

**DETERMINANTS OF LOAN PRICING OF COMMERCIAL BANKS IN  
KENYA**

**BY**

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PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF  
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## DECLARATION

I declare that this research project is my original work and has never been submitted for the award of a degree in this or any other university for examination/academic purposes.

Signature: .....

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This research project has been submitted for the award of degree of Master of Science in finance with my approval as the university supervisor.

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## **DEDICATION**

I dedicate this research project to the Almighty God for His grace, mercy and blessings that have seen me through. To my parents, Mr. and Mrs. Maonga, for their sacrifice that gave me a sound foundation that has enabled me to go all the way. To my husband, David, and son, Jeram, who encouraged me whenever I felt like giving up.

## **ABSTRACT**

This study therefore aimed at investigating the determinants of loan pricing on commercial banks in Kenya for 2011 – 2015 period using quantitative survey design. Secondary data was collected from the audited financial reports of sampled commercial banks for the period between 2011 and 2015. By this the study aimed at examining how macroeconomic variables and bank specific characteristics influence the average lending rates on loans charged by commercial banks. The key finding of the study was that good performance in the bank specific characteristics mainly the levels of capitalization, deposits mobilization and increased bank reserves significantly contribute in lowering the cost of loans. Moreover, the macroeconomic environment within which the commercial banks operate is core in influencing the price of the loan. A rise in the cost of living as measured by inflation as well as the weakening of the local currency relative to other world hard currencies contribute to high price of loans. Therefore, the study recommends that the regulator mainly the Central Bank to be execute necessary demand management policies that aim at anchoring inflation while at the same time ensuring stability in the forex market. This will go long way in impacting the level of deposit mobilization as well as the amount of reserves at the banks' disposal for lending and ultimately affecting the price of loans.

## **LIST OF ABBREVIATIONS**

<b>APR</b>	Annual Percentage Rate
<b>CBR</b>	Central Bank Rate
<b>GDP</b>	Gross Domestic Product
<b>KBRR</b>	Kenya Banker's Reference Rate
<b>ROA</b>	Return on Assets
<b>TCC</b>	Total Cost of Credit

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Commercial banks contribute immensely in the overall performance of an economy in the financial intermediation. Commercial banks have been at the centre of driving the economy as evidenced through the tremendous growth in the private sector over time. The importance of banking industry can also be evidenced by the industry's balance sheet in relation to the entire economy. In 2014 the industry's balance sheet stood at approximately Kshs. 3.2 trillion which is over and above the 2014/2015 financial year balance sheet of approximately 1.6 trillion. This presents the fact that the banking industry balance sheet resources more than twice the total annual government budget hence the industry's contribution to economic growth cannot be underestimated. For 2013/2014 financial year, the balance sheet growth for the entire banking industry recorded a growth of 15 percent with the total net loans and advances coming second after the total assets.

Overtime, the total loans and advances by commercial banks to the private sector has been on upward trend though at some points growing marginally. However, the above mentioned growth is not without challenges. In pursuit of their roles, commercial banks are not free from challenges but rather are exposed to risks. According to (Olusanya, et al 2012), commercial banks help in trading off the cost of exchanging financial funds by addressing the problem of information asymmetry and diversifying risks within the economy. This leads to distribution of financial resources efficiently within the economy.

Therefore, the banking system is core in financing consumption and investment expenditure and hence contributing towards financing capital accumulation and technological innovations, aimed at boosting productivity growth and more dynamic and sustainable rates of economic growth. Lending which may be on short, medium or long-term basis is one of the services that commercial banks undertake.

In performing their role, banks have the potential, scope and can move financial resources and allocate them to investments that are productive in the economy. By bridging the gap between credit surplus and credit deficit commercial banks are relied upon to give out loans and advances to customers however, they have to look at profitability, liquidity and solvency as the principle guide for their day to day operations. The decision to lend however, is influenced by factors such as the prevailing macroeconomic factors as well and the bank specific factors which include interest rate, inflation, deposits, level of domestic and foreign investment, liquidity, prestige just to mention a few.

According to Goldfeld and Chandler (1980), industries were unable to meet up their sudden financial needs and had to turn to commercial banks for loans. The lending exercise increased the pace of commercial and production activities and could be traced to the period of industrial revolution that brought forth the need for large capital outlays for projects.

### **1.1.1 Loan Pricing**

In the recent past year, commercial banks have had a hard time explaining to consumers why they must charge exorbitant rates for loans. In this case the rates are what we call the loan price. Their argument that the rates partly reflect the high level

risk in Kenya's lending markets has been neutralised by the super profits they announce every year regardless of the prevailing market realities.

Last year in 2015, for instance, commercial banks posted a total profit before tax of Sh145 billion, 2.8 per cent above the previous year's bearing in mind that the interest income on loans is the largest contributor to the total income in the entire industry; even as a record 20 listed companies issued profit warnings — meaning their profits fell by more than 25 per cent (Central Bank of Kenya).

