THE EFFECT OF LENDING INTEREST RATE FLUCTUATION ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

I, the undersigned, 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 my approval as the University Supervisor.

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DEDICATION

This project is dedicated to my husband Emmanuel, my son Elroy, my daughters Eleora and Elissa.

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ABBREVIATION AND ACRONYMS

ANOVA - Analysis of Variance

CBK - Central Bank of Kenya

GDP - Gross Domestic Product

ICT - Information Communication Technology

NIM - Net Interest Margin

ROA - Return on Assets

ROE -Return on Asset

ABSTRACT

A country's economy depends on the banking system as the main financial intermediary. While performing this role they are often faced with a number risks like financial performance risk, foreign exchange risk, Operational hazard, credit hazard and loan rate hazard among others. Mitigation of this risk is important since it impacts on its financial performance. The objective of this study was to establish the impact of interest rate fluctuation on the financial performance of commercial banks in Kenya. This study was anchored by classical theory, Keynes liquidity theory and loanable fund theory. Study population was all the 42 commercial banks operating in Kenya as at 31 December 2017. The research collected the necessary data to address the research question by use of secondary data, in which the income statements from the period between 2008 and 2017. Diagnostic tests were done to establish and validate the most appropriate research model design for the study. The study also carried out tests on normality, autocorrelation and multicollinearity, which is a situation where variables in explanation, two or more, in a model of multiple regression are related highly linearly and was tested using correlation analysis and the variance inflation factors. Analysis was done by use of descriptive statistics, the multiple regression analysis and the Pearson correlation. The t test statistics was used to test the significance of the variables that are independent while the F test statistic and ANOVA was employed to test the regression equation's significance. The study findings established that there is a positive and significant relationship between interest rates fluctuation and financial performance of commercial banks. The study findings established that there is a negative and significant relation amid credit risk and commercial banks financial performance. The research findings established a positive and noteworthy connection existence between management efficiency and financial performance of commercial banks. The research findings established existence of a significant and positive relation amid the real GDP and financial performance of commercial banks. The study recommends that the Kenyan commercial banks management should ensure that they set up interest rate risk management strategies to ensure that they mitigate the effects of interest rates fluctuations.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial institutions are important for the growth and sustainability of the economy. There is a link amid the financial performance of a firm and interest rates for it is one on the major economic factor that influences the economic growth. The interest rate influences the cost of capital to the investor and the returns of various bank savers. The overall cost of capital and debt-equity choice of the firm is affected by the change of the interest rates and thereby sets a response of the financial institutions in order to achieve a wanted amount of the capital stock and its overall performance of the firm. According to Casu (2012), the interest rate is among the essential aspects that impact the financial performance of the financial institutions especially commercial banks.

This study was anchored by classical theory, Keynes liquidity theory and loanable fund theory. The classical theory recognizes the interest rates as a major influence on the investment and willingness of the investors to save, hence a major consideration in the varying financial market (Maynard, 2014). The Keynes liquidity theory identifies the interest rate on the demand and supply of money in an economy, thus being a determinant on the level of the liquidity in an economy (Keynes, 1936). The loanable fund theory which is an elaboration of the classical theory in terms of the spread of the investment due to the level of the demand and supply of money in an economy of the loanable funds (Kumar, 2015).

There exists a relation between financial performance of the financial institutions and interest rate, whereby both the long and short term interest rates has an effect on the net margins (NIM) of the commercial banks. It is then prudent for the net interest rates flow through the financial institutions to be managed and controlled in order to positively affects the profitability of the commercial banks, for the development of the commercial banks are essential for the growth of the economy; however, other changes to economic conditions have a relatively higher effect on the commercial banks financial performance (Genay, 2014).

1.1.1 Lending Interest Rate Fluctuation

Interest rate is described as the price of money. It's defined as a gain in value from the value of an investment or savings (Semuel & Teddy, 2014). It is also defined as the proportion of loaned funds that an investor demands for the usage of advanced funds (Khordehfrosh & Tehranchian, 2015). A rate of interest is depicted as the charge paid by a borrower for the usage of cash he does not own, and wishes to approach a loan specialist who authorize the utilization, by giving a loan to the borrower. An interest rate, which is paid or charged for the cash utilization, is normally communicated as an annual rate (Hamid et al., 2017). Interest rates can be long term or short term. Short-term interest rates are impacted on by the Central Bank, therefore money is well monopolized. The long-term rates otherwise, indicate the current economy conditions and the inflationary tendencies (Semuel & Teddy, 2014).

An interest rate is a borrower paid price so as to access and utilize resources at that particular time rather than later in the future (Casa, Girardone & Molyneux, 2012). According to Crowley (2014) interest rate is the price paid by the borrower to use the money from one who loans out. Interest is one of the major components of the economy for it does not only affect the financial institutions but the economy in general; for the economic growth is directly correlated with the interest rate setting. Interest rate Fluctuation is the rate offered on the borrowed amount that is dynamic since it depends on the base rate that is not constant as well (Genay, 2014).

The regulator ensures that the interest rate does not fluctuate too much in order to have a stable economy and to control risks. The fluctuations of the interest rate are highly reciprocal to the investors' behaviors in terms of lending patterns. For when the interest rates fall, the investors borrow and the spending pattern raises and when the interest rates are high tend not to borrow and the spending pattern reduces in the economy (Onuonga, 2014). Too much variation in the interest rates leads to inefficient and unstable economy which makes the country to be unproductive and at the same time it affects the ability to make effective and valuable financial decisions (Cecchetti, 2013)

Despite the Central Bank of Kenya directive on the interest rates setting to the borrowed amount in the commercial bank, there is need for the commercial banks to incorporate the interest rates management system in order to determine different interest rates and maturity offered to their clients. The commercial banks offers diverse financial service that makes them vulnerable to the uncertain economic environment which makes them dependent on the economic conditions for instance the interest rate being offered (Sashoo, 2012).

The financial performance of the commercial is depends hugely on the interest for it affects the operational mechanism which eventually affects the profitability of the commercial banks. There is need for interest rate management basis on the financial performance of the bank by applying financial performance measurement tools such as ROA, NIM, and ROE among others (Bosworth, 2014)

1.1.2 Financial Performance

Financial performance entails the degree at which financial objectives are attained. The firm's policies and results are measured in monetary terms. Through financial performance, the general financial health of a firm in a specified period of time is normally established. One can also establish comparison between firms in similar or different industry. Financial position of firms can be determined through analyzing financial statement for instance balance sheet and income statement.

A commercial bank's financial health is not only significant to depositors but also to employees, shareholders and the country's economy. In the last two decades there has been an improvement in the banking industry but this does not mean that all firms in the industry are profitable; some are still struggling to survive (Oloo, 2015). A banks performance is affected by microeconomic and macroeconomic factors (Flamini et al 2015). Besides achieving social and economic goals, profitability is the main goal banks strive to achieve.

According to Mosaa and Bhatti (2011), there are three measures of performance: Market, accounting and hybrid. Accounting measures majorly uses analysis of various ratios. There are various ratios which are used to measure bank's performance. Murthy and Sree, (2013) concluded that the main measures were Net margin Return on Equity and Return on Asset. A ratio shows the quantitative relation between two amounts whereby the number of times one value holds or is hold in another. Financial ratio computation is classified into five categories: leverage, financial performance, profitability, turnover and valuation ratios (Winfred and Curry 2014)

Since banks are required to publish their accounting data as a requirement by the government, it is advantageous to use them. They are also subjected to internal control thus enhancing their credibility (Beck, Randa and Trandafir, 2010)

1.1.3 Lending Interest Rate Fluctuation and Financial Performance

Interest rate is the highest determinant of the operating income of a bank in a given year. A similar trend is also observed when it comes to the operating expenses, where again the expenses of running the bank are majorly determined by the interest rates. Subsequent indicators are all determined by these two indicators, therefore, interest rates generally determine the financial performance of a bank.

Nevertheless, to completely understand how the interest rates impacts the financial performance of a bank, we need to highlight the two key principles of interest rates that affect a bank. First, all banks make a profit from the difference between the lending rates given to the borrowers and the deposit rates given to the customer making deposits into the banks.

This always results in a lending spread that falls once the yield curve flattens (Genay, 2014). Secondly, bigger rates of interest decrease the current discounted value of the assets. This is because banks grip onto fixed income assets e.g. bonds and loans. Furthermore, banks meet bigger losses when the duration of their assets increases relative to that of the liabilities (King, 2015).

