

**THE EFFECT OF KENYA BANKERS REFERENCE RATE (KBRR) ON
LOANS ADVANCED BY COMMERCIAL BANKS IN KENYA.**

BY

NAFTALY KAMATU WATHIARI

D63/74744/2014

SUPERVISOR

MR. ODIPO MARTIN KHOYA

**Research Project submitted to the School of Business, University of Nairobi, in
Partial fulfillment of the Requirements for the Award of the Degree in Master
of Science in Finance.**

2016

DECLARATION

This research project is my original work and has not been presented for examination in any other university.

Signed Date.....

Naftaly Kamatu Wathiari

Reg. No.D63/74744/2014

This research project has been submitted for examination with my approval as the candidate's university supervisor.

Signed Date.....

Mr. Odipo Martin Khoya

Lecturer, Department of Finance and Accounting

School of Business

University of Nairobi

DEDICATION

This is a very special dedication to my family, being my dad, mum, four sisters and a nephew. They have been a pillar of support both emotionally, financially, a source of inspiration and have all contributed to my great successes in life. Thank you for your unfailing support and prayers.

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to my supervisor Mr Odipo who guided me through this wonderful project on the effects of the Kenya Bankers Reference Rate on loans advanced by Commercial Banks in Kenya. His contribution in stimulating suggestions and encouragement helped me to coordinate my project.

Secondly I would like to thank my parents, friends, and colleagues whose guidance in my project presentation that improved my presentation skills and their help in finalizing this project within the limited time frame.

ABSTRACT

The Kenya Bankers Reference Rate (KBRR) was introduced in July 2014 as a common base lending rate for all commercial banks in Kenya through the concerted effort of the government, central bank and other stakeholders. Its main aim was to enhance transparency with cost of cost of products and competition among commercial banks which would result to a reduction in the lending rates to single digits. The reduction was to spike the supply of credit facilities/advances to the private sector leading to growth in the economy. This study therefore sought to determine the effects of the Kenya Bankers Reference Rate on the loans advanced by the commercial Banks in Kenya.

The study adopted a causal research design which was conducted so as to identify the extent and nature of cause-and-effect relationships among the variable. Monthly data on 43 commercial banks in operation between the periods 2013-2015 was analysed this being the entire population in the banking industry sourced from the Central Bank's supervisory reports, banks financial statements and from the Kenya Bankers Association. An analysis was done using the STATA software and in addition a regression model was run through the OLS method. The study carried out inferential statistics tests to determine how introduction of KBRR has impacted total loans and advances by commercial banks in Kenya

The study concluded that KBRR positively influenced lending by commercial banks in Kenya. This is from the increased competition angle given that upon its introduction, all the commercial banks were subjected to the same base rate. However, testing for the level of significance of this effect, we found out that the effect is not statistically significant. This therefore calls for the review of the KBRR to find out why the effect could not be significant. This could be perhaps from the fact that KBRR could not still have addressed fully the information asymmetry problem within the Kenyan credit market. The researcher therefore recommends that the concerned stakeholders starting with the Central Bank of Kenya as the regulator to relook at KBRR mainly from the computational point of view.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iiiv
ABSTRACT	ii
LIST OF ABBREVIATIONS	viii
LIST OF FIGURES	ix
LIST OF TABLES	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.1.1. Kenya Bankers Reference Rate.....	2
1.1.2. Loans	2
1.1.3. Relationship between KBRR and Loans	3
1.1.4. Commercial Banks in Kenya	3
1.2 Research Problem	4
1.3 Objective of the Study	xv
1.3.1 Specific Objectives.....	xv
1.4 Value of the Study	xv
CHAPTER TWO: LITERATURE REVIEW	xvii
2.1 Introduction	xvii
2.2 Theoretical literature.....	xviii
2.2.1 Loan Pricing Theory.....	xviii
2.2.2 Credit Market Theory	xix
2.2.3 Hold up and soft budget constraint theories	xix
2.3 Determinant of Loans	xx
2.3.1 Capitalization level.....	xxi
2.3.2 Demand Deposits	xxi
2.3.3 Kenya Banks' Reference Rate	xxi

2.4 Conceptual Framework.....	xxii
2.5 Empirical Literature.....	xxii3
2.6 Summary of Literature and Research Gap.....	xxviii
CHAPTER THREE: RESEARCH METHODOLOGY.....	xxix
3.1 Introduction.....	xxix
3.2 Research Design.....	xxix
3.3 Population.....	xxix
3.4 Data collection and Analysis.....	xxix
3.5 Statistical tests.....	xxx
CHAPTER FOUR: DATA ANALYSIS, RESULTS, AND DISCUSSION.....	21
4.1 Introduction.....	21
4.2 Descriptive Statistics.....	21
4.3 Correlation Analysis.....	22
4.4 Regression Analysis and Hypotheses Testing.....	23
4.5 Discussion of Research Findings.....	24
CHAPTER FIVE: RESEARCH METHODOLOGY.....	<u>25</u>
5.1 Introduction.....	25
5.2 Summary of Findings.....	25
5.3 Conclusion.....	25
5.4 Recommendations.....	26
5.5 Limitations of the Study.....	26
REFERENCES.....	Error! Bookmark not defined.