Due to the outcry from both the government and the public on the price of loans, this saw the formation of a task force under the office of the deputy president that proposed the introduction of the Kenya Banks Reference Rate (KBRR) which came into effect on July 2014. The perception here is that high base rates are the precursor to the high lending rates. Earlier on, the adoption of the Total Cost of Credit (TCC) and the Annual Percentage Rate (APR) and now recently the passing of the bill to cap interest rates on loans at four percent above the indicative central bank rate (CBR) that also pegs the minimum interest rate payable on deposits held in interest earning account at 70 per cent of the CBR. These are all concerted efforts by the government to lower the lending rates in the economy but they would certainly have implications on the interest margin and profitability of the commercial banks.

However, the high loan price, may not necessarily arise from the high base rates or non-disclosure of the cost of credit by the banks. Commercial banks face high lending risks including inadequate securities against loans, inefficient Judiciary to deal with loan security matters, information asymmetry between the borrower and the lender and generally high loan non – performing loans. These factors lead high risks which are then passed on to the borrowers.

For policy purposes, thus, it is necessary to understand which factors are important in influencing banks' loan pricing decisions. This is what informs our research gap given that the relevant authorities lowered the lending rate (loan price) without a holistic address to its determinants.

### **1.1.2 Determinants of Loan Pricing**

In analyzing the determinants of loan pricing among commercial banks it's clear that a number of factors enter into relation of the pricing of the loan. To start with the size of the banks is core in determining how the bank will price its loans and subsequently impacting on lending. The bank size is generally measured by the net asset of the bank. The bigger the bank, the more the financial resources at its disposal for lending and as such it can afford to lower the cost of credit in order to lend more. Secondly, the level of mobilization of deposits by the bank is crucial in determining the pricing of loans by the bank given that commercial banks rely majorly on the deposits to lend to the borrowers through credit creation process. As such the more the bank is capable of mobilizing bank deposits, the more financial resources it has for lending leading to improved performance of the bank. It's expected that the relationship between demand deposits and banks is positive since the more deposits, the more financial resource available for lending hence possibility of increased bank through growth in the loan book.

It also noteworthy that the cost of credit in the market as captured by the average lending rates in the market is a major factor in analysing the effects of loan pricing determinants on banks' as far as bank's lending business is concerned. From the law of demand, assuming that demand for credit follows the law of demand, lending rate is negatively related to uptake of loans and hence reduced banks in the long run. However, it's noteworthy that this relationship is not guaranteed since to some

borrowers what is of essence to them is the entry to credit and not cost of credit. Therefore, as long as the returns on investment can cover the cost of credit and the borrower is left with some profit margin, then the cost of credit is not of worry to the borrower but rather the access to credit.

In addition, the amount of cash reserves at the bank disposal in addition to amounts of deposits are core in determining how the pricing determinants affects banks probability. The more the cash reserves, the more lending resources hence the increased possibilities of increased bank assuming that the loans advanced are performing. The cash reserves by the bank range from cash held in both the local and foreign institutions and the cash balances due from the central bank. Therefore, a positive relationship between the levels of cash reserves at the bank and bank's profitability.

Lastly, the institutional framework within which the commercial banks operate is likely to impact on how the loan pricing determinants affects the of commercial banks' lending business. The introduction of the credit reference bureaus is core ion the bank lending via the determination of the interest rate to be charged to the borrower given the borrower's credit rating. The aspect of credit reference bureaus in Kenya's banking industry was introduced in the year 2008 by the central bank of Kenya with the aim of determining the borrower's credit history prior to advancing the credit. As such the aspect in crucial in pricing the loan in that a borrower with a poor credit rating is charged a higher interest rate as opposed to the borrower with a good credit rating. Therefore, it crucial to introduce the credit reference bureaus in the study model as a dummy variable to find out how the introduction of the credit reference bureaus have affected the banking industry in Kenya.

Against this backdrop, the determinants of loan pricing via these variables on the lending business of commercial banks in the Kenyan context is what this study seeks to investigate.

### **1.1.3 Loan Pricing and Its Determinants**

#### **1.1.3.1 Bank Capitalization**

This refers to the amount of capital within the bank. It will be measured by the sum of the core capital within the bank. Bank capitalization is therefore an essential explanatory variable in determining the ability of the business entity in meeting long term liabilities. Bank capitalization is measurable quantitatively. It is mainly measured by the addition of the core capital and supplementary capital which yields to the level of capitalization of the bank.

#### **1.1.3.2 Demand Deposits**

These are the deposits by the current account holders in the banking industry. This variable is core in determining the financial performance of the bank in that the banks heavily depend in these deposits to create credit via lending. This is the so called credit creation by banks via credit creation process. As such the more the bank is capable of mobilizing bank deposits, the more financial resources it has for lending leading to improved performance of the bank. It's expected that the relationship between demand deposits and banks is positive since the more deposits, the more financial resource available for lending hence possibility of increased bank through growth in the loan book. Demand deposits are quantitatively measured by the total deposits by the customers or the account holders in the bank.

