to the ignored populace and thus playing a vital duty in development of the economy. As a result the poor customers are able to access micro loans and savings which would have been inaccessible were it the banks involved only. The current state show that the Micro Finance institutions cater for 17.9% of the population, the banks cater for approximately 22.6% of the population, 26.8% depend on the informal financial services; while the rest 32.7% of the population is not reached by any financial service. The introduction of the capping of interest rate in 2016 affected institutions that are governed by the banking Act. This means that the law was only applicable to depository institutions of Kenya and not applicable to micro financial institutions in Kenya which takes deposits. However, as a result of spill over by the populace that is ignored by commercial banks, more individuals resulted into borrowing in these micro finance institutions (Ombati & Muturi, 2017).

A bill was passed in Parliament sanctioning the amendment of the Banking Act in Kenya. The content of this amendment was to regulate the interest at which banks offered their loans by instructing a ceiling/capping on the interest rates. In addition the Act directed the rate which banks should apply on deposits by setting a floor/the lowest rate at which banks should pay on the deposits acquired. The specifics of the Amendment was an interest rate lending ceiling not exceeding four (4%) percent of the Central Bank Rate (CBR) and a floor on the deposit rate of not less than seventy (70%) percent of the Central Bank Rate. This was however not the first attempt at controlling interest rates by law in Kenya. In 2001, Parliament attempted to amend the CBK Act with the proposition



of having the lending rates be capped at four (4%) percent above the 91-day Treasury bill and deposit rates at four(4%) percent below the 91-day Treasury bill rate resulting into a spread of eight percent. In 2013, a proposition by the Kenya Parliamentary Budget office was to benchmark the deposit rate to the lending rate. However, these efforts in proposing the regulations were unfruitful (Gregoriou, Hoppe, & Wehn, 2013).

The Deposit Taking Microfinance Act (2006) that took effect in 2008, describes defaulting loan as a loan that principal plus interest is due for a period of more than 30 days but not yet received. The individual or the client who holds defaulting loan is said to be at default. The loan default rate is therefore determined by undertaking the ratio of non-performing loans to total loans issued. The lower the ratio the better the performance for the Deposit taking MFI, as it suggests that there are few non-performing loans compared to total loans issued. However, the defaulting loans for the Micro finance institutions have been high as a result of tight liquidity that has affected the entire banking sector. The problem becomes apparent, after 3 commercial banks were placed under receivership by the regulator in the year 2015 and 2016. In 2016 the defaulting loans in the microfinance institutions increased by 94% (Central Bank of Kenya, 2017).

## **1.2 Research Problem**

When there is lack interest rate capping, financial institutions have lee-way to charge a higher risk premium in the effort to cover default risk (Boulila, 2009). When the lending interests subside the loan default rate also declines since the loanees are able to repay loans acquired, but at the same time risky borrowers increases. Contrary to this, increase in lending rates makes it hard for the borrowers to access the loans and the possibility of default is higher. In the case where there are no capping on lending rates there is the opportunity to charge a higher risk premium and issue loans to more people. However, with capping, there is a chance that the number of defaulters would increase and thus increase credit default risk (Mutai, 2012).Sari *et al.* (2010) noted that interest rate capping increases loan costs which leads to cost inefficiency and high default rate due to low monitoring and control.

In Kenya, the directive of interest rate ceiling among commercial banks forced many commercial banks to shift their lending to the government hence many borrowers shifted

towards the MFIs. Statistics from the CBK (2017) reports indicated that after the interest rate capping, there was a shrinkage of loans offered by MFIs by 8.9% compared to the previous year's which offers contradictory expectations. It is not clear what effect the loan interest rate capping had on the default risk among MFIs in Kenya since the capping was on depository institutions.

There also exist contradictory outcomes on the impact of interest rate ceiling on loan default risk among financial institutions. A study done at UK financial institutions showed there was an increase in default risk due to low underwriting of loans (Nael, 2014). A study by Karani and Huel (2008) conducted in China indicated that interest rate capping decreased the loan default risk while a study by Darl and Fauri (2013) indicated that interest rate capping increased default risk since the financial institutions attracted highly risky borrowers.

There are local researchers who have also focused on interest rate capping and loan default rate as well as NPLs in both commercial banks and Deposit Taking, Microfinance institutions. Chelagat (2012) undertook a study on loan default determinants among Kenyan banks. Okwany (2017) studied KCB Bank in depth, so as to have a clear knowledge on interest rate ceiling impact. CBK (2018) undertook a study to look on the effect of ceiling of interest rates on small banks performance versus performance of large banks in Kenya. Interest rate ceiling has no more impact on default rate, this study will therefore answer the question: 'what causes ceiling on interest loan default rate among MFIS which take deposits in Kenya ?'

### **1.3 Research Objective**

The aim of this research is to determine the impact of interest rate capping on loan default rate among micro-financial firms in Kenya that collect deposits.

### **1.4 Value of the Study**

With the surrounding debate on interest rate ceiling/capping in Kenya, this study will provide insight that can be of interest to a number of stakeholders. The study aims to provide the financial institutions with a comprehensive knowledge on the impact of interest rate ceiling on loan default rate. This research will help financial institutions to

impact the regulation decisions from policy makers, to devise and implement changes and strategies that enables them to resist and be sustained in the advent of adverse effects of interest capping and also instances of loan default.

This study was also geared to provide important recommendations to the strategies/policies makers and CBK in evaluating interest rate ceiling/capping regulation's effects. The policy makers and CBK will be able to project the outcome of undertaking interest capping measures in their efforts to attain economic development which includes the benefits of availing sufficient credit to the populace and in return increase the tax revenue. The study is expected to provide a true picture of how interest rate affects revenue generation.

Being a current matter, the research aim to provide a comprehensive knowledge of interest rate ceiling/capping and the effects on deposit taking MFIs operations. From this study, researchers will be able to extend investigations and further discussions on the subject.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter shows a review of related literature, the theories that guide the study and the previous empirical studies undertaken relevant to the study. Finally the study has presented the summary of the major ideas on the subject.

### **2.2 Theoretical Review**

The research was based on several theories to help explain the impact of capping interest rate on loan default rate. This research adopted the Loanable Funds Theory, the classical Theory of Interest rates and the Free Market Theory.

#### **2.2.1 Loanable Funds Theory**

The theory of loanable funds was proposed by Knut Wicksell but it was fully developed through the works of Ohlin Bertil (1937). The theory deciphers that there exist inverse effect of loanable funds interest rates and the demand for taking loans. This follows that decreasing the lending rate by lenders increases demand for funds as more projects with positive NPV emerges. In this economy the demand is brought about by domestic borrowers as well as foreign, governments, and domestic business while the supply comes from foreign lending, domestic savings, the banking system and federal money supply.