The empirical relation amid rates of interest and commercial banks financial performance has been confirmed in various studies previously undertaken. Sattar and Khan (2014) in their study concluded that interest rates considerably affect the bank's interest income. They further proved that banks' income is related to interest rates that shows that the financial performance of commercial banks and the interest rates offered to investors cannot be separated. Another study by Okoye and Onyekachi (2013) supports the connection amid interest rates and financial performance of bank and go further to conclude that the two are intertwined and hence the significant relationship.

1.1.4 Commercial Banks in Kenya

The Banking sector in Kenya can be termed as being overbanked whereby there are 42 commercial banks in Kenya with two banks: imperial bank and chase bank under receivership. The view of Kenya being overbanked is from the high ratio of banks to the total population. South Africa's 55 million people are served by 19 banks compared to 44 million people in Kenya being served by 42 commercial banks. Kenya's banking sector is experiencing consolidation and increase in mergers and acquisition due to this. Tanzania's Bank M was allowed to acquire 51% of Oriental commercial bank, Fina being acquired by GT bank, Equatorial bank being acquired by Mwalimu Holdings and Giro bank being acquired by I&M over the past recent years.

All commercial banks are regulated by the CBK, the Capital Markets Authority also oversees listed banks. The CBK was established by an act of parliament of March 24, 1966. The CBK is mandated to formulate and implement monetary policy with the goal of promoting price stability, financial performance, solvency and ensuring the banking sector is stable among other functions. The Kenya Bankers Association brings bank together in order to protect their interest while addressing issues affecting them.

Over the years, the government has continually asked commercial banks to lower their lending rates to no avail. Different Acts have been put in place to lower the rates but the Banking (Amendment) Act, 2016 became successful with the President signing it. There are a number of change that were made: Banks are expected to disclose all loan information for instance charges before granting a loan, ceiling for lending interest was set not exceeding the 4% base rate and floor for deposit rate was set to at least 70% base rate. Banks and other financial institutions are required to abide to these rules.

Capping of interest rates in Kenya will definitely have a significant impact on Commercial banks financial performance. They have to therefore to look at other ways to gain competitive advantage by implementing other strategies. Through adopting implicit strategies, organization performance and market competitiveness was enhanced through quality (CBK, 2016).

1.2 Research Problem

A country's economy depends on the banking system as the main financial intermediary. While performing this role they are often faced with a number risks like financial performance risk, foreign exchange risk, Operational hazard, credit hazard and loan rate hazard among others. Mitigation of this risk is important since it impacts on its financial performance. According to the Benstein (2014) losses that arise from an individual loan or a breakdown in control can completely remove gains on many other transactions The lending interest rate largely affects bank's profitability. Variation in these interest rates negatively impacts on financial performance of commercial banks. Hence achieving profits as banks main objective proves to be a challenge to bank managers (Gregory et al, 2015)

In Kenya, the CBK recognizes commercial banks importance in the economy for it ensures macroeconomic stability and the existence of effective monetary policy execution and development of an economy is determined by the performance of the banking industry (Hartmann, 2014). The interest curbing affects the financial performance of commercial banks. Operational efficiency of the banks is greatly affected by the interest rates which eventually affect its financial performance, which has been a major issue for the bankers and makers of policies that forms the basis of this study. The variation of the interest rates has made the commercial banks to shy away to give loans which has led to loss of customers in which it has affected their financial performance. Proper interest rates works in both the commercial banks and customers favor for the banks' risk tolerance rises and the customers is able to borrow therefore refining the financial performance of the commercial bank. Rates of Interest is among the major players in the financial performance in the financial sector (Gardner, 2015)

Several researchers both locally and globally, have provided insights on the effects of fluctuating rates of interest and banks performance. Ngugi (2011) studied on the interest rates variation and banks performance where there was a negative relation amid banks performance and interest rates although the study did not focus on the all operational banks. Sattar and Khan (2014) established a relationship between interest rate and banks financial performance being a global study in Pakistan there some variation may existence creating the difference in their operational structure. Malik (2015) studied on the consequences of interest rates on profitability of banks. The established a positive correlation relation amid rates of interest and profitability although the study only focused on the ROA, ROE and NIM.

From the aforementioned studies it is evident that no study has been done to the best knowledge of the researcher on the variation of the rate of interest on the financial performance considering the internal and external factors that has an influence on the financial performance especially due to the reforms that has happened recently on the commercial bank sector. Hence, this research tends to gap fill through answering: What is the effect of interest rates Fluctuation on the financial performance of Commercial Banks in Kenya?

1.3 Research Objective

The objective of this study was to establish the impact of interest rate fluctuation on the financial performance of commercial banks in Kenya.

1.4 Value of the Study

Findings from this research were helpful to commercial bank regulators i.e. the Central Bank of Kenya. The CBK is tasked to ensure proper functioning of financial institutions, therefore understanding relationship between lending interest rates and performance of commercial banks may ensure they set up rules that favor both the public and commercial banks.

Investors benefit also from this research for it showcases the importance borrowing through the financial institutions which contribute to the overall economic growth, which later results to improved profitability in the commercial banks. The researchers and academia in this area, as the study may serve as background material for further research and it may also highlight on the current trends in the effects of interest rate variation on commercial banks financial performance. This may contribute new knowledge of interest rate variation on financial performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section examines the theoretical framework on which the interest rate is founded, literature on financial performance, interest rate variation and financial performance. A review of empirical studies is also provided alongside a conceptual framework linking the elements of interest rate variation and financial performance.

2.2 Theoretical Foundations

Several theories offer insights into the rationale underlying the interest rates. The main theory of the rate of interest is the classical one and the others theories include loanable funds theory and Keynes Liquidity Preference Theory, which are discussed below;

2.2.1 Classical theory

It was developed by Kimberly (1776), in which the theory states that the interest rates is a major factor influencing the level of investments and the willingness of the investors to save as well as ensuring an equilibrium is being sustained between savings and level of investment. Many scholars in finance and economics were the frontiers of the classical theory for instance Marshall, Cassel and Flux. They elaborated that the classical theory of interest should assume the investment level as the demand and the savings as the supply and the interest rate as the price of the resources being invested.

When the level of investment is equal to the level of savings, the interest rates becomes relatively fixed. The interest rates vary depending on the varying financial market. An equilibrium is achieved when the investment and savings are equal (Maynard, 2014).This theory is essential to the research study for it shows how the balance between the interest rate and how saving affects the interest rate, it also elaborates on the essence of the investment levels to the interest rate variations.

2.2.2 Keynes Liquidity Preference Theory

It was developed by Keynes (1936), it states that rate of interest as the reward of an institution after giving out its liquidity for a certain period of time. According to Keynes (1936), the demand for resources and the money supply are the determinants on the interest rates. He continues by arguing that if the investment level and savings level are equal disputing the neoclassical theory in which the idea was based on the equilibrating savings and investment. Keynes theory is majorly a liquidity preference theory that is designed to fill the gaps between income and savings. That is the theory is designed in a way that it provides the understanding of change in income that equalizes savings and investment and making the interest rate constant (Hawtrey, 2015).

This theory is essential in the research study for it is able to identify other factors that could influence the financial performance of the financial institutions other than the interest rate which is made constant. It provides other alternatives to improve financial performance other than the changing interest rate in order to be profitable.

2.2.3 Loanable Funds Theory

Created by Robertson and Ohlin (1930) in whom the theory recognizes the supply and demand of funds that are loanable as the determinant of the level of the interest rate. The theory presents a more practical approach to the interest rate curb as compared to other theories discussed earlier. In this theory, it recognizes the investment hoarding and dissaving as the main factors that affects the loanable funds. There is need to compare the expected returns to the rate of investment before making the investment decisions. The demand for loanable funds and the rate to which the investors are willing to have an inverse relationship.

According to Robertson and Ohlin (1930), hoarding affects the demand of loanable funds for it determines whether the investors will have access to the liquidity requirements, he finally recognized dissaving as the main factor that reduces savings which end up reducing the interest rate because this happens when people tend to spend more funds beyond their income (Kumar, 2015). This theory is essential in the research study for it provides a comprehensive relationship between the behaviors of the investors to the loanable funds which eventually affects the interest rate.

2.3 Determinants of Financial Performance

There are a few aspects which affects the commercial bank financial performance which comprises of the external and internal factors. The internal factors are those factors that the entails the internal state of the commercial banks that the bank has a control of them for instance capitalization of the bank, size of the bank while the external factors involves those factors that the commercial bank do not have control over them for instance the interest rate, management efficiency, GDP growth rate and legal frameworks

2.3.1 GDP growth rate

This is also among the aspects that influences on the economy environment thus have an influence on the commercial banks financial performance, in which the investors will find it suitable to borrow the loans from the commercial banks to investment in a conducive environment thus leading to higher demand of credit and this leads to increase the financial performance of the commercial banks (Cecchetti, 2008)

Nouaili et al. (2015) agree that growth in GDP has a positive relationship with bank performance in their findings based on Tunisian banks and conclude that the banks took advantage of the changes made in the financial sector in Tunisia. Obamuyi (2013) finds a significant and positive effect of GDP on performance in Nigeria. Dietrich and Wanzenried (2014) and Zhang and Dong (2011) also have similar findings. Kiganda (2014) in his study on Equity Bank in Kenya finds a direct and strong correlation on the bank's profitability but statistically insignificant.