LIST OF ABBREVIATIONS

APR	Annual Percentage Rate
CBK	Central Bank of Kenya
CBR	Central Bank Rate
GDP	Gross Domestic Product
K	Addition premium
KBRR	Kenya Banks' Reference Rate
MPC	Monetary Policy Committee
NPL	Non-Performing Loans

LIST OF FIGURES

Figure 2.1: Conceptual framework	12
--	----

LIST OF TABLES

Table 4.1: Descriptive Statistics.....	21
Table 4.2: Correlation matrix.....	22
Table 4.3: Regression results	23

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The role of the banking industry within the economy cannot be underestimated given its crucial contribution towards financial intermediation. CBK (2014) states that, in the past years, there have been concerted efforts from both the government to review the cost of bank credit. This is informed by the argument that the average lending rates by banks in Kenya are considerably high compared to other economies. The perception here is that high-interest rate spreads are a precursor to the high lending rates. The adoption of the Total Cost of Credit (TCC) and the Annual Percentage Rate (APR) as per the prudential guidelines of the Central Bank (CBK), were concerted efforts by the government to lower the lending rates in the economy. To lower the cost of credit to a single digit figure, the government through the concerted efforts of the National Treasury, Central Bank of Kenya and the entire banking industry introduced KBRR in July 2014 as per CBK (2014) report.

In advancing loans to the public, Avlonitis and Indounas(2001) collection of pricing practices states that firms oftenly opt to use price competition and games when other alternative strategies such as pricing strategies cannot be fully applied. Dennis Robertson (1930) loanable funds theory of the market states, interest rates are determined by demand and supply forces of loanable funds. In this case, the price of the loanable fund (i.e. loans, bonds, saving deposits) is the rate at which the lender charges on the loaned amount to the borrower. Loan pricing can be evaluated as the portion above disposable income that is channeled towards current consumption and investment. An interest rate is equated to the nominal rate, equally estimated by the availability and desirability of loan-able funds as stated by (Mishkin, 2004).

From the history, commercial banks in Kenya have been relying on the short-term market interest rates as the base rates against which they compute their lending rates. More specifically, commercial banks have been relying on the 91 day Treasury bill rates and 182 day Treasury bill rates as their base rates upon which they compute their lending rates. However, despite this pricing framework, there has been a general perception that lending rates have remained high. It

is this realization that Kenya Bankers Reference Rate (KBRR) was introduced in the market in July 2014. The introduction of KBRR was backed by two main reasons namely: the introduction of a standard base rate for all the banks thus enhancing competition among the banks and thus lowering the cost of credit in the long run and secondly is improving transparency in pricing of loans among the banks CBK (2014).

1.1.1. Kenya Bankers Reference Rate (KBRR)

An interest rate is the price at which the borrower is willing to pay for monies borrowed from a lender or it's the fee expected to be paid back on borrowed assets. Sayedi, (2013) avers that interest rates to a capitalistic society are fundamental and can be expressed as a percentage rate annually. The introduction of KBRR replaced the usage of 91 day Treasury bill rates and 182 day Treasury bill rates as the base rates set by commercial banks. CBK (2015) states that in the computation of KBRR, key consideration is the six months 91 day TB rates moving average and two months moving average in Central Bank Rate (CBR). This is because the 91-day Treasury bill is reflective of the floor of risk free assets whereas the CBR is the reflective stance of the monetary policy.

The efficiency of KBRR in achieving its intended objectives can be gauged in two perspectives. First, is the effect of KBRR on the total lending by the banks to the public. The argument here is that if KBRR has succeeded in ensuring competitive pricing of loans, it's expected that the uptake of loans by the public will increase lending by banks. The second perception is the improvement in the banks' assets quality. This is based on the fact that KBRR introduction was to promote transparency in pricing of loans. As such this would amount to reduction in information asymmetry in the credit market CBK (2014).

1.1.2. Loans

A loan is the amount money borrowed with the expectation that settlement will either be one-off or in installments over a period usually with interest. The total loans and advances are perceived to be the assets for the bank. As such the increased lending to the public by banks directly implies

the growth in the balance sheet for the bank and ultimately improved financial performance via increased interest income on the loans and advances by the bank.

On the other hand, increased bank lending to the public implies welfare to the public via increased access to loans and advance that in turn increases their personal household consumption. As such the size of the bank, amount of demand deposits, the level of non – performing loans and the level of the bank’s capitalization all have a bearing in influencing resources available for lending to the public.

1.1.3. Relationship between KBRR and loans

CBK (2014) states that with the introduction of a common base rate for all commercial banks in Kenya, the efficiency of KBRR in achieving its intended objectives can be gauged by analyzing its effects on the amount of loans advanced by the banks to the public. The argument here is that if KBRR has succeeded in ensuring competitive pricing of loans, it’s expected that the uptake of loans by the public will increase leading to increased lending by banks. It is against this understanding that this study aims to determine the effectiveness of KBRR on the amount of loans among commercial banks in Kenya.

1.1.4. Kenyan Commercial banks

Kenyan Commercial Banks being financial intermediaries facilitate mobilization of savings through demand deposits mobilization, allocation of resources (loaning to the public) through lending, diversification and pooling of risks. As such the credit to the borrowers mainly referred to as private sector credit has become a core variable in analysing the overall economic growth rate in an economy. The expansion of credit to private sector implies increased access to credit hence increased consumption and investment (Hara, 1983).

Commercial banks operate by receiving cash deposits from the general public and loaning them out to the needy at statutorily allowed interest rates. Commercial banks in Kenya dominate our financial sector and therefore, a failure in the sector has a critical implication on the economic growth of the country. Based on the above, any insolvency experienced in the sector has an enormous outcome that can cause bank runs that bring general financial crisis and economic

problems (IMF, 2001). From CBK (2013) Banks Supervision Report, there were 43 commercial banks in operation as of December 2011. 30 had high local percentage ownership whereas 13 had high foreign percentage ownership. In regard to asset holding, those banks with high foreign ownership held 35% of assets in the banking sector (CBK, 2011)

1.2 Research Problem

Interest income on loans and advances still remain to be a major source of revenue to the banks income portfolio followed by investments in government securities. Obviously, any major changes in the lending rates consequently influences the interest income earned by a bank hence a shift in the bank's income statement. CBK(2014) report states that KBRR was introduced first, is to ensure a common base rate for all the banks upon which the lending rates are based and secondly is to lower information asymmetry in the credit market through transparency in pricing thus increasing access to credit by the public. It was therefore perceived that upon the achievement of the two objectives the cost of credit would then lower accordingly in the long run.