### **1.1.3.3 Cash Reserves**

This is the cash reserve held commercial banks in addition to the deposits are important financial resources available for lending to the borrowers. The more the cash reserves, the more lending resources hence the increased possibilities of increased bank assuming that the loans advanced are performing. The cash reserves by the bank range from cash held in both the local and foreign institutions and the cash balances due from the central bank. It is measured by the total amount of reserves that the commercial bank holds at the Central bank as per the requirement of the central bank.

### **1.1.3.4 Credit Reference Bureaus**

The introduction of the credit reference bureaus is core ion the bank lending via the determination of the interest rate to be charged to the borrower given the borrower's credit rating. The aspect of credit reference bureaus in Kenya's banking industry was introduced in the year 2008 by the central bank of Kenya with the aim of determining the borrower's credit history prior to advancing the credit. As such the aspect in crucial in pricing the loan in that a borrower with a poor credit rating is charged a higher interest rate as opposed to the borrower with a good credit rating. Therefore, it crucial to introduce the credit reference bureaus in the study model as a dummy variable to find out how the introduction of the credit reference bureaus have affected the banking industry in Kenya. This is a dummy variable hence it is not quantifiable. The dummy in this study will therefore take value 0 for the period prior to introduction of CRBs in the market and take value 1 for the period after the introduction of CRBs in the credit market.



#### **1.1.3.5 Foreign Exchange**

This is the price of one currency in relation to another. It is also a macroeconomic variable capturing the forex market dynamics. Given that the banks are involved in buying and selling foreign exchange, then they hold their portfolios form of local and foreign currencies. A depreciation bias on Kenya shilling would imply that banks hold more of foreign currency and less of the local currency hence less resource for lending to the public with the opposite being true. Therefore, the expected sign here would be either positive or negative.

#### **1.1.3.6 KBRR Dummy**

This is the dummy variable capturing the effect of KBRR on the total loans and advances in model 1 and the effects of KBRR on asset quality in model 2. This variable is a dummy meaning that it's a binary variable as it takes two values only; - that is 0 and 1. The variable takes value 0 for the period before the implementation of KBRR in the market in July 2014. For the period after the July 2014, the variable takes value 1 which is the period when the KBRR has been operational in the market.

#### **1.1.4 Banking Sector in Kenya**

As at end of December, 2015, the banking sector in Kenya comprised of 42 commercial banks, 1 mortgage finance company, 8 deposit taking microfinance institutions, 7 representative offices of foreign banks, 108 foreign exchange bureaus and 2 credit reference bureaus (Central Bank of Kenya limited, 2015). Banking in Kenya is highly concentrated with tier one banks controlling a larger market share. A review of the banking industry's balance sheet reveals that as at December, 2015, gross loans and advances by commercial banks increased from Ksh. 1.94 trillion in December 2014 to Ksh. 2.17 trillion in December 2015, which translated to a growth

of 11.75 per cent. This growth of approximately Ksh. 23 billion, was a marginal growth occasioned by increased demand for credit by household, trade, real estate and manufacturing sectors.

The expansion in the total credit to the private sector has overtime attracted government's attention to address the situation if a bolster in the private sector credit is to be realized. In the recent past, there has been an attempt by the government to lower the lending rates in pursuit of increasing the private sector credit. This has seen the introduction of the Total Cost of Credit (TCC) and the Annual Percentage Rate (APR) through the central bank's prudential guidelines operational as from July 2014. In addition, the introduction of the Kenya Banks Reference Rate (KBRR); - An average of a two months moving average CBR and six months moving average 91-Treasury Bill Rate, is a move directed towards ensuring uniform base rates for bank loan pricing for all banks with an ultimate goal of driving the lending rates below the double digit figure. Thirdly, passing of the bill to cap interest rates on loans at four percent above the indicative central bank rate (CBR) that also pegs the minimum interest rate payable on deposits held in interest earning account at 70 per cent of the CBR.

The above highlighted three current developments in the Kenya's financial market is an evidence of government's concerted effort to lower the lending rate hence a justification of how the problem of high lending interest rates is pronounced in Kenya. In addition, the introduction of the KBRR was meant to change the loan pricing determinants by introducing a common base for all commercial banks upon which the lending rates are determined thus ensuring that all banks base their lending rates on the same base hence fairness but did not work. It's therefore clear that the pricing

determinants for loans have been at the center stage of discussion. On the same note are the ever growing non – performing loans in the financial sector mainly in the banking industry’s balance sheet arising from the loan defaults which is mainly attributed to increased cost of credit. This is what warrants us to carry out a study to explore how the loan pricing affects the lending business among commercial banks in Kenya.