2.3.2 Credit risk

This is also one of the factors that affects the financial performance of commercial banks which requires control and management by ensuring that the credit rating of all the clientsin the commercial bank is calculated and considered before the loan is given to the clients, and the management of how the approved loans will be disbursed to the customers. Due to the efficient management of the loans, the non-performing loans will reduce substantially and this will reduce the losses experienced in the commercial bank thus improving the financial performance of the commercial bank (Nassreddine, Sessi & Anis, 2013)

2.3.3 Management Efficiency

Every business entity is always determined by ensuring the resources are not wasted since the same resources are meant to improve the operations of an entity (Martinez, 2009). It is the duty of the management of the commercial banks to ensure that the bank's operational expenses are kept as minimal as possible while at the same time ensuring the profits are maximized management efficiency can be achieved by employment of the competent staff in the commercial banks. Competent staff will ensure any risks associated with any bank operations are minimal this will lead to improved financial performance. The management should put adequate control systems to monitor the operations in the commercial banks. This will ensure minimal losses among our commercial banks this will translate to improved financial performance. Management efficiency is measured by earnings growth rate.

2.4 Empirical Literature

Different empirical literatures that have been reviewed on the impact of interest rate Fluctuation on the Kenyan commercial banks financial performance have presented different conclusions. Some studies have confirmed negative gains from interest rate Fluctuation. However, some studies have concluded that there is insignificant effect of interest rate Fluctuation on the financial performance of the commercial banks involved.

2.4.1 International Evidence

Various research studies both local and global have given the rationale on the rate of interest impact on the financial performance of the financial institutions for instance the commercial banks. Wensheng, Lai, Leung and Shu (2003), studied on the effect of the risk premium on the Hong Kong dollar, in which they investigated on the performance of the financial institutions of the Hong Kong dollar to the US dollar interest rate. The aim of the research was to discover the impacts of the financial performance of the two currencies imposing on the assets quality and net interest rate margin. Using the data from 1993 to 2001, the researchers were able to conclude that interest rate variation has an influence in the financial state of financial institutions in which it recognized on the spread of the interest rate and worsened the assets quality. The study proved the theory that was previously discussed earlier in this chapter.

Phim (2001) studied on the impact of varying rates of interest on the overall commercial banks performance. The research study collected data on the 70 US commercial banks, in comparison of the assets owned by different commercial banks to the interest rate as per the regulation.

By the use of statistical analysis, the research concluded that the profitability of the commercial banks was responsive to the interest rates as per the regulation. It was also established that the change of the interest rate was associated with response to the total revenue and total cost. Although some of the recent studies have disputed these findings of Phim (2001) based on the time in which the research study was conducted. However, the research determined existence of a relation amid interest rate and the commercial banks financial performance.

In another similar research study by Nassreddine and Sessi (2013), studied on the factors that determines commercial banks financial performance and not necessary the interest rates. The study established some of the external and internal features that affect the financial performance like commercial banks size, capital of the commercialization, liquidity and credit control. By the use of data from different previous research they were able to use cognitive mapping technique to determine the impact of each determinant, all the same, the interest rate was a consistent factor that was evident determinants of the financial performance.

Waseern and Sattar (2014), studied on the impact of variation of rate of interest on the profit generated the study focused on the four commercial banks in Pakistan between the period 2008 to 2012. The research used Pearson correlation technique, where the interest rate was related to the profitability of the individual commercial bank. The study concluded that the profitability is dependent on the interest rate. This study was closely related to the Kenyan financial market especially due to the overcharged interest rates on the borrowers compared to depositors.

Apir (2015), studied on the effect of rate of interest risk on commercial banks performance in Nigeria. The research concentrated on the rate of interest and overall performance relationship. The research used descriptive analysis from the selected Nigerian commercial banks. The research concluded interest rate fluctuation affects the overall commercial banks financial performance. However, it was also established that management of the commercial banks as per the regulation also played a bigger part on their financial performance. The research also revealed that the existence of the uniformity of interest rates will result in stiff competition among the commercial bank.

2.4.2 Local Evidence

Nduati (2012) studied on the impact of spread of rate of interest on commercial banks financial performance, the study recognizes the spread as the variance between the customers' deposit rate and the borrower lending rate. The study established spread of interest rate was influenced by the financial institutions. Low spread was seen to provide stiff foundations for financial institutions seeking competitive edge. Using the data collected from CBK, the analysis of the data show cased the interest rate spread as a most important factor in determining the commercial bank financial performance.

King (2015) studied on the rates of interest effects to the overall financial bank performance. In which the aim was to learn how the rate of interest affects financial performance. By use of descriptive survey, the findings concluded that there is higher interest rate on the loans than on the interest they pay on deposits. Net interest income is the resultant dissimilarity amid the two and the source of higher profits. The research which was conducted in the USA, an average amount of $80 million dollars was recorded in terms of yearly net interest income.

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The study identified that the lending services are the main income sources of the financial institutions hence, the financial institutions will experience high financial performance if the interest rate given to lenders is higher than that paid on deposits'.

A study by Wambari & Mwangi (2017) on how financial institutions in Kenya financial performance is affected by the rates of interest revealed that the financial institutions financial performance is affected by the rate of rating positively. Deposit interest ratios however, affect performance of Kenyan commercial banks negatively. Management of liquidity influences performance. The study came to the conclusion that there is a significant positive relationship between financial performance of commercial banks and the ratio of the lending rate. They also concluded that the ratio of interest charged on deposits affects bank performance negatively.

While studying the effect of the capping of interest rates shareholding of banks that are listed on the NSE, Mbua (2017) found that Analysis of the importance of bank interest rates as a factor to consider when making the decision to invest in bank shares showed that an increase in lending rates led to an increase in share prices while a decrease in the lending rates led to a decrease in the share prices. For most banks in the year 2016, there was a sharp decline in the share prices when lending rates were lowered. Some Banks's share prices lost almost half their values while the majority had more than 11% decline in the share price. An analysis on the attractiveness of the bank share prices after the capping of interest rates in September 2016 showed that a decrease in the lending rates led to many investors selling the bank shares in their portfolios and probably opting for other investment alternatives.

This is because lower interest rates are associated with lower potential returns to investments. Investors therefore limit their investments which investments are used by banks to advance loans from which profit is made.

Langat (2013) was determined in establishing how the rates of interest spread influenced banking industry performance in Kenya. It was of interest to note that the banking industry performance in Kenya was influenced by the spread of interest rates to a very large extent. Further, CBK's regulations as well as variables of macro-economic (exchange rates, management efficiency, competition as well as credit risk) were found to dictate the trends of the interest rate spread.

2.5 Conceptual Framework

This is a tool that indicates the relation amid the independent and dependent variable (Kombo and Tromp, 2009). Thus it provides the understanding of the subsequent findings by showing the relationship between variable. According to April (2015) the management efficiency rate has a negative correlation relation with the commercial banks financial performance, Westeern et al (2014), established that the economic growth has a direct influence in the financial performance of the commercial for it will increase the investment levels as it was also recognized by Phim (2001), the accessibility level of the credit facilities has a relationship that is direct to the return on assets of the commercial banks. The conceptual framework in this study showed how the fluctuation of the interest rates through the control variables such as GDP growth rate, credit risk and management efficiency has an effect in the commercial banks financial performance especially on the return on assets.