Researchers have conducted numerous studies on this subject in the efforts to benefit households. Debelle (2004 ) found out that households in countries experiencing high indebtedness in a period of two decades reacted very fast or were sensitive to interest rates changes. Notably, lenders do not react with the aim to avoid the risk involved. A good example into the effects of fluctuations of interest rates is the East Asian market where the argument is that increase in the rate caused severe economic decline rather than stabilize the exchange rate. Further, it increased capital flight since the default rate increased, while at the same time lowering the expected returns.

There are however critics who suggest that the theory overemphasizes on savings being elastic to interest rates. However savings are undertaken for precautionary motives which is completely unrelated to interest rates. The theory also suggests that cash balances relate

direct to the supply of loanable funds and can either be increased or decreased by releasing savings or absorbing cash balances into savings respectively. This insinuate that cash balances are elastic while in actual terms, the supply of loanable funds depend on the velocity of cash in circulation not on de-saving or saving. It is also incorrect to try and combine real factors together with monetary factors. The real factors of savings and investment are unrelated to monetary policies such as the level of bank credit that entirely makes the theory aloof with the real world practices.

This theory plays a big role to the study as it indicates the connection that exists between demand of loanable funds as well as interest rates. Interest rate capping in Kenya, reduced the interest charged on loanable funds. The theory states that in cases where interest rates decreases, the demand for the loans increases. Loans issued to depository institution of Kenya increases in demand, would insinuate that the banks would be overwhelmed by the demand. It is therefore logical to insinuate that such demand would spill over to DTMs in the country.

### **2.2.2 The Classical Theory of Interest Rates**

It would be inaccurate to identify a single individual to attribute to the postulation of classical theory of interest rates as it results from the contributions of various classical economists who held the view that demand and supply of savings determines the interest rate (Friedman & Schwartz 1963). Other well-known economists who held classical views include Adam Smith, David Ricardo and Malthus T. Classical theory of interest rates analyses real factors like savings and investments and this is the reason it is also referred as the real theory of interest. Interest is therefore a price paid for the supply of savings. The demand is derived from those who intend to invest in business endeavors. If a factor is productive it will be on and when it has high expectation, and since factors of production are not equally productive, capital demand will be high initially and then reduce as its supply increases.

This theory maintains that with the help of capital facilities there is more production upon investment. As time progresses the marginal productivity of the business decreases as more investment savings are injected into the business venture due to the operation of the law of diminishing returns. The question then becomes how much an individual has to

borrow because the interest must be paid, and this is answered at the point where the marginal productivity of capital equates to the interest rate, also known as the equilibrium rate. Thus, it is beneficial to borrow in the scenario where the marginal productivity exceeds the interest rate. This concludes that the demand for capital and interest rate have an inverse relationship.

This theory has however faced criticism for its lack to include other variable that affect the interest rate other than the demand and supply of savings. Stiglitz (1995) through the Modern economic theory stressed the important role that real interest rates contribute to the economy's behavior as pertains to the investments and the economy overall level of activity. Monetary policy in its function of controlling the interest rates plays a crucial role in determining economic performance.

### **2.2.3 Free Market Theory**

Free Market Theory has its roots from propositions made by Milton Friedman (1962). He proposed that markets are either regulated markets or free markets. Regulated markets have their prices regulated by the relevant authority while free markets have laws and forces of demand and supply controlling the prices, without any interference from the government. Institutions that do support the capping/ceiling argue that free market implementation in regards to interest rates is not sustainable, thus the need for regulation. Milton Friedman in the year 1962, a proponent of free market system suggests another line of reasoning stating that the volume of money in the economy will increase even as the economy enlarges, thus opposed the interference from the government in its efforts to control the money supply.

The major criticism suggest that free market theory is unsustainable and requires levels of government interference in order to enhance that relevant policies have been promoted in the economy. Critiques of the theory further suggests that it is practically impossible to attain a free market economy since governments do interfere or influence prices in the market in order to ensure that relevant policies have been implemented. The government may use the monetary policies such as Open market operations, moral persuasion, etc. in order to ensure that they influence the supply of money in the economy that influences interest rates in a way that would favor certain government policies. Similarly the

government may use fiscal policies to ensure that they influence interest rates in the economy such as taxation and government spending.

The theory has relevance in the study as the Kenyan economy has been a free market, and the CBK has the mandate of signaling interest rate charged but should not direct the interest existing financial institutions should charge for loans rendered. The banking industry has in the past been permitted to dictate the margins on the spread of interest rates based on their level of risk averseness and the level of expenses. Banks that don't mind taking huge risks are known to have a higher spread in contrast to banks that avoid risk who stick to tiny margins in the effort to retain the existing customers. Existing fiscal and monetary policies influence the spread rather than dictate (Okwany, 2017). A free market provides a suitable environment for the equilibrium price to be established by the volume of supply and demand existing in the market at any particular period. When the regulation of interest capping is introduced, the financial performance of existing banks is affected and subsequently the tax revenue by the government.

### **2.3 Determinants of Loan Default Rate**

This section presents a discussion of loan default rate among lending institutions. Some of the determinants of default rate are interest on loans, management efficiency and credit growth.

#### **2.3.1 Capping of Interest Rate**

Naveed (2007) while establishing the determinants of default rates of the Banking industry of Pakistan banking industry indicated that default rates are not impacted by the growth in interest rates. However the position was later objected by Waemustafa and Sukri (2015) who revealed that business growth is negatively affected due to high interest/lending rates consequently leading to increased default rates. Borrowers of loans with higher interest rates are incapable of repaying the loan thus exposing financial institutions to higher default rates. Ahmad *et al.* (2007) while establishing what determines default rates found that credit growth as well as interest rates spread has adverse effects on emerging economies' credit risk such as Mexico, Malaysia, Thailand, India, and Korea.

Capping Interest rates in Kenya, significantly reduced the interest rates charged on loans issued by banks. Therefore the low interest rates would increase the demand for loans in commercial banks. The borrowers who would find it cumbersome to obtain loans, from commercial banks would therefore result into seeking credit facility from both normal as well as deposit taking microfinance institutions, that would therefore increase the loan books for these microfinance institutions. The deposit taking microfinance institutions would also be interested to understand the impact of interest rate capping on loan default rates.

### **2.3.2 Management Efficiency**

Sound management is very important to MFI' success but is difficult to gauge because it is a qualitative element applicable to individual institutions. There are various ways to determine whether the management style is effective. The ratio of total costs to total revenue determines the management efficiency because costs and revenues are generally the major element of MFIs transactions that are also directly controlled by management and reflect the management style adopted (Nguye & Nghiem, 2015). Management inefficiencies as a factor affecting default rates among MFIs is measured on efficiency ratio (ration of total cost to total revenue). The larger the ratio the larger the default rates and vice versa.