In Kenya, Interest rates have been fluctuating over the last few years with the effect of fluctuations remaining unknown (Otuori, 2013). The latest law on interest rate capping by the government was the motivation behind this study as there was little information about the effect of KBRR and its performance during adoption as the base rate and on uptake of credit facilities by the private sector as offered by Kenyan commercial banks. Mburu (2011) in his study looked at interest rates and their resultant effects on the financial performance of Kenyan commercial banks. Mwaura (2014) studied the effects of the Kenya Banks Reference Rate (KBRR) on the financial performance of Kenya Commercial Banks.

The study is further supported by the fact that most studies conducted about KBRR in Kenya have focused on profitability after its introduction. None of these studies had examined the effect of KBRR on uptake of credit facilities even though it was introduced with the aim of ensuring a common lending based among the lenders in the industry hence a fair playing ground for all. These developments in the market therefore point out the need for an investigation to fill in an existing gap, as to what extent the KBRR has achieved its intended goals and most importantly

how has it affected the performance of the banking industry at large. This therefore forms our researchable research problem. In this case, the study seeks to answer the following question: Has the introduction of KBRR increased or decreased the total lending by banks, and if yes by how much?

1.3 Objective of the Study

The major objective of the study is investigating the effectiveness of Kenya Bankers Reference Rate on loans advanced by commercial banks in Kenya.

1.3.1 Specific Objectives

More specifically, the study seeks:

1. To investigate the effects of Kenya Bankers Reference Rate on the mobilization of demand deposits by commercial banks.
2. To investigate the effects of Kenya Bankers Reference Rate on the core capital of commercial banks in the banking industry.

1.4 Value of the Study

This study is significant in three fold. First is the significance of the study to the policy makers mainly the central bank. Currently, there has been a debate about the efficacy of KBRR in lowering the cost of loans as well as lowering information asymmetry in the credit market by promoting transparency in the pricing of loans among commercial banks in Kenya.

It is clear that the government has tried to implement a number of measures in attempt to lower cost of loans in the credit market. These the include the introduction of the KBRR in July 2014 and the issuance of the euro bond aimed at increasing market liquidity and ultimately lowering lending rates and eventually influencing the lending behaviour among the banks. However, all these aspects do not take into a holistic consideration of the factors such as non – performing loans which might have significantly influenced the banks’ lending among other factors.

In addition, there currently exists scanty evidence on the KBRR efficiency in terms of empirical analysis. This study may therefore be helpful to policy makers in determining the effects of KBRR on promoting the access of the loans by the public thus aiding in formulation of policies geared towards increasing public lending by banks by making the credit accessible to the public. These policies go far way to even rethinking on the computation formula for KBRR. Secondly, the study will be essential in contributing to scholarly literature. Currently, majority of scholarly works in this field have focused on the interest rates spread and how this affects banks' profitability. KBRR being a recent phenomenon, the study will contribute to building the body of literature in this field. The study will be crucial in providing literature review as well as proposing possible areas for further studies in this area.

Lastly is the significance to both the borrowers and lenders of credit. The introduction of KBRR was meant to lower market information asymmetry in the credit market and lower cost of credit. The results of this study will be beneficial in bridging the information gap on how KBRR has fared in achieving these objectives. This will be core in informing the strategy by the lenders (commercial banks) and the regulator (Central Bank of Kenya) towards sensitization of the public on the importance of KBRR.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter covers both theoretical and empirical literature on determinants of lending behaviour among the Kenyan banks. More specifically, the chapter covers the theories underlying the banks' lending behaviour, the empirical studies with regard to banks' lending and the overview of the overall literature.

2.2 Theoretical literature

There exists vast literature on the theoretical literature with regard to banks' lending behaviour. The most essential role of any bank is acting as an intermediary by collection of savings from depositors and advancing these savings as loans to borrowers. In performing this function, banks are often regulated by the environment within which they operate.

According to Stiglitz and Weiss (1981) banks should not charge higher interest rates to cover for the increased default risk and they should therefore request for more collateral. In an ideal situation, banks create buffers by requesting riskier borrowers to avail additional security in order to maximize their comfort and or minimize their expected loss to these borrowers. In addition, the less risky borrowers tend to offer additional collateral as they generally hold more assets. Within finance literature, there exists several theories with regard to bank's behaviour in lending. In this study, the theoretical literature review is summarized as follows:

2.2.1 Loan Pricing Theory

This asserts that financial institutions should mainly target at lowering their interest rates. Therefore in their pursuit to collect maximum interest income, commercial banks should take into account the challenges of moral hazards and adverse selection. Banks find it hard to forecast the type of a borrower at the beginning of the banking relationship (Stiglitz and Weiss, 1981) given the high credit market information asymmetry.

Banks provoke adverse selection problems every time banks they set high interest rates. In most instances, the high risk borrowers are agreeable to the set high interest rates. The moral hazard(s) behavior develops once the borrowers receive the loans, and they possibly take on highly risky projects or investments (Chodecal, 2004). From this way of thinking according to Stiglitz and Weiss, it is common in a lot of situations to discover the interest rate set by the bank matching with borrowers risk profile.