Interest rate Fluctuation

Financial performance

Return on Assets

GDP growth rate

Credit risk

Management Efficiency
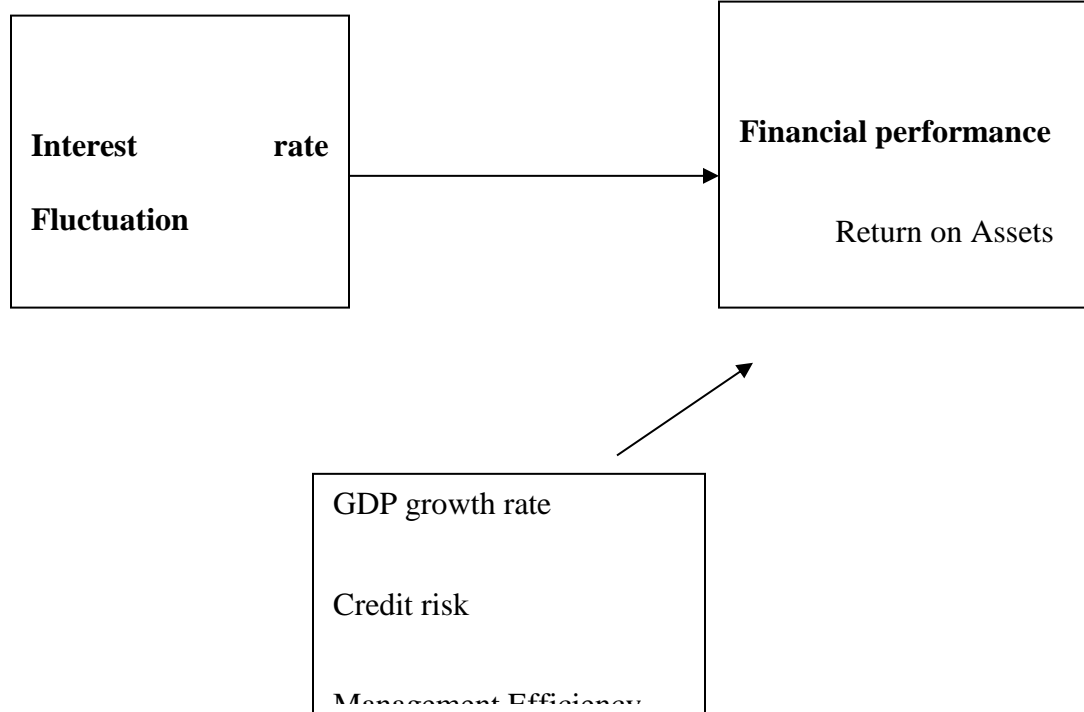
Control Variables

Source: Researcher (2018)

Figure 2.1: Conceptual Framework

2.6 Summary of Literature Review

This section began by introducing the theoretical context which entails the Loanable fund theory which showed how customers' demands and the supply of loanable funds determines the interest rates which was seen as opposite of the classical theory where savings and investment determines the interest rate and Keynes theory showcased the demand and supply of resources of money as the determinant of interest rate.

However, the theories were not comprehensive on the level of savings and investment, but we can recognize all the theories based on the interest rate.

From the review of the global and local previous studies, it was evident that interest rate greatly affected the financial performance of the commercial bank, despite the numerous studies on the impacts of rate of interest on financial performance, for the studies have studied on different variables that affects the interest rates. Thus, it is evident that no studies had been to the best knowledge of the researcher on the impacts of rate of interest on the financial performance especially after reducing the interest rate by the Central Bank of Kenya to a uniform ceiling of the interest rate and considering the internal and external factors that affects interest rates. Thus, the need to fill the gap that this study tended to fill.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the methodology used in seeking answers to the study question. It addressed the design adopted in research, the study population, data collection method and analysis

3.2 Research Design

Dooley (2007) defines research design as providing information and solution to problems through planning, organizing, collecting and analyzing data. Descriptive studies and exploratory studies are among the methods different researchers have used in their research. The research employed a descriptive survey. Descriptive deign research is normally the best for collecting data and shows the connections and explains phenomena, the way it is (Kothari, 2004). A descriptive research tries to explain the features of some groups, make an estimate of persons with specific characteristics and predict things concerning the study.

3.3 Population

Grove and Burns (2003) define population as every element that's eligible for addition in a research. Study population was all the 42 commercial banks operating in Kenya as at 31 December 2017; hence a census was carried out because of its relatively low population size (Appendix I)

3.4 Data Collection

The research collected the necessary data to address the research question by use of secondary data, in which the income statements from the period between 2008 and 2017 was considered as the main data source which was extracted from CBK offices and website as during this period there has been a turbulence of the economy and reforms in the commercial banks in Kenya. All the data to be considered was made sure it met the requirement of accuracy and completeness before analyzing the data and it was on a yearly basis. Financial Performance of Commercial Banks measured by Return on Assets (ROA) on a yearly basis was collected from the respective banks annual reports, Interest Rates Fluctuation measured by the standard deviation of the weighted average lending rate of the commercial banks, GDP growth rate on a yearly basis was collected from CBK reports while credit risk measured as the ratio of non-performing loans to total loans on yearly terms for the commercial banks and management efficiency, as measured by non-interest expense to total assets was collected from the respective banks annual reports.

3.5 Diagnostic Tests

The study also carried out tests on normality, autocorrelation and multicollinearity, which is a situation where variables in explanation, two or more, in a model of multiple regression are related highly linearly and was tested using correlation analysis and the variance inflation factors. Normality was tested using kurtosis and skewness while autocorrelation (independence of observations) was tested using the Durbin Watson test.

3.6 Data Analysis

Analysis was done by use of descriptive statistics, the multiple regression analysis and the Pearson correlation. Descriptive statistics aided in summarizing the research data while correlation was used to assess the association among the variables and to identify the closely related variables. The multiple regression model worked to establish existing connections between the independent and dependent variables.

3.6.1 Analytical Model

The regression model was established in the following manner

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4$$

Where;

Y= Financial Performance of Commercial Banks measured by Return on Assets (ROA) on a yearly basis

X_1=Interest Rates Fluctuation measured by the standard deviation of the weighted average lending rate of the commercial banks

X_2= Natural log of real GDP growth rate on a yearly basis

X_3= Credit risk measured as the ratio of non-performing loans to total loans on yearly terms for the commercial banks

X_4= Management Efficiency, as measured by Non-interest expense to total assets

β_0=Constant

β_1, β_2, β_3, β_4=Coefficient of the regression model

3.6.2 Statistical Test of Significance

The t test statistics was used to test the significance of the variables that are independent while the F test statistic and ANOVA was employed to test the regression equation's significance. The coefficient of determination was used to determine the variation explained by the independent variables

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section presents the research findings on the study on the impact of interest rate Fluctuation on the financial performance of commercial banks in Kenya. Analysis of secondary data commenced by undertaking a descriptive analysis of the study variables aimed at obtaining the general profile of the data. In addition, appropriate regression diagnostic checks were undertaken on the data so as to determine its suitability for further statistical analysis. Further, an estimation of the regression models specified in section 3.5 was undertaken and interpretation of the results performed using the inferential statistics.

4.2 Response Rate

The research used yearly secondary data, which covered a time of 10 years from the year 2008 and 2017. The study obtained complete data for the considered period.

4.3 Descriptive Statistics

Descriptive statistics comprises of the mean, standard deviation, maximum, minimum values, number of observations, skewness and kurtosis. Table 4.1 shows the descriptive results.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Dev	Skewness	Kurtosis
ROA	42	-.015	.1	.02830	.004844	-1.311	1.289
Interest rates	42	3.587	4.510	3.96535	.255684	.633	-.462
Ln_GDP	42	13.359	13.906	13.6096	.160201	.261	-1.057
Credit risk	42	.010	.091	.05570	.019464	-.098	-.095
Management efficiency	42	78.460	175.180	125.470	29.0350	.007	-1.210

The finding on table 4.1 indicates that the average ROA of the commercial banks for the considered study period was 0.02830 with a minimum and maximum ROA of 0.015 and 0.035 respectively. The results further show that the average fluctuation is3.96535 with a minimum and maximum fluctuation of 3.587and 4.510 while the average credit risk is 0.05570 with the minim and maximum values being 0.010 and 0.091 respectively. The findings further show that the average management efficiency over the study period is 125.47 with minimum and maximum management efficiency being 78.460 and 175.180 whereas the average GDP in terms of natural log is 13.6096 with the minimum and maximum GDP being 13.359 and 13.906 respectively. The kurtosis and skewness values range between the recommended ranges of -1 and +1 thus an indication the data is normally distributed.

4.4 Diagnostic Tests

Since the data collected was over a time period of 10 years, there was a need to conduct diagnostic tests to establish whether it was free from multicollinearity and Autocorrelation before it was used to run a regression model. A variance management efficiency factor method was used to test for multicollinearity while Durbin Watson was used to test for Autocorrelation.

4.4.1 Normality Tests

The proper application of the parameters of inferential statistics the assumption of normality is tested. This is to ensure that the kurtosis and skewness of the data is tested. This is just to make a confirmation on whether the data under study is normally distributed. The data normality was then tested by use of Kolmogorov-Smirnov Test and the Shapiro-Wilk Test. The second method is best used when the sample of the data is small i.e. less than fifty. The method is much more reliable especially when making a determination on kurtosis and skewness of the data. When the result is below 0.05, then it is slowly deviating from the distribution of the data that is normal.