Management set credit policies that express the MFIs default risk management practice as well as the measurements within which default risk is to be regulated. Saeed and Izzeldin (2016), argue that the implementation and design of written strategies and procedures related to recognizing, monitoring, calibrating, and regulating default risk is paramount in ensuring a safe and sound banking. These strategies should be well illustrated, in line with sound banking practices, compliant with related regulatory authority, and sufficient for the structure of the bank.

### **2.3.3 Gross Loan Book**

Gross loan book refers to the volume of the funds that financiers avail to borrowers such as business enterprises, companies, individuals in various forms such as business overdrafts, credit cards, retail and term loans, asset financing, and any other particular



type of credit (Almekhlafi, Almekhlafi, Kargbo & Hu, 2016). Hess *et al.*(2009) argued that strong sustained credit increment in the Australian banking sector results into substantial high number of loanees defaulting, followed by a 2-3 years lag.

As a result of high competitiveness in the banking sector there is excess credit available for issue, and consequently borrowers are issued with low quality loans. Credit growth has a major and significant long term impact on default rates since with credit expansion, CB's avail loans to applicants by adopting minimum credit standards thereby increasing probability defaulting borrowers (Makri, Tsagkanos & Bellas, 2014). On the other hand, Ekanayake and Azeez (2015) established that default rates are majorly affected by growth of credit when the economy is rapidly growing. Credit growth at a high rate because individual banks lower credit standards.

## **2.4 Empirical Review**

Kar and Swain (2014) interrogated the high interests charged by MFIs and whether it improves its profits as well as the effect on default rates. The study focused on 71 MFIs among six countries using data between the year 2003 and 2008. It was established that high interest rates contributed greatly in reducing the default rates among MFIs. The focus of the study was on high interests that were charged by MFIs in several countries and effect on profitability as well as on default rates. The study period was over ten years ago, there are numerous changes that have taken shape in form of technology in which a current study would shed light on the relationships between the variables.

In another study, Ahmad and Ariff (2007) interrogated the factors which determine the default rates among commercial banks with the target being on emerging economy. The study focused on a panel analysis of countries from the developing economies. It was revealed that interest rate capping was essential to reduce higher interest values and increase the uptake of loans.

Shu-Teng, Zariyawati, Suraya-Hanim and Annuar (2015) analyzed the determinants that caused SMEs in Malaysia to adequately repay their loans. The study utilized a descriptive research method and data collection was achieved using open and closed ended

questionnaires. The data analyzed indicated loan repayment is significantly related to the loan amount, educational level, term of the loan and business experience.

Wahyudi (2014) study focused on analyzing the micro, SMEs loan default risk as pertains to how failure by debtors to pay their loans affected their progress as well as the willingness of these firms to seek new loans. The major causes of these firms failing to pay their loan were their financial capacity and leverage, and the cash flow, while the gross margin and efficiency did not contribute much to this failure. In addition, concerning rating transition behavior, the higher the rating moved, the lower the possibility of transition (low loan default) and that the possibility of failing to pay the loan is higher when there is lower quality rating as well as the quantity borrowed.

In another study, Aver (2008) conducted an empirical analysis of how the Slovenian banking system is affected by credit risk factors. The research result came up with certain macro-economic factors that lead to notable changes on credit risk. Literature on study affirmed that interest rates, unemployment rate, stock market index, inflation were crucial in regulating Slovenian banking system credit risk.

Chelagat (2012) focused on the determinants of loan defaults among Commercial Banks in Kenya with the objective to find out what causes small business sectors fail to pay their loans issued by these banks. From the findings using descriptive research methodology it is revealed that high interest rates as well as business operation period culminated in the significant increase of loan defaults.

Shikumo (2015) focused on what determines the extent of loan issue by Kenyan depository institutions. Using descriptive research method, data collected from the yearly reports published by Kenyan depository institution for a 5 years (2010-2014) was analyzed and showed that the banks loans issue was majorly determined (positively and negatively, respectively) by the bank size and liquidity while the interest rates and credit risk had no major impact on the lending.

Okwany (2017) in his study focused specifically on KCB Bank Kenya Limited (KCB-K) in order to determine how commercial banks in Kenya financial performance were affected by the adoption of interest ceiling. The study found out that the KCB-K profits, the volume of loans issued, and the loans which were no longer performing were

definitely influenced by this regulation. The data collected showed that there was less loans issued, less approved loan facilities, more stringent rules for loan qualification which consequently led to loanees defaulting all as a result of interest ceiling/capping.

Central Bank of Kenya (2018) study indicated that interest rate ceiling affected negatively the profits made by small banks and which exacerbated after the ceiling period. The report argues that the small(Tier III) banks were at the forefront in their profits dwindling and this condition exacerbated even in financial quarters that followed. This removes the Bank's capability to withstand shocks due to lack of capital buffers build-up attained through retained earnings.

Nganga and Wanyoike (2017) in a study of stock performance and interest rates found inverse interest impact of the performance of stock markets. This was in consensus with other studies. The research reveals that regulating the interest rates geared towards improving the country's economy, inclusive of the stock exchange affected negatively the stock market performance.

## **2.5 Summary of Literature Review**

There was clear evidence that interest ceiling has a positive impact on default rate among MFIs, and thus there was need to focus on establishing these effects which are essential to the stakeholders in a volatile financial market. This need exists because there is still knowledge on this theme that hasn't been explored extensively and completely. Previous research concerning this theme has focused on determinants of default rates without necessarily focusing on interest rate capping; others have focused on developed economies while others specializes on commercial banks.