## **1.2 Research Problem**

The operating environment for the Kenya’s banking industry has of late become dynamic hence the need for banks to be both inward as well as outward looking in their business strategies. Challenges in the banking industry in Kenya dates back to 1980s following the collapse of a number of commercial banks as well as some being bailed out by the central bank.

In addition, the global financial crisis spill over effects hit the banking sector in Kenya as from year 2010 with a number of banks posting losses especially the small and medium size banks which account for approximately 57 percent of the total industry. The global financial crisis saw the establishment of Basel III as an international regulatory framework for banks with the aim being the supervision and risk management within the banking industry. However, Kenya is not a signatory of Basel III accord since we are still implementing Basel II accord.

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.

The recent debate on lowering the lending rate has spark lot of reactions from both the lenders and the borrowers at large. On one side the borrowers perceive the total cost of credit as being the lending rate thus leading to harsh judgment of banks exhorting the public. However, the truth is that lending rates are different from the total cost of credit. The lending rate only captures the interest rate component of the total cost of credit. It is therefore the opportunity cost of lending out money to a given borrower. On the other hand, the total cost of credit encompasses the lending rates plus all other cost associated with the borrowing such as the third party cost; - legal fees, bank charges, stamp duty costs, valuation fees among others. This misunderstanding has put the whole debate on commercial bank's lending behaviour.

For a long time, ever since the inception of the CBR, it has been viewed that the CBR is the base rate for the determination of the lending rate. However, the reality is that CBR is only a policy variable which signals the direction to which the economy is moving in relation to the CBK's inflation rate target and the economy's production potentials. Therefore, the CBR may change simply in attempt to anchor inflation without necessarily having any reference to the economy's potentials.

According to Keynesian theory of money, a rise in interest rates leads to high cost of capital. In addition, the loan pricing theory points out that lending rate will definitely influence bank's lending given the adverse selection and the moral hazard problems associated with the borrowing.

Some of the theoretical theories in finance have skewed analysis of the lending behaviour among the banks. For instance, the lending channel theory of banking focuses on the upshot of reserve requirement with no attention paid on the bank equity. According to Friedman (1991) traditionally, capital is interpreted as an

“unrelated” balance sheet item. Moreover, with the wide literature linking wealth creation and risk aversion in banks, scarce interpretation exists between banks’ risk attitude in lending and the level of bank capitalization hence the culmination of the Basel Capital Accord.

On the bank’s size and the capitalization, several theories have explained their effects on banks’ lending behaviour. The main theories here are the bank concentration theory and the bank capital channel theory. Recapitalization/mergers and acquisitions drive the economies of scale of the bank as the pro concentration theory posits. so that increased concentration can be used to achieve improvements and efficiency. On the other hand, the Bank Capital Channel is a direct system which is based on market information asymmetry mainly touching on the problems of adverse selection affect banks fund raising. The prudential regulation demands that capital has to be at least a minimum percentage of loans and banks have to comply thus they will reduce lending. Hence Bank capitalization will definitely influence the lending supply by the commercial banks.

Therefore, as posited by different theories, bank’s lending behaviour is a culmination of a number of factors both external and internal to the bank. However, each theory addresses effects of a certain identical variables on lending behaviour by banks. For instance, bank lending channel theory only looks at the effects of reserve requirements while pro concentration theory focuses on the effects of bank capitalization on the bank’s lending behaviour. In addition, different studies posit interesting results. For instance, Kashyap et al. (1993) finds that just like Keynesian theory posits monetary contraction reduces bank lending, however, it increases

commercial paper volume suggesting that monetary tightening results into an inward shift in loan supply, rather than an inward shift in loan demand.

The study seeks to find out the effects of loan pricing determinants on the lending business among commercial banks in Kenya.

### **1.3 Objectives of the study**

#### **1.3.1 Main Objective**

The main objective of this study is to determine the effect of loan pricing determinants on the lending business among commercial banks on Kenya.

#### **1.3.2 Specific Objective**

- i. To determine the effect of KBRR and credit reference bureau on loan pricing
- ii. To determine the effect of bank specific characteristics; - capitalization, total deposits and cash reserves on loan pricing.
- iii. To determine the effect of economic factors; - inflation and exchange rates on loan pricing

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

The policy makers will find this study significant and will inform further research areas and information asymmetry in a number of ways. First, it's significant to the policy makers mainly the Central Bank and other market regulators such as the treasury. The recent past has seen the government's attempt to address the problem of high lending rates in the economy. This is evidenced by the central bank's prudential guidelines requiring all the commercial banks to adopt TCC/APR for transparency in their lending. Secondly is the introduction of the KBRR in July 2014 and thirdly by passing the law of capping the interest rates 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 which might significantly influence the bank's decision to lend. The findings of this study may therefore be helpful to policy makers in determining the effects of such factors on the banks' lending behaviour thus enabling them to formulate inclusive policies.