2.2.2 Credit Market Theory

This form under the credit market advocates that the terms of credits clear the market. Given that the loan collateral remains or does not change, the credit market clears through the interest rate being the lone changeable price mechanism. Due to a rising demand for credit and a certain supply of loan and advances by banks, the interest rate can only rise if the credit market is clear, and vice versa. It is therefore believed that the higher the default risks of the borrower, alternatively the higher is the interest premium (Ewert et al, 2000) to compensate for any possible losses.

The increased need for credit facilities created by the low interest rates may eventually depreciate a country's currency. The CBK must therefore, alter interest rates in order to raise the borrowing cost. In turn, Commercial banks must therefore raise interest rates to contract their lending's in the long run. Although this theory does not explicitly discuss how collateral would effect on the risk premium, it creates the impression that collateral has no effect on lending rate, and if a risky borrower would wish to face the same lending rate as a borrower with a lower risk, then all that is required is to pledge more collateral to lower his risk profile and therefore enjoy a lower risk premium.

This brings about the "adverse selection" and "moral hazard" phenomena, firstly due to the information asymmetry existing between the borrowers and lenders. The borrowers assessment of the risk profile of this investment in most cases is more accurate compared to that of the lender. This might lead the borrower to undertake secret actions so as to increase his investment risk without the acknowledgement of the lender. This problem of adverse selection appears as lenders increase their interest rates to shield themselves against default. On the other hand, to only attract high-risk borrowers and eliminate low risk borrowers (Mason and Roger, 1998).

2.2.3 Hold up and soft budget constraint theories

According to the hold-up literature, joint lending helps to avoid the expropriation of informational rents. This in turn improves firm's incentives to make proper investment choices therefore increasing banks' profits (Von Thadden 2004, Padilla and Pagano 1997). Banks

consideration of the soft budget constraint problem is crucial in assisting them to evade advancement of further inefficient credit, through multiple bank lending's thereby avoiding the firms strategic problem and defaults. These two theories consider multiple banks' lending as a important means through which banks commit towards entrepreneurs and in encouraging their incentives.

The above theories however, do not visibly address how multiple-bank lending has an effect on banks incentives to monitor. Consequently, neither is clear in bringing out the apparent discrepancy between the widespread use of multiple bank lending and the importance of bank monitoring. Carlettic el al (2006) stated that when banks incentives to monitor are clearly taken into account, multiple bank lending may become optimal for banks with limited lending capacity to commit to high monitoring levels.

In spite of involving free riding and efforts, joint lending enables banks to increase the amount of loans and which helps them achieve greater diversification. This is crucial in mitigating the agency problem that may exist amongst banks and their depositors thereby improving incentives to monitoring. Looking at it as delegated monitors different from the classical theory of banks, their studies suggested that when banks lend highly, they may have a positive effect on overall monitoring increasing the prospects of a firm's profitability.

2.3 Determinants of Loans

The cost of funds that the banks lend out is therefore core in determining the lending business for the bank. Low costs of loanable funds imply that commercial banks can afford to price their loans cheaper thus increasing their uptake. The opposite is also true. The constituents of the pricing system as far as loans are concerned are of essence. One of such constituents is the introduction of KBRR in the market in July 2014 in an attempt to promote transparency in pricing of loans in the long run. However, we cannot clearly state whether KBRR has positively contributed to loan uptake among commercial banks until we evaluate the following determinants

2.3.1 Capitalization level

In looking at banks' lending, the capitalization level of the banks is of essence. The total capitalization level of the bank is the summation of core capital and supplementary capital. Capitalization level measures the ability of the commercial bank to meet the long-term obligations. It's therefore expected that the level of capitalization is positively related to increase lending business of the bank. In addition, the capitalization level indicates the net total assets of the bank which determines how much a bank is capable of committing towards lending. It measures the base for the total resources available to the bank for lending.

2.3.2 Demand Deposits

Mobilization of demand deposits from net savers is also core in determining commercial bank's lending business. Demand deposits form the largest liability of a commercial bank as far as commercial bank's balance sheet is concerned. This therefore implies that the bank must strive to convert these liabilities into assets.

This means that the bank has to convert the demand deposits into loans which are the largest assets for the banks. As such the more the demand deposits at the disposal of the bank, the more lending is required to convert the liability into an asset.

2.3.3 Kenya Banks' Reference Rate

Lastly is the pricing mechanism applied by the bank in arriving at the cost of lending. In determining the cost of the loan, some factors including the ones discussed above enter into the equation. More specifically, the pricing system will consider a number of things such as the short-term interest rates in the economy, the risks involved with that lending, credit history of the borrowers, the expected returns on funds among others.

In the Kenyan banking industry the price system applied by the commercial banks in arriving at the lending rate have undergone a paradigm shift especially with the introduction of the KBRR in July 2014. Initially, the banks used to have a lending based rate mainly the 91 – day TB rate or the 182 day Treasury bill rate upon which they would load other costs involved with such

specific lending to arrive at the lending rate. As such, banks used to choose whether to apply the 91 – day TB rate or the 182 day Treasury bill rate as their lending base rate at their discretion.

However, KBRR is a game changer with its introduction. This is for the fact the KBRR has replaced the base rate for banks. As such all the commercial banks are compulsory required to use the KBRR as their common based rate upon which they load other costs and profit margins (the so-called K element) to arrive at the lending rate. From this exposure, it's clear that KBRR has totally changed the loan pricing question mechanism by commercial banks. Therefore, the question would be how this has affected the total loans and advances by commercial banks.