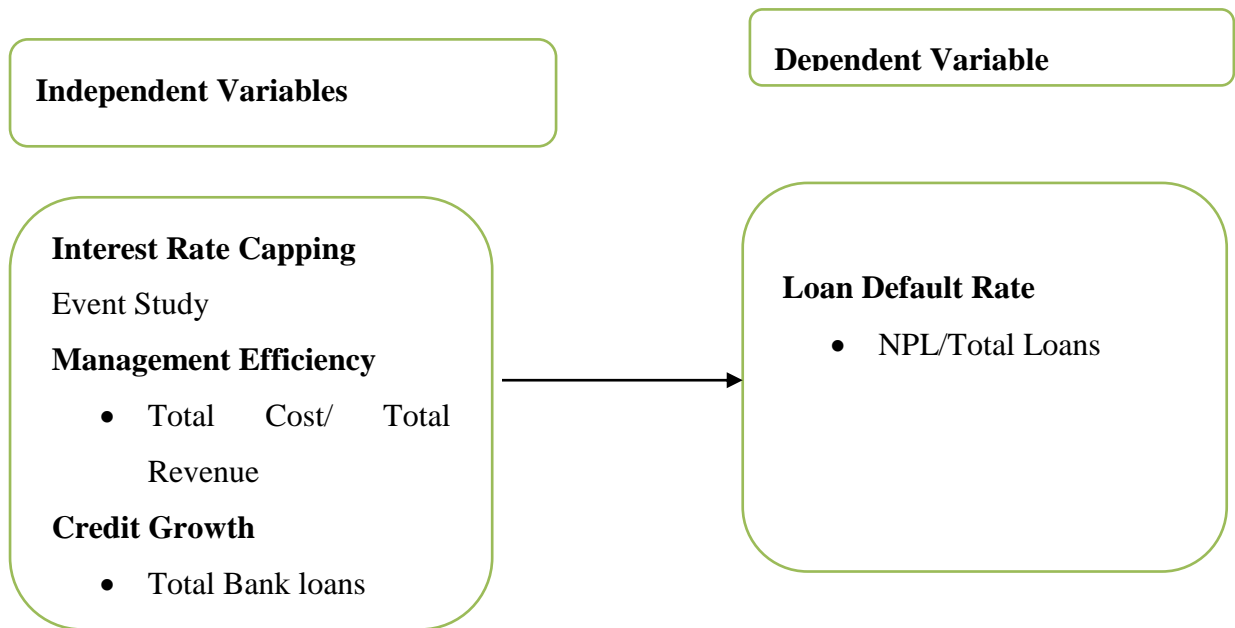
The study by Kar and Swain (2014) linked interests rates to the financial institutions' performance thus creating a conceptual research gap, Ahmad and Ariff (2007) focused generally on the causes of default rates among commercial banks without specifically focusing on interest rate capping only, Shu-Teng, Zariyawati, Suraya-Hanim and Annuar (2015) and Wahyudi (2014) similarly focused on the causes of default rates among microfinance institutions but focused on the SMEs borrowers.

Locally, the study by Chelagat (2012) focused on the overall determinants of default rates without a focus on interest rate capping. The study also was limited to commercial banks and not MFIs. The study by Shikumo (2015) and Okwany (2017) similarly directed its interest on commercial banks and not MFIs hence creating a contextual research gap.

## 2.6 Conceptual Framework

Figure 2.1 shows the conceptual framework of the study. The framework helps in showing relationship between the variables. It points out the dependent and the independent variables of the study and the control variable of the study.

**Figure 2. 1: Conceptual Framework**



**Source:** Researcher (2019).

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter outlined techniques that were used by the research to answer research questions and statistically analyze the research null hypothesis the focus of the chapter was on design adopted, population targeted by the study, as well analysis of data accordingly.

### **3.2 Research Design**

Descriptive research was used as the design for this study. Descriptive research design was suitable in establishing a relationship between variables (Kumar, 2019). Since the study aims to establish the interest rate ceiling impact determine on default rate, this research design was suitable.

### **3.3 Population and Sample**

In this study, the target population included all thirteen (13) licensed Deposit taking MFIs by CBK as at the year 2019 based on the information acquired from Central Bank of Kenya (CBK) supervision reports of banks. No sampling was done on the 13 DTMs. A census survey was therefore employed by the study.

### **3.4 Data Collection**

This study used secondary data for analysis to achieve the objective. The data was collected on a four year interval from the year 2015 to the year 2018 on 3 indicators of default rate namely amount of credit losses, number of loan defaulters and number of loan default accounts of the MFIs. The data was collected from the CBK banking sector supervision reports using a secondary data collection sheet (Appendix I).

### **3.5 Data Analysis**

Data was analyzed by the use of regression model for the period of 4 years, (2015 to 2018). The model will take the form of:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Y represented Loan default Rate (measured by Ratio of total non-performing loans in a year over total gross loans issued in the year for the study period (2014-2018))

$X_1$  represented Capping of Interest Rate that involved introduction of dummy variable denoted by 0 to signify absence of capping and 1 to indicate presence of capping of interest rates.

$X_2$  represented Management Efficiency measured by ratio of total operating profit over total costs incurred in generating the profit.

$X_3$  represented Total loans issued measured by natural log of total loan book

### **3.5.1 Test of Significance**

The study conducted an F test to know if it good rejecting of accepting the null hypothesis. The importance of the model was tested at 5% important level. A p value below 0.05 therefore denotes significance of the model while significance of 0.05 and above indicates lack of significance of the model. The analysis was undertaken by the use of SPSS Version 20.0 software

## CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF DATA FINDINGS

### 4.1 INTRODUCTION

Capping of interest rate as impact on loan default rate among the Kenya microfinance firms that collect deposit by the use of a regression model. Data taken for the study variables was secondary data, was described, diagnostic tests undertaken for the data, correlation analysis and a regression analysis undertaken to know if to say yes or no to null hypothesis. To sum up the chapter we get data findings.

### 4.2 Descriptive Statistics

Variables in the study included loan default rate that was determined by the percentage of non-performing loans to gross loans issued, the capping of interest rate was on the other hand determined though introduction of a dummy variable, where all the values before capping of interest rates were represented by 0 and values after capping of interest rates were presented by 1 in the study period. Management Efficiency on the other hand was determined by the percentage of operating profits over total operating costs. It was used to determine the amount of profits generated from investment in a shilling of operating costs.

**Table 4. 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Y= Loan Default Rate	45	1.6514	67.2662	13.101455	13.9638156
X1 = Capping of interest Rates	45	0	1	.40	.495
X2 = Management Efficiency	45	-67.8899	129.5812	5.342119	38.5569506
X3= Loan Book	45	4.3694	10.0074	6.847835	1.9625963
Valid N (listwise)	45				

The dependent variable measured by the ratio of NPL to total gross loans had a mean of 13.1% with a high standard deviation of 13.96%. Uwezo microfinance recorded the highest Loan Default rate in 2018 at 67.27% and SMEP recorded the least Loan default rate at 1.65%.

Capping of interest rate was determined by introducing a dummy variable, where the variable took the form 0, for any duration before interest rate and 1 for the period after capping of interest rates. Capping of interest rates took effect in late 2016 and therefore the performance of the variable for three years (2014-2016) was indicated as 0. However the period 2017 and 2018 was represented by 1 as the value for capping of interest rates.

Management efficiency was determined by percentage of the ratio for operating profit (loss) to total operating costs for the microfinance. The highest institution that recorded highest management efficiency ratio was Sumac at 129.58% in 2018 while the least was Sumac at an operating loss of 67.89%. The mean was 5.34% with a very high standard deviation of 38.56%.

The loan book was the control variable that was used to determine size of the microfinance institution. It was believed that the largest microfinance had the largest loan book. KWFT had the largest loan book in the year 2016 at Ksh. 22,189 million issued in loans. The least was recorded by Century in 2015 at a total of Ksh. 79 million. The average gross loans issued was Ksh. 4,822 million.

### **4.3 Diagnostic Tests**

Reason behind the undertaking of diagnostic test was to be certain that the assumptions made by regression model in regard to data for analysis are complied with. The regression model assumes that data is from a normal population, it is linear, has no presence of multi-collinearity and it is homoscedastic in nature.