Secondly, the study makes a contribution to existing literature as follows; currently, majority of scholarly works in this field have focused on the interest rates spread. Since interest rates spread is just the range between the lending rates and the deposit rates there has been a lot of debate on its accuracy as a measure of interest rate changes in the economy. Studies in Kenyan context by Ngugi (2001), Moguche (2013), Folawewo & Tennant (2008), Were & Wambua (2013) all focus on the determinants of interest rates spread in Kenya.

Lastly, is the significance to both the borrowers and lenders of credit hence lowering market information asymmetry in the credit market. The results of the study will be beneficial in bridging the information gap on what other factors determine the existing banks' lending rates. This will reduce the level of market information asymmetry whereby borrowers perceive banks as exploiting while the banks will benefit from knowing the factors contributing to credit market risks hence pricing their loans fairly.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Literature review covers theoretical framework, conceptual framework and empirical literature on determinants of lending behaviour among commercial banks. It concludes with an overview of the literature highlighting the research gap that the study seeks to fill.

#### **2.2 Theoretical Literature Review**

There exists vast literature on the theoretical literature with regard to banks' lending behaviour. The fundamental role of a bank is financial intermediation by way of mobilizing savings from depositors and lending them to borrowers. In performing this function, banks are regulated often by the environment within which they operate. Banks cannot charge higher interest rates if faced with increased failure in credit risk as Stiglitz and Weiss (1981) posits. This therefore prompts any financial institution to request for collateral from the borrower to minimise losses that might occur from loan defaults.

Within finance literature, there exists several theories with regard to bank's behaviour in lending. In this study, the theoretical literature review is summarised as follows:

##### **2.2.1 Loan Pricing Theory**

The loan pricing theory indicates that high lending rates are always set by banks. According to Stiglitz and Weiss (1981), commercial bank should consider the moral hazards and adverse selection problems should be considered in the credit market when maximising interest income given the high credit market information asymmetry. If banks set high lending rates, this triggers adverse selection problem in



the market as borrowers who are risky accept high rates willingly. Upon receiving the loans and advances, borrowers may develop moral hazard behaviour since they are likely to take projects or investments which are highly risky (Chodecal, 2004). From this reasoning, it is usual that in some cases, we may not find that the interest rate set by the bank as commensurate with the risk of the borrowers as Stiglitz and Weiss state. Under this theory, the main parameters are the cost of cost both the direct and the indirect cost of bank's activity, the risk involved in lending and the term of the loan. This theory is therefore relevant to this study in that by trying to adjust the interest rates, commercial banks affect the pricing determinants of the loans they lend to the public thus affecting the total cost of the loanable funds. This in turn affects the loan uptake by the borrowers which eventually affect the lending business of the banks.

### **2.2.2 Credit Market Theory**

This theory argues that the terms of credits clear the credit market. Given that the loan securities remain unchanged, the only price system that can clear the credit market is the interest rate. With the rising demand for credit at a given loan and advances supply by the banks, the interest rate can only rise if the credit market is clear, and vice versa. It is therefore believed that the higher the interest premium of the borrower, the higher the default risk (Ewert et al, 2000) to compensate against any possible losses. The increase in demand for credit notably arising from low interest rates as a result may cause depreciation of currency. Central bank therefore must review the interest rate to contain the high demand for loans thus discouraging borrowing. As a result, commercial banks will respond by increasing interest rates lending to low demand for loans in the long run. Within the credit market theory, the main two parameters are the bank income and loan's interest rate. Till the optimal

level of interest rate, it is increase function. Higher interest rate means higher income of banks. But interest rate means also risk of credit contract. Therefore, higher interest rate than optimal interest rate is connected with some losses and function change to decrease. Higher interest rate than optimal means less bank income then. The theory is therefore relevant to this study in that it links the loan's interest rate (which is on the loan pricing determinants side) with the bank's level of income that comes from the lending activity. As such, the theory provides a ground as to how loan pricing determinants (as measured partly by loan's interest rate) affects the bank's lending a goal which this study seeks to achieve.

### **2.3 Empirical Review**

There is vast empirical literature on the loan pricing determinants and of lending business among the banks. Olokoyo (2011) investigated loan pricing determinants and commercial banks' lending behaviour in Nigeria for the period 1990 – 2005 using loans, deposits, investment portfolio, lending rates, cash reserve and liquidity ratio. The study found out that loans, deposits, investment portfolio, interest rate, minimum cash requirement ratio, liquidity ratio, foreign exchange and gross domestic product portray a long run relationship among themselves. Lending rates were found to impact on banks' lending performance though not pronounced. This affirms the finding by Karim et al (2011) who investigates the impacts of interest rates on the banks' lending in Malaysian context and contend that interest rates negatively affects lending among the banks while steering for macroeconomic variables such as GDP and inflation.