Table 4.2: Shapiro-Wilk Test of Normality

Variables	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Interest rates fluctuation	.288	42	.331	.747	42	.401
Credit risk	.364	42	.331	.656	42	.401
GDP growth rate	.309	42	.331	.742	42	.401
Management Efficiency	.329	42	.331	.703	42	.401
ROA	.349	42	.331	.616	42	.401

In accordance to the results, the Shapiro-Walk values were 0.401 for Interest rates fluctuation, Credit risk, GDP growth rate, Management Efficiency and ROA each. Kolmogorov-Smirnov tested significant values were at 0.331 for interest rates fluctuation, credit risk, GDP growth rate, management efficiency and ROA each. This brings an implication that the p-value is far much greater than level 0.05 then the prediction that the data was normally distributed cannot be denied. The tested results are therefore of the population emanating from the normal distribution.

4.4.2 Multicollinearity Test

Multi-colinearity is the type of the test that makes an evaluation of whether the independent variable under the study is correlated or not. The multicollinearity test was done to check if the date have high correlation or are independent variable. The VIF was used to make an evaluation of how the variable correlate and the level of variance each variable has as a result of the dependence with the other variables. Upon the application of the rule of the thumb when VIF is bigger than 10 then there must be an existence of a great problem with the multicollinearity hence this is very dangerous to the research. The outcome of multicollinearity test was as presented in Table 4.3.

Table 4.3: Variance Management efficiency Factor Test of Multicollinearity

| | Colinearity Statistics | VIF |
	Tolerance	
Interest rates fluctuation	.500	2.000
Credit risk	.608	1.646
GDP growth rate	.633	1.580
Management Efficiency	.493	2.027
ROA	.242	2.083

4.4.3 Test of Serial correlation

Wooldridge F-statistic serial correlation analysis was done to test whether the study variables were correlated in any way. Serial correlation test was done and as per the results it is clear that there is no correlation. This ensures the OLS estimates are not biased. The diagnostic results are found on Table 4.4 below

Table 4.4: Serial Correlation

Test	Statistic
Durbin Watson	1.998

Source: Research Findings

The Durbin Watson serial correlation test results as per Table 4.4 indicated the value to be 2.469 which is more than 2 implying that there is no serial correlation.

4.4.4 Heteroscedasticity

This takes place when the error term of the variance is different across the observed data. The heteroscedasticity is very essential in examination of the difference that exist in the variance of the observation to the other (Godfrey, 1996). The research work maximised on the conduct of regression analysis of the independent variables Glejser test (1969). In accordance to this case, the assumption made is that if the value>0.05, then there should be very minimal problem of the herescedasticity. The results for tests of Heteroscedasticity were as presented in Table 4.5.

Table 4.5: Test for Heteroscedasticity

Model		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.125	.012		3.856	.000
	Interest Rates Fluctuation	.096	.056	.112	0.258	.148
	real GDP growth rate	.256	.089	.349	0.481	.86
	Credit risk	.174	.070	.145	0.463	.089
	Management Efficiency	.102	.073	.123	0.412	.065

a. Dependent Variable: ROA

Basing on the level of output, the values obtained>0.05, hence there is no big difference existing in the variation of dependent to independent variables that were tested

4.5 Correlation analysis

Correlation was used to determine the strength of the connection among the variables. Table 4.6 shows the correlations

Table 4.6: Correlation Matrix

	ROA	Interest rates fluctuation	Credit risk	GDP growth rate	Management Efficiency
ROA	1				
Interest rates fluctuation	0.773	1			
Credit risk	-0.463	-0.316	1		
GDP growth rate	0.618	0.163	0.216	1	
ManagementEfficiency	0.652	0.161	0.233	0.462	1

The study established the association between lending interest rates and stock returns of commercial banks in Kenya using a Pearson Correlation analysis. The study findings presented in Table 4.6 established that there is a significant positive relationship between ROA and Interest rates fluctuation (rho=0.773). Therefore, it can be implied that an increase in Interest rates fluctuation is associated with increased ROA. Secondly, the findings showed that there is a weak negative significant relationship between ROA and Credit risk (rho=-0.463). Thirdly, the findings showed that there is a strong positive significant relationship between GDP growth rate and ROA (rho=0.618). Fourthly, there was a significant positive relationship between Management Efficiency and ROA (rho=-0.652).

4.6 Regression Analysis

The relationship between lending interest rates fluctuation and financial of commercial banks in Kenya was established using an ordinary least square regression model after the diagnostic tests indicated that the assumptions of OLS would not be violated. Regression analysis involved the analysis of coefficient of determination, model significance and model coefficients

Coefficient of determination indicates the percentage changes in the dependent variable that is explained by the independent variables in a regression model.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.804053	0.646501	0.616543	1.035581

Dependent Variable: ROA

Predictors: (Constant), Interest rates fluctuation, Credit risk, GDP growth rate and Management Efficiency

Table 4.7 indicates that the coefficient of determination (R squared) was 0.646 which implies that 64.6% of the changes in financial performance of commercial banks is explained by interest rates fluctuation, credit risk, GDP growth rate and the management efficiency. The adjusted R square value of 0.616 revealed that 61.6% of the changes in stock returns of commercial banks is explained by only the significant variables in the study

Table 4.8: ANOVA of the Regression

	Sum of Squares	df	Mean Square	F	Sig.
Regression	98.851	4	24.712	21.580	0.00003
Residual	29.7735	37	1.1451		
Total	**178.0493**	**41**			

Dependent Variable: Commercial banks ROA

Predictors: (Constant), Interest rates fluctuation, credit risk, GDP growth rate, and management efficiency

The study also established the model significance of the regression model linking lending rates fluctuations to financial performance of commercial banks. The study findings revealed that the overall model was significant. The F statistic value of 21.58 was significant (Sig = 0.00003 < 0.05), hence an indication that the model linking model linking lending rates fluctuations to financial performance of commercial banks was significant.

To corroborate the findings, the study also used the F-distribution table to obtain the F-critical value (F 0.05 (4,37)) calculated at = 5%, using denominator degrees of freedom of 37 and numerator degrees of freedom of 4 and compared against the F-calculated value of 21.58.

The rule of the thumb is that if F-calculated is greater than the F-critical, then the model is significant. The F-critical value from the F-distribution table was 2.879 which is less than 21.58 hence it confirms the previous findings that the model linking model linking model linking lending rates fluctuations to financial performance of commercial banks listed at NSE was significant.

Table 4.9: Coefficient of Correlation

	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.77	0.451		8.3592	0.004
Interest rates fluctuation	0.782	0.121	0.146	6.4628	0.003
Credit risk	-0.463	-0.079	0.126	-5.8607	0.001
GDP growth rate	0.473	0.073	0.045	6.4794	0.005
Management Efficiency	0.532	0.073	0.142	7.2876	0.004
a. Dependent Variable: ROA					

$ROA = 3.77 + 0.782X_1 + 0.463X_2 + 0.473X_3 + 0.532X_4 + \varepsilon$

From the finding in Table 4.10, the study found that holding Interest rates fluctuation, Credit risk, GDP growth rate and Management Efficiency at zero Commercial banks ROA will be 3.77.

It was established that a unit increase in Interest rates fluctuation, while holding other factors (credit risk, GDP growth rate and management Efficiency) constant, will lead to an increase in ROA by 0.782 (p = 0.003). Further, unit increase in Credit risk, while holding other factors (Interest rates fluctuation, GDP growth rate, and management efficiency) constant, will lead to a decrease in ROA by 0.463 (p = 0.001). A unit increase in GDP growth rate, while holding other factors (Interest rates fluctuation, Credit risk, and management Efficiency) constant, will lead to an increase in ROA by 0.473 (p =0.005).A unit increase in Management Efficiency, while holding other factors (Interest rates fluctuation, Credit risk and GDP growth rate) constant, will lead to an increase in Commercial banks ROA by 0.532 (p = 0.023)

This infers that credit risk contributes most to the Commercial banks ROA followed by Interest rates fluctuation. At 5% level of significance and 95% level of confidence, Interest rates fluctuation, Credit risk, GDP growth rate and management Efficiency are significant in ROA.

4.7 Interpretation of the Findings

Results of the Pearson's correlation coefficient depicts that there is a significant positive relationship between ROA and Interest rates fluctuation. Therefore, it can be implied that an increase in Interest rates fluctuation is associated with increased ROA. In line with the study findings, Wensheng, Lai, Leung and Shu (2003) conclude that interest rate variation has an influence in the financial state of financial institutions in which it recognized on the spread of the interest rate and worsened the assets quality. Waseern and Sattar (2014) concluded that the profitability is dependent on the interest rate.

Secondly, the findings showed that there is a weak negative significant relationship between ROA and Credit risk. However, Nassreddine, Sessi and Anis (2013) due to the efficient management of the loans, the non-performing loans will reduce substantially and this will reduce the losses experienced in the commercial bank thus improving the financial performance of the commercial bank.