#### **4.3.1 Normality Test**

Normality test was undertaken by the use of Shapiro-Wilk test or Kolmogorov-Smirnov test. Shapiro-Wilk test is most popular and recommended in most studies. Normal population data is indicated by a null hypothesis. The null hypothesis is rejected if the p value is less than alpha value of 0.05. In my study, all the variables have p values of less



than 0.05 and the null hypothesis is rejected for each variable. This indicates that data is not from population with normal distribution. Failing this test indicates that all the values would need to be standardized, where the z scores for the variables are determined and used to undertake regression analysis. Non-parametric tests are also undertaken in the case of correlation analysis instead of using parametric analysis.

**Table 4. 2: Tests of Normality Table**

**Tests of Normality**

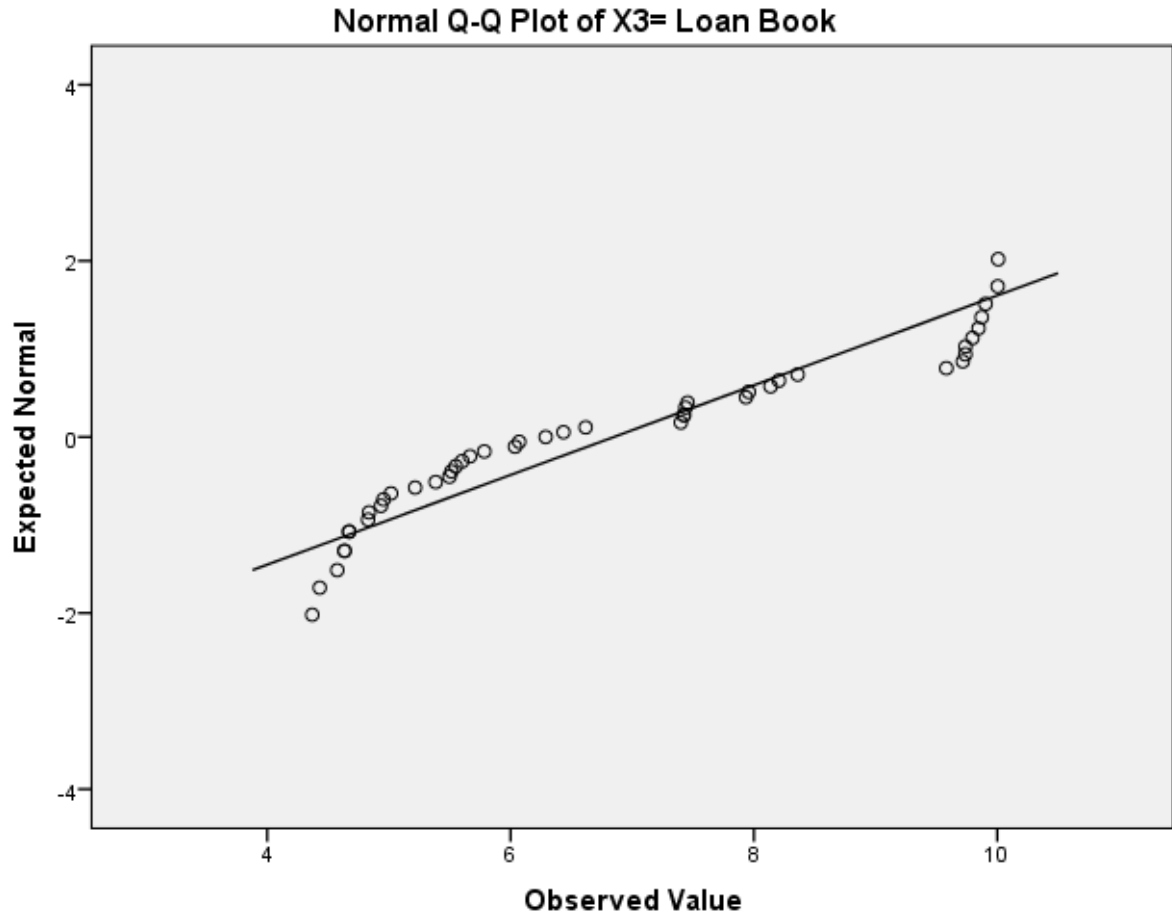
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Y= Loan Default Rate	.175	45	.001	.753	45	.000
X1 = Capping of interest Rates	.390	45	.000	.622	45	.000
X2 = Management Efficiency	.140	45	.027	.894	45	.001
X3= Loan Book	.151	45	.012	.881	45	.000

a. Lilliefors Significance Correction

Source: Author (2019).

**4.3.2 Linearity Test**

Linearity test is undertaken by observing the scatterplot graph and considering whether the data plots are linear in nature. The figure 4.1 indicates that the data plots shows linearity and therefore data was assumed to be linear in nature.



**Figure 4. 1: Scatterplot Graph**

### 4.3.3 Multicollinearity Test

Multi-collinearity test is determined by the VIF where variables with VIF values of above 5 are considered to have presence of multi-collinearity that may affect their p values. The multi-collinearity is used to show the correlation that exist between the independent variables which should be as low as possible. This is because the independent variables are expected to remain independent and therefore should not show correlation with other independent variables. Table 4.4 indicates that there was no multi-correlation among the study variables.

**Table 4. 3: Multi-Collinearity Test Table**

Model	t	Sig.	Collinearity Statistics	
			Tolerance	VIF
(Constant)	6.966	.000		
1 Zscore: X1 = Capping of interest Rates	2.518	.016	.997	1.003
Zscore: X2 = Management Efficiency	-1.515	.137	.938	1.066
Zscore: X3= Loan Book	-1.787	.081	.939	1.065

Source: Author, (2019).

#### 4.3.4 Homoscedasticity Test

Regression model assumes that data is homoscedastic, which means that the line determined by the regression model is the line of best fit. It therefore shows that there is no bias in determining the regression line and all the variations of data plots from the regression have a total of equal variances.

Breusch-Pagan test is used to test if data is homoscedastic or not. The Koenker test is particularly used where the null hypothesis states that data is homoscedastic .if the P value oless that 0.05 that null hypothesis is not accepted. The Koenker test indicates rejection of null hypothesis if the value of P is more than 0.05 and concludes that data is homoscedastic in nature.

**Table 4. 4: Homoscedasticity Table**

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----- Breusch-Pagan and Koenker test statistics and sig-values -----

	LM	Sig
BP	21.205	.000
Koenker	6.774	.079

Null hypothesis: heteroskedasticity not present (homoskedasticity).

If sig-value less than 0.05, reject the null hypothesis.

Note: Breusch-Pagan test is a large sample test and assumes the residuals to be normally distributed.