Regarding effects of monetary policies; liquidity requirement and cash requirement ratio, Olokoyo (2011) reports a positive relationship between these variable and banks' loan pricing determinants since banks should always ensure compliance with

these policies. The findings are however a sharp contrast to Ehrmann et al. (2003) who asserts that a contractionary monetary policy will definitely cause a severe negative impact on banks' lending among the bank undercapitalized banks. Previous studies arriving at the same conclusion include Jonas, Emmanuel, Kofi (2013), Christian and Pascal (2012), Cargill and Meyer (2006) and Montoro and Moreno (2011). These findings are in sharp contrasts to the assertions by Olusanya et.al (2012) who posit that increase in the reserve requirement has positive impact on the banks total loans and advances. However, Wilcox (2012) who maintains that reserve requirement has small and statistically insignificant impact on the banks loans and advances and hence affecting bank's profitability. In addition, Friedman and Schwartz (1963) that a rise in the commercial banks reserve requirement is a source of the banks' credit creation.

Karim, Saini and Karim (2011) investigated the effects of monetary policy channel (pricing determinants channel) on the banks' lending for 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.

Jonas, Emmanuel, Kofi (2013) studied the loan pricing and lending behaviour among the Ghanaian banks. Using the GMM, they found that bank size and capital structure have a statistical and significant impact banks' lending behaviour positively by influencing pricing of loans. The findings concur to Ngomsi and Djiogap (2012) who studied the determinants of bank long-term lending behaviour in the Central African Economic and Monetary Community among six countries and Stein (2000) who asserts that there is a difference in the comparative advantages in lending between

small and large banks. The small banks produce soft while large banks produce hard information. In addition, this study unveiled a positive significant effect of competition in the banking industry on bank lending behaviour.

Regarding impact of economic growth rate on banks' lending behaviour, Jonas, Emmanuel, Kofi (2013) posit that the macroeconomic environment is key in determining lending decision of the bank. During economic boom, demand for loan rises given the increased demand for expansion as well as investment expenditure whereas the demand for credit plummets in periods of economic recession. Thus a pro-cyclical relationship between economic growth and bank lending comes about.

The findings confirm earlier findings by Ngomsi and Djiogap (2012) and Vazakidis and Adamopoulos (2009). Vazakidis and Adamopoulos (2009) conclude that economic growth positively shocks credit market development in Italian market. Similarly, is the central bank's prime rate serves as an indicator to the movement in key economic variables like inflation which in turn affect interest rates. Through the transmission mechanism, an upward review of the central bank rate negatively affects banks' lending behaviour. This affirms an earlier study by Dell'Ariccia and Marquez (2006) found out that credit expansions of banks are highly influenced by business cycles which translate to growth in GDP which result to growth in bank credit. This is because in the period of economic boom, banks tend to lend more given that the ability of the borrowers to repay the loan is high during this time. On the other hand, the rate of non-performing loans and source of credit decreases during periods of economic recession which lead to rationing out even good projects hence the contraction in the lending by commercial banks.

Exchange rate fluctuations, lead to currency depreciation and result in assets being valued less against their liabilities. Jonas, Emmanuel, Kofi (2013) reports a significant negative relationship between exchange rate and total loans advanced by commercial banks. This affirms findings of an early by Lindgren et al. (1996) who conclude that exchange rate fluctuation negatively affects the performance of banks' borrowers leading to low bank profitability mainly among the developing economies which are more exposed to foreign trade shocks. According to Lindgren et al. (1996), economic and financial growth in a country weaken due to excessive variations in the exchange rate. This is seen to be the most significant cause of worldwide banking crises. In a developing and open economy like Ghana, one expects that exchange rate depreciation will negatively affect bank lending behaviour. However, Olusanya *et. al* (2012) totally contradicts these findings for the Nigerian financial market by asserting that foreign exchange rates positively impacts on the commercial banks' lending volumes.