Thirdly, the findings showed that there is a strong positive significant relationship between GDP growth rate and ROA. In tandem with the study findings, Cecchetti (2008) opined that GDP growth rate is also one of the factor that influences on the economic environment thus have an impact on the financial performance of the commercial banks.

Fourthly, there was a significant positive relationship between Management Efficiency and ROA.Martinez, (2009) observed that every business entity is always determined by ensuring the resources are not wasted since the same resources are meant to improve the operations of an entity. It is the duty of the management of the commercial banks to ensure that the bank's operational expenses are kept as minimal as possible while at the same time ensuring the profits are maximized management efficiency can be achieved by employment of the competent staff in the commercial banks. Competent staff will ensure any risks associated with any bank operations are minimal this will lead to improved financial performance. The management should put adequate control systems to monitor the operations in the commercial banks. This will ensure minimal losses among our commercial banks this will translate to improved financial performance. Management efficiency is measured by earnings growth rate.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section summarizes the research results, conclusions and research recommendations. The research finally indicates the limitations and areas, which may require additional research.

5.2 Summary of the Findings

The aim of this research was to explore the impacts of interest rate fluctuation on the Kenyan commercial banks financial performance. The main theory of the interest rate is the classical theory and the others theories include loanable funds theory and Keynes Liquidity Preference Theory. The independent variable of the study was interest rate fluctuation while the dependent variable was financial performance whereas credit risk, management efficiency and economic growth were incorporated as the control variables. The study employed a descriptive survey and the study population was the 42 Kenyan commercial banks, hence a census was carried out because of its relatively low population size.

The finding established that the average ROA of the commercial banks for the considered study period was 0.02830 and that the average interest rate fluctuation was 3.96535 while the average credit risk was 0.05570 respectively. The findings revealed that the average management efficiency over the study period was 125.47 whereas the average GDP in terms of natural log was 13.6096 and that the kurtosis and skewness values range between the recommended ranges of -1 and +1 thus an indication the data is normally distributed.

The correlation results established that the correlation between ROA and interests rates fluctuation was positive while the correlations between credit risk and ROA was negative. The correlation between management efficiency, real GDP and ROA were strong and positive. The results established that 61.6% of the variation in the dependent variable was accounted for by the independent variables. The results of ANOVA established that the F statistics value of 21.580 was significant as hence the regression model was significant and a good predictor of the relationship between the dependent and independent variables.

The linkage between the fluctuation of the interest rate and commercial banks financial performance was found to be significant as well as positive. However, the linkage between the credit risk and commercial banks financial performance was established to be significant though negative. The results also established that the relationship between management efficiency and financial performance of the commercial banks was positive and significant while the relationship between real GDP and financial performance of the Kenyan commercial banks was positive and significant.

5.3 Conclusions

The study findings established that there is a positive and significant relationship between interest rates fluctuation and financial performance of commercial banks. The study based on this finding therefore concludes there is significant relationship between interest rate fluctuation and financial performance of commercial banks in Kenya. The study findings established that there is a negative and significant relation amid credit risk and commercial banks financial performance. The study based on this finding concludes an existence of a noteworthy negative relation between credit risk and Kenyan commercial banks financial performance.

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The research findings established a positive and noteworthy connection existence between management efficiency and financial performance of commercial banks. The study based on this finding therefore concludes existence of a significant connection amid management efficiency and commercial banks financial performance in Kenya. The research findings established existence of a significant and positive relation amid the real GDP and financial performance of commercial banks. The study based on this finding determines existence of a significant connection between economic growth and commercial banks financial performance in Kenya.

5.4 Recommendations for Policy and Practice

It was concluded there was a noteworthy relation amid rate of interest fluctuation and commercial banks financial performance in Kenya. The study recommends that the Kenyan commercial banks management should ensure that they set up interest rate risk management strategies to ensure that they mitigate the effects of interest rates fluctuations.

The research concludes a noteworthy relation amid credit risk and Kenyan financial performance of commercial banks. The research recommends that commercial banks in Kenya should ensure they have effective strategies of managing credit risk to mitigate the effects of credit risks among commercial banks.

The research came up with existence of a significant connection amid management efficiency and commercial banks financial performance in Kenya. The research therefore recommends that the central bank of Kenya should ensure they effectively set up strategies to enhance management efficiency among commercial banks in Kenya in order to improve on their financial performance.

Finally, the research found a significant relationship between GDP and commercial banks financial performance in Kenya existed. The research therefore recommends that the government should come up with strategies that would foster GDP to improve the performance of the banking sector.

5.5 Limitations of the Study

The variables of this research were interest rates fluctuation, credit risk, management efficiency, the real GDP and financial performance measured using return on assets. The findings are therefore based on those variables and the specific measured adopted to measure those variables.

The study considered yearly data for the period of ten years from 2008 to 2017. The period of study was ten years which is not enough time to draw unequivocal conclusion.

The findings and conclusions are based on the considered research period and not prior period since the level of NPLs, Management efficiency and GDP keep on changing year in and year out. Finally, the study used secondary data which is historical in nature and may not reflect the current situation and the non-qualitative aspects.

5.6 Suggestion for Further Research

This research was based on commercial banks however; interest rates fluctuation affects financial institutions like microfinance banks, saving and credit cooperative societies and credit only micro finances, which charge interest rates on advanced amount. This study therefore recommends a research on the impacts of interest fluctuations on other Kenyan financial forms. The research also recommends a research on the impacts of interest rates fluctuation on nonperforming loan among Kenyan financial institutions.

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APPENDICES

Appendix I: List of Commercial Banks in Kenya

1. ABC Bank

2. Bank of Africa

3. Bank of Baroda

4. Bank of India

5. Barclays Bank of Kenya

6. SBM Bank (Formerly Chase Bank)

7. Commercial Bank of Africa

8. Cooperative Bank of Kenya

9. Consolidated Bank

10. Citi Bank

11. Credit Bank

12. Development Bank of Kenya

13. Diamond Trust Bank

14. Eco bank

15. Equity Bank

16. Family Bank

17. Fidelity Commercial Bank Ltd

18. First community Bank

19. Giro Bank

20. Guaranty Trust Bank of Kenya

21. Guardian Bank

22. Gulf African Bank

23. Habib Bank AG Zurich

24. Habib Bank

25. Housing Finance Company of Kenya

26. I&M Bank

27. Imperial Bank Kenya (In Receivership)

28. Jamii Bora Bank

29. Kenya Commercial Bank

30. Middle East Bank Kenya

31. National Bank of Kenya

32. NIC Bank

33. Oriental Commercial Bank

34. Paramount Universal Bank

35. Prime Bank (Kenya)

36. Sidian Bank

37. Spire Bank

38. Standard chartered Kenya

39. Stanbic Bank

40. Transnational Bank Kenya

41. United Bank of Africa

42. Victoria Commercial Bank

Appendix II: Return on Assets (ROA)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
African Banking Corporation Ltd	3.87	2.73	2.73	4.12	2.90	2.90	1.49	1.61	0.68	0.03
Bank of Africa (K) Ltd	1.34	1.22	1.88	1.43	1.30	2.00	0.33	-2.07	-1.79	-2.59
Bank of Baroda (K) Ltd	4.30	3.38	4.51	4.57	3.60	4.80	4.35	3.65	3.87	3.76
Bank of India	3.93	2.26	3.85	4.18	2.40	4.10	3.74	3.49	3.57	3.57
Barclays Bank of Kenya Ltd	6.75	6.58	5.45	7.18	7.00	5.80	5.44	5.01	4.32	3.73
Cfc Stanbic Bank (K) Ltd	2.10	3.29	3.85	2.23	3.50	4.10	4.31	3.56	4.58	4.93
Charterhouse Bank Ltd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chase Bank Ltd	2.19	2.54	2.73	2.33	2.70	2.90	3.08	0.00	0.92	0.49
Citibank N.A. Kenya	6.04	9.78	6.58	6.43	10.40	7.00	5.22	6.33	5.46	4.92
Commercial Bank of Africa Ltd	3.37	3.76	3.38	3.58	4.00	3.60	2.57	3.14	2.69	2.45
Consolidated Bank of Kenya Ltd	1.51	0.94	-0.75	1.61	1.00	-0.80	-1.82	0.35	-1.53	-2.07
Co - operative Bank of Kenya Ltd	3.46	4.51	4.42	3.68	4.80	4.70	4.43	4.14	4.52	4.57
Credit Bank Ltd	0.89	1.22	0.94	0.95	1.30	1.00	-1.02	-1.74	-2.21	-2.98
Development Bank of Kenya Ltd	1.29	0.75	1.69	1.37	0.80	1.80	1.88	1.05	1.51	1.56
Diamond Trust Bank (K) Ltd	3.94	4.61	4.61	4.19	4.90	4.90	4.47	3.69	4.00	3.86
Eco bank Kenya Ltd	0.42	-4.51	-3.10	0.45	-4.80	-3.30	-1.09	0.18	-10.05	-15.30
Equatorial Commercial Bank Ltd	0.52	-4.32	0.94	0.55	-4.60	1.00	-2.78	-4.53	-4.57	-5.41
Equity Bank Ltd.	6.43	6.96	7.24	6.84	7.40	7.70	7.26	6.56	6.94	6.87
Family Bank Ltd.	1.89	2.54	3.76	2.01	2.70	4.00	4.24	3.55	4.69	5.15
Fidelity Commercial Bank Ltd	2.62	0.85	2.35	2.79	0.90	2.50	1.80	-1.84	-1.28	-2.11
First Community Bank Ltd	1.20	2.73	1.69	1.28	2.90	1.80	0.67	0.07	-0.05	-0.52
Guaranty Trust Bank Ltd	1.99	1.88	1.50	2.12	2.00	1.60	2.08	1.86	1.80	1.76
Giro Commercial Bank Ltd	2.62	1.60	2.63	2.79	1.70	2.80	3.13	3.03	3.26	3.45