2.4 Conceptual Framework

The cost of funds that the banks lend out is therefore core in determining the lending business for the bank. Low cost of loanable funds imply that commercial banks can afford to price their loans cheaper thus increasing their uptake. The opposite is also true. The constituents of the pricing system as far as loans are concerned is of essence. One of such constituent is the KBRR introduced in the market in July 2014 in Kenya in attempt of promote transparency in pricing of loans in the long run.

In looking at the bank lending, the capitalization level of the banks is of essence. The total capitalization level of the bank is the summation of core capital and supplementary capital. Capitalization level measure the ability of the commercial bank to meet the long term obligations. It's therefore expected that the level of capitalization is positively related to increase lending business of the bank.

Mobilization of demand deposits from net savers is also core in determining commercial bank's lending business. Demand deposits form the largest liability of a commercial bank as far as commercial bank's balance sheet is concerned. This therefore implies that the bank must strive to convert these liabilities into assets. This means that the bank has to convert the demand deposits into loans which is the largest assets for the banks. As such the more the demand deposits at the disposal of the bank, the more lending is required to convert the liability into asset.

Independent Variables

Dependent Variable

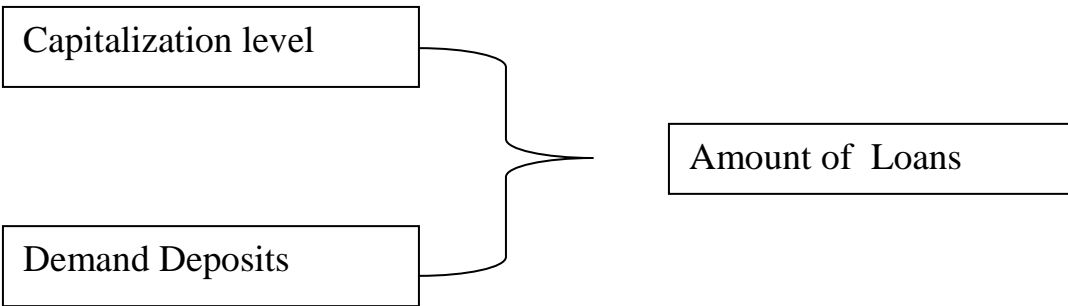


Figure 2.1 Conceptual framework

2.5 Empirical Literature

Jonas, Emmanuel, Kofi (2013) studied the lending behaviour among the Ghanaian banks. Using the GMM, they found that size of a bank and capital formation statistically and significantly impact banks' lending behaviour positively. This concurs with the earlier study by Stein (2000) who asserts smaller banks generally have relative advantages in producing soft information while larger banks boast of a relative advantage in lending based on hard information.

However, this study cites negative and major impact of macroeconomic indicators primarily the Central Bank lending rate and exchange rate on lending behavior. This is in conformity with Ehrmann et al. (2003) findings. In addition, the study unveiled a positive significant effect of competition in the banking industry on bank lending behaviour.

Olokoyo (2011) in his study, investigated the determinants of commercial banks' lending behaviour in Nigeria for the period 1990 – 2005 using total loan advances, the amount of deposits, the lending rate, bank's investment portfolio, stipulated cash reserve requirements ratio and their liquidity ratios. The study established the existence of long-run relationships between

the banks' lending, investment portfolio, volume of deposit, minimum cash requirement ratio, interest rates, liquidity ratio, foreign exchange and gross domestic product.

Lending rates were found to impact on banks' lending performance though not pronounced. The effects of the monetary policies being liquidity requirement and cash requirement ratio on lending behaviour, was not negative since banks should always ensure compliance with these policies. The study found out that the volume of deposit positively influenced the amount of loans advanced by banks in Nigeria.

The findings on the effects of the monetary policies on lending behaviour by Olokoyo (2011) however totally contradicts Ehrmann et al. (2003) who opined that monetary tightening has a severe negative impact on rather the undercapitalized banks' lending. The lending decision is affected by the macroeconomic environment within which it operates. An economic boom creates the need among businesses for loans in order to maximize on expansion within this period. Hence, banks investment opportunities equally soar. Alternatively, in periods of economic recession, the demand for credit decreases. However, there exists a pro-cyclical relationship between economic growth and bank lendings. Vazakidis and Adamopoulos (2009) stated that economic growth had a positive effect on credit market development in the Italian market. Therefore, the central bank's prime rate acts as an indicator of the movement in main economic variables like inflation which in turn affects interest rates.

When assessing the transmission mechanism, a rise in the prime rate negatively influences banks' lending behavior. It is an affirmation to the earlier study by Dell'Ariccia and Marquez (2006) who found out that banks credit expansions tend to be pro-cyclical; that is, high rates of growth in GDP tends to induce a high rate of growth in bank credit. Essentially, in the period of economic boom, banks relax their criteria and lend to both good and bad projects. In times of economic recession, most loans advances become non-performing and the source of credit dries up therefore rationing out even good projects. Consequently, the Exchange rate fluctuations, specifically currency depreciation in a home country results in banks' assets being undervalued in

foreign currencies as against their liabilities. Additionally, Lindgren et al. (1996) found that the fluctuations in exchange rate is the core cause of poor performance of banks' loans and borrowers, which consequently has an effect on bank profitability.

The circumstance is dreadful in developing economies which are exposed to foreign trade. Their over dependence on foreign trade with the constant exchange rate variation, weakens economic and financial growth in a country and is seen to be the crucial cause of the banking crisis in a lot of countries (Lindgren et al. 1996). In many developing and open economies like Ghana, the expectation is that exchange rate depreciation will negatively influence the banks' lending behaviour. Ngomsi and Djiogap (2012) studied the determinants of long-term bank lending behaviour in the Central African Economic and Monetary Community among six countries. Their study established that a commercial bank's muscle to extend any long-term business loans is positively influenced by bank's size, GDP growth, capitalization, and the availability of long-term liabilities.