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Source: Author, (2019)

#### **4.4 Correlation Analysis**

The correlation analysis that was undertaken by the study was Spearman's correlation since it is a nonparametric test. The correlation ranges from 0 to 1 and it is either positive or negative. A correlation value of 0.8 to 1 indicates a very strong correlation while a correlation value of 0 to 0.2 indicates a very weak correlation. The other values are either strong weak or averagely strong or averagely weak.

**Table 4. 5: Correlations Table**

**Correlations**

	Y= Loan Default Rate	Zscore: X1 = Capping of interest Rates	Zscore: X2 = Management Efficiency	Zscore: X3= Loan Book
Y= Loan Default Rate	1.000			
Spearman's rho X1 = Capping of interest Rates	.307*	1.000		
X2 = Management Efficiency	-.444**	-.042	1.000	
X3= Loan Book	-.212	.054	.387**	1.000
N	45	45	45	45

\*. Correlation is important at the 0.05 level (2-tailed).

\*\* . Correlation is important at the 0.01 level (2-tailed).

The capping of interest rates is positively correlated although the correlation is moderately weak, it is statistically significant. Similarly, management efficiency and loan book are negatively correlated to the dependent variable.

**4.5 Regression Analysis**

Regression analysis uses analysis of variance and F test statistic for null hypothesis to be accepted or rejected. The null hypothesis for the research objective of the study indicates that there is no relevant effect of interest rate capping on fiscal performance of micro finance firms in Kenya that issue deposits .The regression model took the form  $Y= \beta_0+ \beta_1X_1+ \beta_2X_2+ \beta_3X_3 + e$

Y represents Loan default Rate (measured by Ratio of total non-performing loans in a year over total gross loans issued in the year for the study period (2014-2018)

X<sub>1</sub> represent Capping of Interest Rate that will involve introduction of dummy variable denoted by 0 to signify absence of capping and 1 to indicate presence of capping of interest rates

X<sub>2</sub> represents Management Efficiency measured by ratio of total operating profit over total costs incurred in generating the profit

X<sub>3</sub> represents Total loans issued measured by natural log of total loan book

#### 4.5.1 Regression Model Summary

In order to determine the level with which we would dependent on the regression model to predict changes in the dependent variable, a reliability test is undertaken where the R squared of the model is determined.

**Table 4. 6: Model Summary Table**

##### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489 <sup>a</sup>	.239	.184	12.6164358

a. Predictors: (Constant), Z score: X<sub>3</sub>= Loan Book, Z score: X<sub>1</sub> = Capping of interest Rates, Z score: X<sub>2</sub> = Management Efficiency

The R squared determines the co-efficient of determination of the model that was given by 23.9%. This is a relatively strong coefficient, where the model is able to predict changes in the dependent variable to an extent of 23.9%.The other changes in the dependent variable are determined by other factors outside the model.

#### 4.5.2 Analysis of Variance

The analysis of variance on the other hand describes whether to reject the null hypothesis or fail to reject the null hypothesis. The F test is calculated at 4.3 which is compared with the critical F at 3 numerators degrees of freedom and 41 df at an alpha of 0.05, which is 2.84. The calculated F value is beyond the critical F and therefore lies within the rejection region.

**Table 4. 7: ANOVA TABLE**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2053.326	3	684.442	4.300	.010 <sup>b</sup>
	Residual	6526.153	41	159.174		
	Total	8579.478	44			

a. Dependent Variable: Y= Loan Default Rate

b. Predictors: (Constant), Z score: X3= Loan Book, Z score: X1 = Capping of interest Rates, Z score: X2 = Management Efficiency

The p value is calculated as 0.010 which is less than 0.05. This indicates that there is statistical significance in the model. Rejecting the null hypothesis means that there is effect of capping interest rates on loan default rate among deposit taking microfinance institutions in Kenya. The effect is also statistically significant.

### **4.5.3 Regression Coefficients**

The regression model can therefore be used to explain changes in loan default rate by use of the regression model. The regression model that took the form  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

**Table 4. 8: Regression Coefficient Table**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	13.101	1.881		6.966	.000
1 Z score: X1 = Capping of interest Rates	4.796	1.905	.343	2.518	.016
Z score: X2 = Management Efficiency	-2.975	1.963	-.213	-1.515	.137
Z score: X3= Loan Book	-3.507	1.962	-.251	-1.787	.081

Source: Author (2019)

The model therefore takes the form

$$Y = 13.1 + 4.796 X1 - 2.975 X2 - 3.51 X3 + 1.881$$

This indicates that if all the variables are held constant and capping of interest rate is effected, then the loan default rate increases by 4.8%. This could be explained by the fact that capping of interest rate affected commercial banks, and therefore when the risk profile of most of the clients in the commercial banks relative to the return, the commercial banks withheld their lending to them. These people resulted to use alternative means of access to credit which was through deposit taking microfinance institutions. It consecutively led to an increase in default rates for MFI in Kenya.

Increasing management efficiency of the DT MFIs led to decrease in Loan default rate by 2.98% and similarly increasing the gross loans issued by the DT MFIs reduced the loan default rate by 3.51%.



#### **4.6 Interpretation of Study Findings**

The study finding indicated that capping of interest rates significantly and positively affected loan default rate for DT Kenyan depository institutions. The positive effect was found in the correlation analysis where the spearman's rho for the correlation between interest rate capping and loan default rate was statistically significant at 0.31. This could be determined by capping of interest rate reduced lending depository institutions, people who could not access credit from commercial banks due to their stringent measures in risk assessment sought credit from DT-MFIs therefore increasing their loan book as well as carrying along the high risk that results to increased loan default rates.

Management efficiency was also found to have negative effect on loan default rate. This could be explained by the fact that increasing management efficiency ensures that the management they undertake their due diligence in ensuring that they operate optimally at lowest costs but at high profitability level. A highly efficient management would therefore ensure that they undertake only quality loans, whose risk of default is significantly low, Management efficiency therefore reduces loan default rates in DT-MFIs.

Increasing the size of the loan book, reduced the loan default rates. It would be expected that increasing loan books, would result in increase in defaulting loans. However, the decrease in failure to pay loans as a result of increase in loans, is a sign that DT-MFIs undertook good quality loans, perhaps people who slightly fell below the threshold of the commercial banks after capping of interest rates. The clients who fell off the commercial banks threshold obtained loans from the MFI in which case, the loan books for the MFIs increased but at the same time the loan default rate decreased, due to higher quality lending than they had earlier been accustomed to.

The study findings were consistent with the study findings by Khar and Swain (2014) who found that increased loans uptake that resulted after capping of interest rates led to a reduction of loan default rates among the MFIs. Similarly Okwany (2017) found that financial performance of depository institutions was impacted by capping of interest rates, where loans to small and risky clients were significantly curtailed. On the contrary, Nganga and Wanyoike (2017) found an inverse relationship between financial

performance and interest rate capping. CBK (2018) found that interest rate capping adversely affected profitability of financial firms.