Guardian Bank Ltd	1.80	1.79	2.82	1.92	1.90	3.00	2.59	2.25	2.74	2.87
Gulf African Bank Ltd	1.13	2.63	2.54	1.20	2.80	2.70	3.11	4.42	4.87	5.55
Habib Bank A.G. Zurich	2.74	3.95	4.04	2.91	4.20	4.30	5.29	3.53	4.75	4.98
Habib Bank Ltd	4.34	6.11	5.83	4.62	6.50	6.20	5.63	4.74	5.35	5.29
Imperial Bank Ltd	5.99	5.17	5.45	6.37	5.50	5.80	4.75	-	4.47	4.01
I&M Bank Ltd	5.45	4.89	5.17	5.80	5.20	5.50	5.64	5.66	5.61	5.62
Jamii Bora Bank Ltd	- 1.68	1.41	1.22	-1.79	1.50	1.30	0.73	0.22	1.37	1.69
Kenya Commercial Bank Ltd	4.68	4.89	5.17	4.98	5.20	5.50	5.93	5.01	5.56	5.64
Middle East Bank (K) Ltd	1.87	0.75	1.32	1.99	0.80	1.40	1.28	0.75	0.64	0.44
National Bank of Kenya Ltd	3.35	1.60	1.79	3.56	1.70	1.90	1.90	- 1.34	-1.34	-2.30
NIC Bank Ltd	4.30	3.95	4.32	4.57	4.20	4.60	4.44	3.99	4.08	3.99
Oriental Commercial Bank Ltd	3.60	1.69	2.35	3.83	1.80	2.50	1.07	0.49	-0.29	-1.03
Paramount Universal Bank Ltd	2.25	1.13	1.13	2.39	1.20	1.20	1.32	1.60	1.10	0.96
Prime Bank Ltd	2.89	2.54	3.57	3.07	2.70	3.80	4.18	3.99	4.54	4.88
Sidian Bank Ltd	2.59	3.01	3.95	2.75	3.20	4.20	4.61	2.72	3.90	4.04
Standard Chartered Bank (K) Ltd	4.73	5.55	5.64	5.03	5.90	6.00	6.42	3.83	4.87	4.68
Trans - national Bank Ltd	3.81	3.48	2.16	4.05	3.70	2.30	1.86	2.39	1.31	0.80
UBA Kenya Ltd	- 5.38	- 12.78	-7.05	-5.72	- 13.60	- 7.50	-6.97	- 3.91	-4.47	-3.44
Victoria Commercial Bank Ltd	4.05	4.51	4.04	4.31	4.80	4.30	3.68	3.38	3.20	2.90

Appendix III: Interest Rates Fluctuation

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
JAN	13.78	14.78	14.98	14.03	19.54	18.13	17.03	15.93	18	13.66
FEB	13.84	14.67	14.98	13.92	20.28	17.84	17.06	15.47	17.91	13.69
MAR	14.06	14.87	14.8	13.92	20.34	17.73	16.91	15.46	17.87	13.61
APR	13.91	14.71	14.58	13.92	20.22	17.87	16.7	15.4	18.04	13.61
MAY	14.01	14.85	14.46	13.88	20.12	17.45	16.97	15.26	18.22	13.71
JUN	14.06	15.09	14.39	13.91	20.3	16.97	16.36	16.06	18.18	13.66
JUL	13.9	14.79	14.29	14.14	20.15	17.02	16.91	15.75	18.1	13.7
AUG	13.66	14.76	14.18	14.32	20.13	16.96	16.26	15.68	17.66	13.65
SEP	13.66	14.74	13.98	14.79	19.73	16.86	16.04	16.82	13.86	13.69
OCT	14.12	14.78	13.85	15.21	19.04	17	16	16.58	13.73	13.71
NOV	14.33	14.85	13.95	18.51	17.78	16.89	15.94	17.16	13.67	13.68
DEC	14.87	14.76	13.87	20.04	18.15	16.99	15.99	18.3	13.66	13.64

Appendix IV: GDP growth Rate

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Quarter 1	4.40	7.10	7.88	8.98	5.35	5.79	4.99	5.84	6.36	6.22
Quarter 2	8.40	7.50	9.70	6.96	5.00	6.03	6.56	6.79	6.90	5.28
Quarter 3	5.60	8.00	9.53	5.87	5.22	6.19	4.37	7.48	6.03	4.67
Quarter 4	6.60	10.70	11.36	6.05	6.83	3.12	8.28	6.23	6.20	4.98

Appendix V: Credit risk

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
African Banking Corporation Ltd	0.26	0.18	0.18	0.27	0.19	0.19	0.10	0.11	0.05	0.00
Bank of Africa (K) Ltd	0.09	0.08	0.12	0.09	0.09	0.13	0.02	-0.14	-0.12	-0.17
Bank of Baroda (K) Ltd	0.28	0.22	0.30	0.30	0.24	0.32	0.29	0.24	0.26	0.25
Bank of India	0.26	0.15	0.25	0.28	0.16	0.27	0.25	0.23	0.24	0.24
Barclays Bank of Kenya Ltd	0.45	0.44	0.36	0.48	0.46	0.38	0.36	0.33	0.29	0.25
CfC Stanbic Bank (K) Ltd	0.14	0.22	0.25	0.15	0.23	0.27	0.29	0.24	0.30	0.33
Charterhouse Bank Ltd	0.17	0.15	0.17	0.21	0.23	0.24	0.13	0.12	0.12	0.00
Chase Bank Ltd	0.15	0.17	0.18	0.15	0.18	0.19	0.20	0.30	0.06	0.03
Citibank N.A. Kenya	0.40	0.65	0.44	0.43	0.69	0.46	0.35	0.42	0.36	0.33
Commercial Bank of Africa Ltd	0.22	0.25	0.22	0.24	0.26	0.24	0.17	0.21	0.18	0.16
Consolidated Bank of Kenya Ltd	0.10	0.06	-0.05	0.11	0.07	-0.05	-0.12	0.02	-0.10	-0.14
Co - operative Bank of Kenya Ltd	0.23	0.30	0.29	0.24	0.32	0.31	0.29	0.27	0.30	0.30
Credit Bank Ltd	0.06	0.08	0.06	0.06	0.09	0.07	-0.07	-0.12	-0.15	-0.20
Development Bank of Kenya Ltd	0.09	0.05	0.11	0.09	0.05	0.12	0.12	0.07	0.10	0.10
Diamond Trust Bank (K) Ltd	0.26	0.31	0.31	0.28	0.32	0.32	0.30	0.24	0.26	0.26
Eco bank Kenya Ltd	0.03	-0.30	-0.21	0.03	-0.32	-0.22	-0.07	0.01	-0.67	-1.01
Equatorial Commercial Bank Ltd	0.03	-0.29	0.06	0.04	-0.30	0.07	-0.18	-0.30	-0.30	-0.36
Equity Bank Ltd.	0.43	0.46	0.48	0.45	0.49	0.51	0.48	0.43	0.46	0.45
Family Bank Ltd.	0.13	0.17	0.25	0.13	0.18	0.26	0.28	0.24	0.31	0.34
Fidelity Commercial Bank Ltd	0.17	0.06	0.16	0.18	0.06	0.17	0.12	-0.12	-0.08	-0.14
First Community Bank Ltd	0.08	0.18	0.11	0.08	0.19	0.12	0.04	0.00	0.00	-0.03
Guaranty Trust Bank Ltd	0.13	0.12	0.10	0.14	0.13	0.11	0.14	0.12	0.12	0.12
Giro Commercial Bank Ltd	0.17	0.11	0.17	0.18	0.11	0.19	0.21	0.20	0.22	0.23
Guardian Bank Ltd	0.12	0.12	0.19	0.13	0.13	0.20	0.17	0.15	0.18	0.19
Gulf African Bank Ltd	0.07	0.17	0.17	0.08	0.19	0.18	0.21	0.29	0.32	0.37
Habib Bank A.G. Zurich	0.18	0.26	0.27	0.19	0.28	0.28	0.35	0.23	0.31	0.33
Habib Bank Ltd	0.29	0.40	0.39	0.31	0.43	0.41	0.37	0.31	0.35	0.35
Imperial Bank Ltd	0.40	0.34	0.36	0.42	0.36	0.38	0.31	0.28	0.30	0.27
I&M Bank Ltd	0.36	0.32	0.34	0.38	0.34	0.36	0.37	0.37	0.37	0.37
Jamii Bora Bank Ltd	-0.11	0.09	0.08	-0.12	0.10	0.09	0.05	0.01	0.09	0.11
Kenya Commercial Bank Ltd	0.31	0.32	0.34	0.33	0.34	0.36	0.39	0.33	0.37	0.37
Middle East Bank (K) Ltd	0.12	0.05	0.09	0.13	0.05	0.09	0.08	0.05	0.04	0.03
National Bank of Kenya Ltd	0.22	0.11	0.12	0.24	0.11	0.13	0.13	-0.09	-0.09	-0.15
NIC Bank Ltd	0.28	0.26	0.29	0.30	0.28	0.30	0.29	0.26	0.27	0.26
Oriental Commercial Bank Ltd	0.24	0.11	0.16	0.25	0.12	0.17	0.07	0.03	-0.02	-0.07
Paramount Universal Bank Ltd	0.15	0.07	0.07	0.16	0.08	0.08	0.09	0.11	0.07	0.06
Prime Bank Ltd	0.19	0.17	0.24	0.20	0.18	0.25	0.28	0.26	0.30	0.32
Sidian Bank Ltd	0.17	0.20	0.26	0.18	0.21	0.28	0.31	0.18	0.26	0.27