The above findings underlined the crucial role of the supply side constraints in extending vital long-term credit to businesses by banks. They posit that while long-term liabilities and provisions for loan losses are not crucial in determining a bank's propensity to lend to business, but are important in determining a bank's long-term lending behavior. However, in contrast to the expectations, the study fails to establish any significant relation between inflation and its long-term loans lending. On bank ownership, the study revealed that foreign banks have a tendency to exhibit higher long-term loan ratios compared to the state-owned.

Malede (2014) investigated on the determinants of commercial banks' lending in the Ethiopian banking industry using panel data from eight banks for the 2005 -2011 period. The results of the study showed that there exist a significant relationship between banks' lending and banks size, gross domestic product, credit risk and liquidity ratios.

On the contrary, the study established that deposit, investments, cash required reserves and interest rates did not affect Ethiopian banks' lending. Therefore, the study concludes that

Ethiopian banks emphasize on credit risks and liquidity ratios as they weaken banks' loan disbursements leading to banks insolvency.

Christian and Pascal (2012), Cargill and Meyer (2006) and Montoro and Moreno (2011) all agree that an increase in the reserve requirement decreases lending by the commercial banks. This is contrary to the assertions by Friedman and Schwartz (1963) that an increase in the commercial banks reserve requirement is a source of the banks' credit creation. Olusanya et. al (2012) posit that increase in the reserve requirement has a positive impact on the banks total loans and advances. Moreover, Wilcox (2012) maintains that reserve requirement has small and statistically insignificant impact on the banks loans and advances. Olusanya et. al (2012) examined the determinants of commercial banks' lending behaviour in Nigeria and established that foreign exchange rates, investment portfolios, deposits and liquidity ratios all have positive impacts on the commercial banks' lending volumes.

Theodossiou (2011) argues that the bank's size measured by total assets and bank capitalization are crucial factors to commercial banks' business and long-term lending. Irina (2003) assesses the effects of exchange rate and bank liquidity in lending in the European perspective. He found out that higher lending rates do not encourage banks to lend more. This affirms the finding of a latter study by Karim et al (2011) who investigated on impacts of interest rates on the banks' lending in Malaysian context and ascertained that interest rates negatively affect lending between the banks while controlling for macroeconomic variables such as GDP and inflation. However, an earlier study by Karim and Adziz (2007) upon introducing macroeconomic policy instruments assert that monetary policy tightening instruments such as interest rates in Malaysian market reduces banks' lending to all sectors.

In regards to the size of the bank, Bashir (2003) asserts that large – banks have an advantage in providing a large variety of financial services to their clients since they are capable of mobilizing more funds. This conquers with Saurina (2002) and Rajan and Dhal (2003) who states that a big balance sheet enables managers to invest more in different geographical and business segments to address the any arising matters of asymmetric shocks. A study a year later bay Cole et. al (2004)

found out that small banks adopt small business loan underwriting practices that are riskier compared to those of larger banks.

Karim, Saini and Karim (2011) studied effects of the monetary policy on the loan advances by banks in the Malaysian market from 1913 to 2008. The study revealed that bank liquidity is core in determining the supply of loans by banks. This is in tandem with the earlier study by Aiusen and Franken (2010) who conclude that during the 2008 financial crises, banks were ultimately faced by liquidity stress hence capping their lending ability.

On the banks deposits, Mc Cathy et al. (2010) asserts that with customers deposits being the source of bank loans, there is definitely a direct positive effect of customer deposits on the banks' lending. This is in conformity with the earlier study by Sebastian (2009) established that demand deposits liabilities had the crucial positive impact on the banks' credit allocations in the Nigerian credit market.

Iannotta et al (2007) asserts that the “too big to fail” argument by large banks who would benefit from an inherent guarantee, in turn decreases their cost of funding allowing them to channel investments in riskier assets. This means therefore, the “too big to fail” status of large banks could lead to moral hazard behavior and excessive risk exposure. Where big banks see themselves as “too big to fail,” their motivation to hold liquid assets is limited and illiquid asset which are loans increases. Therefore, there is a likelihood of having a positive relationship between bank size and illiquidity. Moreover, since small banks are likely to be focused on traditional intermediation activities and transformation activities (Rauch et al. 2008; Berger and Bouwman 2009), they do have a small amount of liquidity. As a result, there can be positive relationship between bank size and illiquidity. Moreover, the bank size is considered important in the determination of bank lending decisions (Berger and Udell, 2006). Berger and Udell (2006) provide that large and complex banks tend to lend few loans to small-scale firms.

Stein (2000) is clear that there is a tendency for small banks to have an advantage in producing soft information whereas big banks tend to have an implicit advantage in lending based on hard information. On the flip side, where large and complex banks are able, through technical

expertise, to process soft information about small scale firms, then there would be a positive relationship between bank size and lending.

2.6 Summary of Literature and Research Gap

In light of the above theories as well as empirical analysis, lending business is essential to banking industry since undoubtedly lending is the heart of the banking business. It has also been revealed that banks' lending is affected by different factors such as bank specific and macroeconomic factors. However, review of literature has found that scanty information exist with regard to how the pricing mechanism influences the banks' lending business. It's against this back drop that this study aims at determining how the introduction of KBRR has influenced lending business among Kenya commercial banks via the change in the loan pricing mechanism.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the methodology that the study seeks to apply in carrying out the analysis. More specifically, the chapter covers the study research design, target population, sample design, data collection and data analysis.