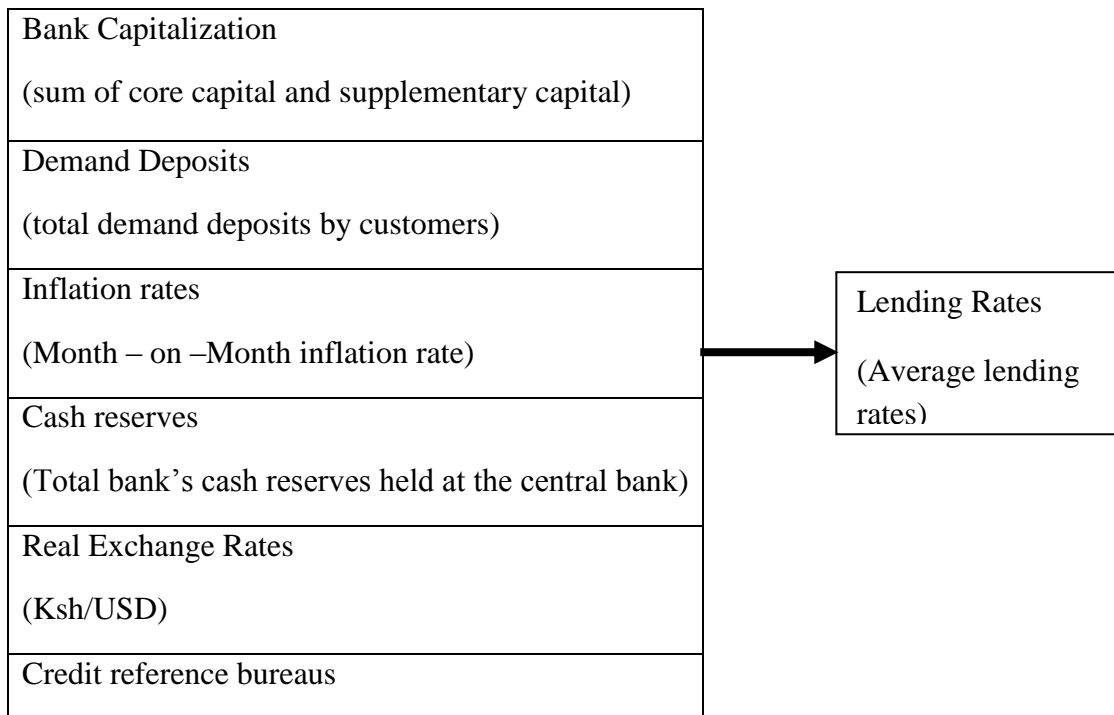
Ngomsi and Djiogap (2012) found out that ownership of a bank is core in determining the total loan and advances extended by a bank. The study revealed that foreign banks tend to exhibit higher long term loan ratios compared to the state owned.

Malede (2014) investigated on the loan pricing and 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 a relationship of significance between lending and size, credit risk, gross domestic product and liquidity ratios among banks. On contrary, the study found out that deposits, cash reserves and lending rates did not affect Ethiopian banks' lending. The study concludes that Ethiopian banks emphasise on credit risks and liquidity ratios as they weaken banks' loan disbursements leading to banks insolvency.

Theodossiou (2011) argues that the banks size measured by total assets and bank capitalization are the only determinants commercial banks' business and long term lending through loan pricing determinants. These confirms Bashir (2003) who posits 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 assert that a big balance sheet allows managers to invest more in different geographical and business segments to address the issues 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 than those of larger banks. On the banks deposits, Olusanya *et. al* (2012) found that deposits have a positive impact on the commercial banks' lending volumes by enabling banks to lower the loan prices given the large volumes of loanable fund at their disposal. This is confirmed by Mc Cathy *et al.* (2010) who 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 Sebatian (2009) who found out that demand deposits liabilities had the most significant positive effect on the banks' credit allocations in the Nigerian credit market.

## **2.4 Conceptual Framework**

Independent variables are variables that are believed to influence the dependent variable in any regression model. They are also referred to as explanatory variables as they explain the dependent variable. It's therefore assumed that a change in the dependent variable is attributed to changes in the independent variables. With regard to the effects of the loan pricing determinants on bank performance the following independent variables enter the empirical model for the study.



**Figure 2.1 Conceptual framework**

## 2.5 Summary

The review of both theoretical and empirical literature cites that most of the studies on the banks’ lending behaviour have been carried out in the developed financial markets. However, there are a few studies done in the less developed financial markets mainly Nigeria and Ghana. Studies on the determinants of banks’ lending behaviour in the Kenyan financial market are lacking with the existing ones majorly addressing the determinants of interest rate spreads among the commercial banks. However, even though these studies exist their address of the interest rate spread is informed by the fact that interest rate spread is a major factor underpinning the high cost of credit in Kenya. However, this can be argued as exaggeration since interest rate spread is the range between lending rates and deposit rates hence does not capture the true costs of funds (loans). This therefore presents a gap in the body of knowledge that this study seeks to fill.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the research methodology adopted in the study. It covers research design, research population, data collection and data analysis. Therefore, the chapter highlights the methodology that is to be followed during the study process that will help in achieving the study objectives.

#### **3.2 Research Design**

This study adopts an inferential research design in attempts to establish the effects of pricing on of lending business among commercial banks in Kenya. Quantitative research design will be applied in quantifying relationships between dependent variable and the independent variables and arrive at conclusions. In quantitative research the aim is to determine the relationship between one thing (an independent variable) and another (a dependent or outcome variable) in a population. This study will therefore apply quantitative research design in investigating the effect of the loan pricing determinants on the lending business among commercial banks in Kenya.

#### **3.3 Population**

The population of this study will be all the 42 commercial banks in Kenya licensed as at the end of year 2015. The study will cover the 2011 – 2015 period covering all the 42 commercial banks. Therefore, since the study will cover all the commercial banks licenced within the study period then there is no need for sampling.