## **CHAPTER FIVE: SUMMARY AND CONCLUSIONS**

### **5.1 Introduction**

Capping of interest rates in Kenya had significant and different impacts on different economic sectors in the country. Commercial banks were the only financial institutions that were directly affected by capping of interest rates. They therefore reduced giving loan to borrowers who are deemed to be of high risk. The deposit taking microfinance institutions therefore benefited from increased flow of clients, who sought to access credit. The study findings are summarized in this chapter, it's as well concludes and make way of recommending policy.

### **5.2 Summary**

The study findings indicated that capping of interest rates significantly and positively affected loan default rate for DT microfinance institutions in Kenya. The positive effect was found in the correlation analysis where the spearman's rho for the correlation between interest rate capping and loan default rate was statistically significant at 0.31. This could be explained by the fact that capping of interest rate reduced lending by commercial banks, people who could not access credit from commercial banks due to their stringent measures in risk assessment sought credit from DT-MFIs therefore increasing their loan book as well as carrying along the high risk that results to increased loan default rates.

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### **5.3 Conclusions**

The study concluded that capping of interest rate had positive effect on loan default rates. The capping increased the borrowings that led to increase in default rate as increased lending comes with an increased obligation of default risk.

Another conclusion that was undertaken by the study was that improving management efficiency of microfinance institutions led to decrease in loan default rates. This was explained by the fact that improving management efficiency ensured that they were able to undertake adequate screening of potential borrowers and only issue good quality loans.

The study concluded that the gross loans issued by microfinance institutions increased significantly. The increase in total loans led to a decrease in loan default rates. The increase in total loans was a result of spill over, from good borrowers who were unable to access credit in commercial banks. This decreased the level of loan default rate, despite increase in total loans issued.

### **5.4 Policy Recommendations**

The study recommends that the government should remove capping of interest rates. This would therefore ensure that borrowers access credit, albeit at higher cost from

commercial banks rather than accessing the same from DT-MFIs, which may have a higher cost of access to credit.

The study also recommends that management of deposit taking microfinance institutions should undergo trainings, and attend workshops to help them improve their efficiency. This resulted from the fact that DT-MFIs with higher management efficiency are able to record low loan default rates as care and quality loan screening is undertaken by competitive and competent managers.

The study also recommends thorough screening of potential borrowers before awarding loans. This is in the interest of curbing non-performing loans, as well as protects the profitability of deposit taking microfinance institutions. Appropriate screening also reduces total risk exposure of the MFIs which therefore ensures that there is improved financial performance as well as reduced loan default rates.

### **5.5 Study Limitations**

The study results were restrained to microfinance firms that issue deposit in Kenya. The spill-over effects of capping interest rates affected other fiscal institutions as well. The research findings were therefore limited to deposit taking microfinance institutions only.

The study was limited by the methodology of the study. Linear regression model was therefore put into use so as to know the impact of capping interest rates on loan default rate. A different methodology may have different findings. However, the study addressed this challenge by ensuring that diagnostic tests are undertaken to confirm that all the assumptions made by regression model are well captured. The results were therefore made at 95% confidence level which is an acceptable confidence level.

The period of the study may have also limited the study in the form that the study was conducted for a period of five years.

### **5.6 Areas for Further Studies**

A similar study should be undertaken in a different country where capping of interest rates has been effected. The findings of such a study should then be compared with the findings of this study.

A similar study should be undertaken by use of test of sample differences to understand whether there are significant differences of the findings of these studies.

## REFERENCES

- Abaidoo, A., & Oppong, S. (2015). Determinant of Loan Default and Its Effect on Financial Performance of Commercial Banks in Ghana. A Case Study of Fidelity Bank Limited.
- Ahmad, N. H., & Ariff, M. (2007). Multi-country study of bank credit risk determinants. *International Journal of Banking and Finance*, 5(1), 6.
- Almekhlafi, E., Almekhlafi, K., Kargbo, M., & Hu, X. (2016). A Study of Credit Risk and Commercial Banks' Performance in Yemen: Panel Evidence. *Journal of Management*, 4(1), 57-69.
- Central Bank of Kenya (2016). Annual Bank Supervision Reports
- Central Bank of Kenya (2017). Annual Bank Supervision Reports
- Chaibi, H., & Ftiti, Z. (2015). Credit risk determinants: Evidence from a cross-country study. *Research in international business and finance*, 33, 1-16.
- Chelagat, K. N. (2012). Causes of Loan Defaults by Small and Medium Enterprises among Commercial Banks in Kenya. *Financial Management Journal*, 6(7), 56-78.
- Chi, Q., & Li, W. (2017). Economic policy uncertainty, credit risks and banks' lending decisions: Evidence from Chinese commercial banks. *China journal of accounting research*, 10(1), 33-50.
- Ekanayake, E. M. N. N., & Azeez, A. A. (2015). Determinants of non-performing loans in licensed commercial banks: Evidence from Sri Lanka. *Asian Economic and Financial Review*, 5(6), 868.
- Ferrari, A., Masetti, O., & Ren, J. (2018). Interest rate caps: the theory and the practice.

- Greenidge, K., & Grosvenor, T. (2010). Forecasting Non-Performing Loans in Barbados. *Journal of Business, Finance & Economics in Emerging Economies*, 5(1) 42-45.
- Gregoriou, G. N., Hoppe, C., & Wehn, C. S. (2013). Rethinking valuation and pricing models: Lessons learned from the crisis and future challenges. Amsterdam: Elsevier
- Han, Z. (2008). Ownership Reform, Foreign Competition and Efficiency of Chinese Commercial Banks: A Non- parametric Approach. *The world economy*, 31(10), 1310-1326.
- Johnson, H. G. (2017). *Macroeconomics and monetary theory*. Routledge.
- Kar, A. K., & Swain, R. B. (2014). Interest rates and financial performance of microfinance institutions: Recent global evidence. *The European Journal of Development Research*, 26(1), 87-106.
- Kargi, S. (2011). 'Credit Risk and the Performance of Nigerian Banks'. *Ahmadu Bello University, Zaria Nigeria*.
- Kinyuira, D. (2013). Effects of Porter's Generic Competitive Strategies on the Performance of Savings and Credit Cooperatives (Saccos) in Murang'a County, Kenya. *IOSR Journal of Business and Management (IOSR-JBM) e-ISSN*, 93-105.
- Kleinow, J., & Moreira, F. (2016). Systemic risk among European banks: A copula approach. *Journal of International Financial Markets, Institutions and Money*, 42, 27-42.
- Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners*. Sage Publications Limited.