Standard Chartered Bank (K) Ltd	0.31	0.37	0.37	0.33	0.39	0.40	0.43	0.25	0.32	0.31
Trans - national Bank Ltd	0.25	0.23	0.14	0.27	0.25	0.15	0.12	0.16	0.09	0.05
UBA Kenya Ltd	-0.36	-0.85	-0.47	-0.38	-0.90	-0.50	-0.46	-0.26	-0.30	-0.23
Victoria Commercial Bank Ltd	0.27	0.30	0.27	0.29	0.32	0.28	0.24	0.22	0.21	0.19

Appendix VI: Management Efficiency

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
African Banking Corporation Ltd	193.5	136.5	136.5	206.0	145.0	145.0	74.5	80.5	34.0	1.5
Bank of Africa (K) Ltd	67.0	61.0	94.0	71.5	65.0	100.0	16.5	-103.5	-89.5	-129.5
Bank of Baroda (K) Ltd	215.0	169.0	225.5	228.5	180.0	240.0	217.5	182.5	193.5	188.0
Bank of India	196.5	113.0	192.5	209.0	120.0	205.0	187.0	174.5	178.5	178.5
Barclays Bank of Kenya Ltd	337.5	329.0	272.5	359.0	350.0	290.0	272.0	250.5	216.0	186.5
CfC Stanbic Bank (K) Ltd	105.0	164.5	192.5	111.5	175.0	205.0	215.5	178.0	229.0	246.5
Charterhouse Bank Ltd	125.5	115.5	130.5	156.0	175.5	181.0	97.5	93.0	89.5	0.0
Chase Bank Ltd	109.5	127.0	136.5	116.5	135.0	145.0	154.0	225.0	46.0	24.5
Citibank N.A. Kenya	302.0	489.0	329.0	321.5	520.0	350.0	261.0	316.5	273.0	246.0
Commercial Bank of Africa Ltd	168.5	188.0	169.0	179.0	200.0	180.0	128.5	157.0	134.5	122.5
Consolidated Bank of Kenya Ltd	75.5	47.0	-37.5	80.5	50.0	-40.0	-91.0	17.5	-76.5	-103.5
Co - operative Bank of Kenya Ltd	173.0	225.5	221.0	184.0	240.0	235.0	221.5	207.0	226.0	228.5
Credit Bank Ltd	44.5	61.0	47.0	47.5	65.0	50.0	-51.0	-87.0	-110.5	-149.0
Development Bank of Kenya Ltd	64.5	37.5	84.5	68.5	40.0	90.0	94.0	52.5	75.5	78.0
Diamond Trust Bank (K) Ltd	197.0	230.5	230.5	209.5	245.0	245.0	223.5	184.5	200.0	193.0
Eco bank Kenya Ltd	21.0	-225.5	-155.0	22.5	-240.0	165.0	-54.5	9.0	-502.5	-765.0
Equatorial Commercial Bank Ltd	26.0	-216.0	47.0	27.5	-230.0	50.0	-139.0	-226.5	-228.5	-270.5
Equity Bank Ltd.	321.5	348.0	362.0	342.0	370.0	385.0	363.0	328.0	347.0	343.5
Family Bank Ltd.	94.5	127.0	188.0	100.5	135.0	200.0	212.0	177.5	234.5	257.5
Fidelity Commercial Bank Ltd	131.0	42.5	117.5	139.5	45.0	125.0	90.0	-92.0	-64.0	-105.5
First Community Bank Ltd	60.0	136.5	84.5	64.0	145.0	90.0	33.5	3.5	-2.5	-26.0
Guaranty Trust Bank Ltd	99.5	94.0	75.0	106.0	100.0	80.0	104.0	93.0	90.0	88.0
Giro Commercial Bank Ltd	131.0	80.0	131.5	139.5	85.0	140.0	156.5	151.5	163.0	172.5
Guardian Bank Ltd	90.0	89.5	141.0	96.0	95.0	150.0	129.5	112.5	137.0	143.5
Gulf African Bank Ltd	56.5	131.5	127.0	60.0	140.0	135.0	155.5	221.0	243.5	277.5
Habib Bank A.G. Zurich	137.0	197.5	202.0	145.5	210.0	215.0	264.5	176.5	237.5	249.0
Habib Bank Ltd	217.0	305.5	291.5	231.0	325.0	310.0	281.5	237.0	267.5	264.5
Imperial Bank Ltd	299.5	258.5	272.5	318.5	275.0	290.0	237.5	208.5	223.5	200.5
I&M Bank Ltd	272.5	244.5	258.5	290.0	260.0	275.0	282.0	283.0	280.5	281.0
Jamii Bora Bank Ltd	-84.0	70.5	61.0	-89.5	75.0	65.0	36.5	11.0	68.5	84.5
Kenya Commercial Bank Ltd	234.0	244.5	258.5	249.0	260.0	275.0	296.5	250.5	278.0	282.0
Middle East Bank (K) Ltd	93.5	37.5	66.0	99.5	40.0	70.0	64.0	37.5	32.0	22.0
National Bank of Kenya Ltd	167.5	80.0	89.5	178.0	85.0	95.0	95.0	-67.0	-67.0	-115.0
NIC Bank Ltd	215.0	197.5	216.0	228.5	210.0	230.0	222.0	199.5	204.0	199.5

Oriental Commercial Bank Ltd	180.0	84.5	117.5	191.5	90.0	125.0	53.5	24.5	-14.5	-51.5
Paramount Universal Bank Ltd	112.5	56.5	56.5	119.5	60.0	60.0	66.0	80.0	55.0	48.0
Prime Bank Ltd	144.5	127.0	178.5	153.5	135.0	190.0	209.0	199.5	227.0	244.0
Sidian Bank Ltd	129.5	150.5	197.5	137.5	160.0	210.0	230.5	136.0	195.0	202.0
Standard Chartered Bank (K) Ltd	236.5	277.5	282.0	251.5	295.0	300.0	321.0	191.5	243.5	234.0
Trans - national Bank Ltd	190.5	174.0	108.0	202.5	185.0	115.0	93.0	119.5	65.5	40.0
UBA Kenya Ltd	-269.0	-639.0	-352.5	-286.0	-680.0	-375.0	-348.5	-195.5	-223.5	-172.0
Victoria Commercial Bank Ltd	202.5	225.5	202.0	215.5	240.0	215.0	184.0	169.0	160.0	145.0