3.2 Research Design

The research design is a planned structure of investigation so conceived as to obtain answers to research questions. This study will adopt a causal research design which will be conducted so as to identify the extent and nature of cause-and-effect relationships among the variables in the study. This study will carry out tests aimed at establishing whether there is a relationship between the variables. The study will test the relationship between the independent variables and the dependent variable (total loans and advances by the banks to the public).

3.3 Population

The study will utilize data from the 43 commercial banks in operation in operation between years 2012 – 2015. This is the entire population of commercial banks operating in the banking industry for the period under review.

3.4 Data collection and Analysis

The study will utilize data from the 43 commercial banks in Kenya for the period 2013 - 2015. The data to be sourced from the Kenya Bankers Association and the Central Bank of Kenya will be monthly data covering the entire banking industry.

From our theoretical and empirical literature review on the possible factors influencing bank loan advances we develop the two empirical models to be estimated as follow:

$$A = f(\textit{Capitalization and demand Deposits})$$

A - Amount of loans in Ksh

Capitalization - is the bank's capitalization level measured by core capital for the banking industry.

Demand Deposits - are the deposits collected from net savers measured by total volume held in the banking industry

$$A_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_t \dots\dots\dots$$

Where:

β_0 = intercept/constant term

$\beta_1 \dots\dots\dots \beta_2$ = are the parameters of the respective variables of the model.

X_1 = Capitalization measured in absolute amounts

X_2 = Demand Deposits measured in absolute amounts

A_t = Total Loans advanced by Commercial Banks in Kenya

ε = is the error term of the stochastic model

3.5 Statistical tests

Once the data for all individual banks is collected it will be aggregated together to form one data set. From this the data will be subjected to analysis using STATA software. At first, the pre – estimation tests will be conducted. These will involve: stationarity/ unit root tests, normality tests and heteroscedasticity test.

After the pre – estimation tests, empirical model was estimated using the data to obtain the coefficient of the variables hence informing the discussion of results. The regression model was estimated using the Ordinary Least Square (OLS) technique. Upon regression of models post estimation tests will be conducted to ensure that the estimators obtained from model are unbiased hence ensuring validity of the hypotheses testing. These post estimation tests will include the residual serial correlation test, autocorrelation tests and the normality test for the residuals.

In addition to running the regression model through OLS method, the study carried out inferential statistics test to determine how introduction of KBRR has impacted total loans and advances by commercial banks in Kenya. In this regard, the study will take two equal samples, one sample will be the pre – KBRR sample and the other is post – KBRR sample. Each sample will cover 18 months. Therefore the pre – KBRR sample will cover January 2013 – June 2014 while the post – KBRR sample will cover July 2014 – December 2015. Upon getting these two samples were tested for the difference among the two about their mean and their variance. If they are found to be statistically different from each other then we conclude that KBRR has positively impacted on total loans and advances by banks otherwise not.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter deals with the data analysis, results and discussion of the outcome. More specifically, the chapter covers descriptive statistics of all the variables mainly the mean values, minimum and maximum values, variance, standard deviation and the statistics on the distribution of the respective variables which are kurtosis value and skewness values. Also, the chapter covers correlation analysis among the variables as measured by the correlation coefficient matrix, regression analysis and hypothesis testing and discussion of research findings is also covered in this chapter.

4.2 Descriptive Statistics

The explanatory statistics of the dependent and independent variables of the model are reported in table 4.1 below and mainly consist of the mean, minimum and the maximum values of the respective variables. The measures of dispersion of the model variables are measured by variance and standard deviation values.

Table 4.1: Descriptive Statistics

	Total Loans	Capitalization	Deposits
Mean	1811753	2388142	1622945
Median	1787217	2386967	1610032
Maximum	2327465	2953181	1983131
Minimum	1378918	1896778	1296975
Std. Dev.	308221.8	331958.4	220714.9
Skewness	0.192384	0.079505	0.127186
Kurtosis	1.752289	1.709893	1.611321
Jarque-Bera	2.557242	2.534489	2.989701
Probability	0.278421	0.281606	0.224282
Observations	36	36	36

From table 4.1 is evidently clear that the total number of observations are 36 given that we have January 2013 – December 2015 period and the data frequency is monthly. Looking at the mean value, bank capitalization level has the highest mean value of Kshs. 2,388,142 million for the period under the review. The total loans and advances come second with a mean value of Ksh. 1,811,753 million with total deposits averaging at Ksh. 1,622,945 million.

On the measures of dispersion as measured by standard deviation bank capitalization has the highest deviation from its mean value standing at 331958.4 while total deposits have the least deviation from its mean value of 220714.9. On the distribution of the variables we find that all the variables are skewed to the right meaning that they are positively skewed. This is evidenced by positive skewness coefficients.

On the normality of the variables, we find that all the variables are leptokurtic. This is because their respectively kurtosis value are less than 3.0 as required for a normally distributed variable. Given that the kurtosis values for all variables are less than 3.0 this is a clear indication that all the variables are thin – tailed. However, this is statistically expected for any financial data.

4.3 Correlation Analysis

Correlation analysis is core in that it shows how the variables are related to each other prior to running the actual regression model. If the independent variables are correlated, then we can conclude that the coefficients of the regression model are biased and inconsistent. This is because, if the independent variables are highly correlated then the economic model suffers from the problem of multicollinearity and as such the coefficients obtained are inefficient. From the analysis, the correlation analysis is presented in the correlation matrix shown below

Table 4.2 Correlation coefficient matrix

	Total Loans	Capitalization	Deposits
Total Loans	1.0000		
Capitalization	0.4932	1.0000	
Deposits	0.3936	0.4943	1.0000

From the correlation coefficient matrix, we conclude that there are no two variables which are strongly correlated to each other. This is because the highest correlation coefficient observed is bank capitalization and bank deposits with a correlation of approximately 49.43 percent which is weak correlation. We also observe that capitalization and total loans are positively weakly correlated with a correlation coefficient of 49.32 percent. The weakest correlation reported in the analysis is between total loans and total deposits of 39.36 percent. Therefore, given that there are no variables that are strongly correlated, then we proceed to running the regression model without the need to eliminate any variable for the model for fear of multicollinearity problem.