- Magweva, R., & Marime, N. (2016). Bank specific factors and bank performance in the multi-currency era in Zimbabwe. *African Journal of Business Management*, 10(15), 373-383.
- Maimbo, S. M., & Gallegos, C. A. H. (2014). *Interest rate caps around the world: still popular, but a blunt instrument*. The World Bank.
- Makri, V., Tsagkanos, A., & Bellas, A. (2014). Determinants of non-performing loans: The case of Eurozone. *Panaeconomicus*, 61(2), 193-206.
- Mengze, H., & Wei, L. (2015). A Comparative Study on Environment Credit Risk Management of Commercial Banks in the Asia- Pacific Region. *Business Strategy and the Environment*, 24(3), 159-174.
- Miller, H. (2013). *Interest Rate Caps and Their Impact on Financial Inclusion*.
- Mokaya, M. A., Jagongo, A. O., James, R. M., & Ouma, D. O. (2018). Moderating Effect of Political Risk on the Relationship between Bank Characteristics and Lending Rates among Commercial Banks in Kenya. *International Journal of Accounting*, 6(1), 115-123.
- Mutai, T. K. (2012). Competitive strategies adopted by Microfinance Institutions in Kenya. *Unpublished master thesis) University of Nairobi, Kenya*.
- Nasieku, T., & Ngugi, R. W. (2016). Credit Information Sharing and Credit Risk Reduction in Kenya Commercial Banks. *Journal Of Social Science Research*, 10(1), 1941-1949.
- Nguyen, T. P. T., & Nghiem, S. H. (2015). The interrelationships among default risk, capital ratio and efficiency: evidence from Indian banks. *Managerial Finance*, 41(5), 507-525.
- Ohlin, Bertil (1937). Notes on the Stockholm Theory of Savings and Investments II. *The Economic Journal*, 47 (1), 221 - 240.

- Okwany, F. O. (2017). *Effect of Interest Rate Capping on Operating Performance Indicators of Commercial Banks in Kenya: A Case Study of KCB Bank (Kenya) Limited* (Doctoral dissertation, United States International University-Africa).
- Okwany, F. O. (2017). *Effect of Interest Rate Capping on Operating Performance Indicators of Commercial Banks in Kenya: A Case Study of KCB Bank (Kenya) Limited* (Doctoral dissertation, United States International University-Africa).
- Okwany, F. O. (2017). *Effect of Interest Rate Capping on Operating Performance Indicators of Commercial Banks in Kenya: A Case Study of KCB Bank (Kenya) Limited, Doctoral dissertation, United States International University-Africa.*
- Ombati, A.O. & Muturi,W. (2017). Effects of competitive strategy on performance of micro finance institutions in Kenya: A survey of Micro-Finance Institutions in Kisii County. *International Journal of Economics, Commerce and Management*, 5(4), 23-45
- Saeed, M., & Izzeldin, M. (2016). Examining the relationship between default risk and efficiency in Islamic and conventional banks. *Journal of Economic Behavior & Organization*, 132, 127-154.
- Shikumo, D. H. (2015). *Causes Of Lending To Small And Medium Enterprises By Commercial Banks In Kenya* (Masters Dissertation, School Of Business, University Of Nairobi).
- Shu-Teng, L., Zariyawati, M. A., Suraya-Hanim, M., & Annuar, M. N. (2015). Causes of microfinance repayment performance: Evidence from small medium enterprises in Malaysia. *International Journal of Economics and Finance*, 7(11), 110.
- Suzuki, Uddin, Pramono and Khan (2017)
- Tadesse, E. (2017). *Impact of credit risk on the performance of commercial banks in Ethiopia* (Doctoral dissertation, St. Mary's University).

Waemustafa, W., & Sukri, S. (2015). Bank specific and macroeconomics dynamic determinants of credit risk in Islamic banks and conventional banks. *International Journal of Economics and Financial Issues*, 5(2), 476-481.

Wahyudi, I. (2014). Default Risk Analysis in Micro, Small and Medium Enterprises: Does Debt Overhang Theory Occur.

**APPENDIX I: DATA COLLECTION SHEET**

MFI	Year	Amount of Credit Losses	Number of Loan Defaulters	Number of Loan Default Accounts
	2014			
	2015			
	2016			
	2017			
	2018			

## APPENDIX II: DATA USED

Y= Loan Default Rate	X1 = Capping of interest Rates	X2 = Management Efficiency	X3= Loan Book
17.26259	1	-2.641690682	9.903338
0.336581	1	19.18012422	9.737138
17.77141	1	-8.458961474	7.934155
10.80683	1	20.66895369	7.437206
2.006689	1	129.5811518	6.616734
20.96774	1	-46.15384615	5.513429
5.854241	1	123.5294118	6.036677
67.26619	1	8.955223881	4.934474
20.87379	1	-67.88990826	4.634729
16.87313	1	16.91616766	9.871687
13.30935	1	18.33672431	9.738495
25.84034	1	-30.35087719	7.957177
5.426357	1	-8.603896104	7.424762
4.173355	1	38.92215569	6.434547
19.72477	1	-19.76744186	5.384495
6.769231	1	27.5	5.783825
62.69841	1	-20.68965517	4.836282
16.50485	1	-62.37623762	4.634729
14.19622	0	22.80444009	10.00735
5.708716	0	11.03941	9.795624
18.24638	0	-21.31782946	8.205492
9.421586	0	-14.17797888	7.424762
1.301115	0	39.58333333	6.287859
18.85246	0	-9.090909091	5.497168
2.583026	0	32	5.602119
33.11258	0	5.660377358	5.01728
11.21495	0	-47.12643678	4.672829
7.898072	0	20.58630855	10.00306
1.531597	0	11.43807574	9.716194
8.103044	0	13.10008137	8.359369
2.083333	0	5.460750853	7.45472
12.93303	0	33.66336634	6.070738
17.12062	0	-21.64948454	5.549076
3.521127	0	40	4.955827
27.83505	0	4.166666667	4.574711

1.265823	0	-57.42574257	4.369448
3.452848	0	21.56084656	9.84448
2.374379	0	23.86726228	9.581076
6.758338	0	13.05361305	8.136811
-1.65138	0	-10.28806584	7.399398
10.0346	0	12.5	5.666427
15.21739	0	6.153846154	5.214936
2.380952	0	17.39130435	4.430817
16.8	0	5.714285714	4.828314
2.803738	0	-54.92957746	4.672829

**APPENDIX III: KENYA CBK LICENSED DEPOSIT TAKING MICROFINANCE  
INSTITUTIONS**

1. Faulu Microfinance Bank Limited
2. Kenya Women Microfinance Bank Limited
3. UWEZO Microfinance Bank Limited
4. SMEP Microfinance Bank Limited
5. Remu Microfinance Bank Limited
6. Rafiki Microfinance Bank Limited
7. Century Microfinance Bank Limited
8. SUMAC Microfinance Bank Limited
9. U & I Microfinance Bank Limited
10. Daraja Microfinance Bank Limited
11. Choice Microfinance Bank Limited
12. Caritas Microfinance Bank Limited
13. Maisha Microfinance Bank Limited