4.4 Regression Analysis and Hypotheses Testing

Upon confirming that no variables are strongly correlated to each other, the loans advanced were taken to be the dependent variables when running our regression model. The results for the regression model are reported in table 4.3. EVIEWS software was used to estimate the model.

Table 4.3: Regression results table.

	Coefficient	Std. error	t-statistic	Probability
Constant	464118.3	75697.75	6.131203	0.0000
Capitalization	0.431862	0.156654	2.756783	0.0096
Deposits	0.771326	0.235803	3.271062	0.0026
R ² -(squared)	0.789864	Mean dependent variance		
Adjusted R-squared	0.788914	S.D. dependent variance		308221.8
S.E. of regression	32453.38	Akaike info criterion		23.71744
Log likelihood	-422.9139	Hannan-Quinn criterion		23.77885
F-statistic	1041.667	Durbin-Watson stat		1.949626
Prob (F-statistic)	0.0000			

From the OLS model results, we conclude that both the bank capitalization level and deposits positively and significantly affect the amount of total loans and advances by the commercial banks in Kenya. This is because, the probability values for the respective t – statistics are less than 5 percent error of margin.

Looking at the individual hypothesis testing we find that from the results, a unit percent increase in the bank level of capitalization, increases the total loans and advances by commercial banks Ksh. 431,862 holding other factors constant. In addition, when bank deposits increase by one unit total loans and advances by commercial banks increase by Ksh. 771,326 holding other factors constant. From the results, we conclude that the introduction of KBRR in the Kenya credit market in July 2014 has positively affected the total loans and advances by commercial banks though not significant statistically.

On the overall, we find that the explanatory power of the model stands at 78.98 percent as evidenced by the coefficient of determination (R-squared). This implies that 78.98 % of our total changes in the and advances are explained by capitalization level within the bank and level of deposits within the bank. Therefore only 21.02 percent of the total changes in total loans and advances are explained by factors outside the model. As such our model best fit the data since the coefficient of determination is more than 50 percent.

4.5 Discussion of Research Findings

The study sought to investigate the effect of Kenya Bankers Reference Rate on loans advanced by commercial banks in Kenya. From the findings, we find that the introduction of KBRR in the credit market in Kenya has positive effect on the amount of loans and advances by the commercial banks to the public. This is an indication that KBRR has achieved some intended objectives. Perhaps this could be in regard to the fact that KBRR ensures that uniformity in the base rate for all the banks thus leading to stiff competition in the lending business as the banks compete for the same customer niche. As such the banks have to work on lowering their markup so as to remain competitive. Therefore, competition will lead to revision in the lending rates downward hence more uptakes of loans by the public. The results indicate that introduction of KBRR in the market increases total loans and advances by Ksh. 14587.66.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section covers the outline of the result of this study. In addition, this chapter gives the conclusion arrived at by the study, recommendations, limitations of the study, and suggestions for areas to conduct further studies.

5.2 Summary of Findings

This study sought to investigate the effect of Kenya Bankers Reference Rate on loans advanced by commercial banks in Kenya. In doing so, the study sought to regress the total loans and advances as the dependent variable against bank deposits and bank capitalization level.

From the results, we conclude that both the bank capitalization level and bank deposits positively and considerably influence the sum of loans and advances by commercial banks to the public at 5 percent significance level. This is because the respective probability values of the respective variables are less than 5 percent significance level. However, as for the KBRR the effect on the total loans and advances is positive though not significant. As such even though the intended objective for introduction of KBBR can be said to have been realized in terms of increasing the total loans and advances among commercial banks, the effect is not statistically significant.

5.3 Conclusion

From the results, we conclude that KBRR has positively influenced lending by commercial banks in Kenya. This could be perhaps from the increased competition angle given that upon the

introduction of KBRR, all the commercial banks are subjected to the same base rate. However, testing for the level of significance of this effect, we find that the effect is not statistically significant. This therefore calls for the review of the KBRR to find out why the effect could not be significant. This could be perhaps from the fact that KBRR could not still have addressed fully the information asymmetry problem within the Kenyan credit market.

5.4 Recommendations

From the findings, it is evidently clear that the effect of KBRR on the total loans and advances by commercial banks is positive though not significant. Given that ever since its introduction is now over two year, this call for the need to review KBRR with a holistic view. This therefore calls for the concerned stakeholders starting with the Central Bank of Kenya as the regulator to relook on the KBRR mainly from its computational.

From the current mode of computation, KBRR is computed from the six months moving average of the 91 Treasury Bill Rates and two months moving average of Central Banking Rate. From economic point of view CBR is more of an indicative rate rather that being a policy rates. As such, it has been found that other market rates do not necessarily move in tandem with the movement in CBR thus raising questions on the effectiveness of the monetary policy whenever CBR is reviewed.

5.5 Limitations of the Study

In this study, the most important limitation of the study is an event analysis study since it looks at what has changed with regard to total loans and advances by commercial banks upon the introduction of KBRR. As such, the study is limited into a very short period given the KBRR is a recent phenomenon. That why the study is limited to two equal time period; - 18 months prior to introduction of KBRR and 18 month after the introduction of KBRR.