### **3.4 Data Collection**

The study will utilise secondary data from the 43 commercial banks in Kenya for the period 2010 – 2015. The data will be obtained from the audited accounts statement for individual banks for the period under the review obtained from either Kenya Bankers Association, Central Bank of Kenya or Capital Market Authority for 2010 – 2015 period. The audited account statements will be able to provide information on loans advanced and interest income that comes from it, total assets and capital which affect the overall profit after tax for commercial banks.

### **3.5 Data Analysis**

Under the data analysis we capture the empirical model (3.5.1). The study will involve panel data analysis given that the study looks at the 43 commercial banks over time period thus leading to cross -section and the time series aspect of the data. Data analysis will therefore entail the estimation of the empirical model defined in 3.5.1 for both the fixed effects and the random effects models. In addition, the analysis will entail the diagnostic test prior to estimating the empirical model. These will include: unit root or stationarity test, test of heteroskedasticity and normality test. In addition, data analysis will entail post estimation test for serial correlation on the residuals of the estimated model to determine whether the model estimates are BLUE (best linear unbiased estimates). Lastly Hausman test will be conducted to determine the best model between the fixed effects and the random effects model.

### 3.5.1 Statistical Model

We define our empirical models as:

$$\begin{aligned} \text{LogLendingRate}_t = & \alpha + \beta_1 \text{LogCapitalization}_t + \beta_2 \text{ExchangeRate}_t + \beta_3 \text{LogRr}_t + \beta_4 \text{LogDD}_t + \beta_5 \text{LogInflation}_t \\ & + \beta_6 \text{KBRRDummy}_t + \beta_7 \text{CRBDummy}_t + \varepsilon_{it} \dots\dots\dots (1) \end{aligned}$$

Where:

$\alpha$  = intercept/constant term

*Lending rate* = is the average weighted rate at which the banks advance loans to the customers.

*Capitalization* = is the bank's capitalization

*DD*= is the Total deposits mobilized by banks.

*CRB Dummy* = is the dummy variable for the credit reference bureaus.

*Rr* = is the cash reserve.

*Exchange Rate* = is the real exchange rate between Kenya shilling and the US dollar.

$\varepsilon$  = is the error term of the stochastic model

*Betas* ( $\beta$ ) = are the parameters of the models. In our case they are elasticities since our model is in natural logarithms.

In addition, we note that the study will use monthly data for 5 years covering 2010 – 2014 period.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 Introduction**

This chapter deals with the analysis of data, results and discussion of the results. 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. In addition, the chapter covers correlation analysis among the variables as measured by the correlation coefficient matrix. Further the chapter covers the regression analysis and hypothesis testing. Finally, discussion of research findings is also covered in this chapter.

#### **4.2 Descriptive Statistics**

The descriptive statistics of all the variables of the model are reported in table 4.1 below. It mainly consists of the mean, minimum and the maximum values of the respective variables, the mean values. The measures of dispersion of the model variables are measured by variance and standard deviation values. For the nature of distribution of the variables, the skewness statistic and kurtosis values show how the variables are distributed.

**Table 4.1: Descriptive Statistics**

	Capitalization	Deposits	Exchange Rate	Inflation	Lending	Reserves
Mean	1758007	524008.2	85.36384	8.037500	16.57600	93171.43
Median	1696208	495685.5	85.56355	6.485000	16.87500	85484.00
Maximum	2522742	707513.0	99.83200	19.72000	20.34000	158111.0
Minimum	1122747	350857.0	75.88600	3.180000	13.85000	56677.00
Std. Dev.	386248.1	96079.58	4.489346	4.806449	2.129592	23625.09
Skewness	0.272472	0.153211	0.710138	1.115249	0.332142	0.696175
Kurtosis	2.054658	2.130920	5.081788	3.008986	1.965018	2.983123
Jarque-Bera	2.976586	2.122984	15.87757	12.43800	3.781152	4.847312
Probability	0.225758	0.345939	0.000357	0.001991	0.150985	0.088597
Observations	60	60	60	60	60	60

From table 4.1 is evidently clear that the total number of observations are 60 observations given that we have 2011 – 2015 period and the data frequency is monthly. Looking at the mean value, capitalization level has the highest mean value of Sh. 1,758,007 million followed by deposits at Sh. 524008.2 million. Exchange rate between the US dollar and Kenya shilling for the period averaged at 85.36 mark. Reserves on the other hand averaged at sh. 93,171.43 million for the 2010 – 2014 period.

On the measures of dispersion as measured by standard deviation bank capitalization has the highest dispersion from its mean value standing at 386248.1 with average lending rates having the least deviation from its mean value with a standard deviation of 2.129592.

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, inflation rates and reserves are normally distributed. This is because their respective kurtosis value are close to 3.01 with inflation have a kurtosis value of 3.0 and that of reserves being 2.98. All the other variables are non – normally distributed given that their respective kurtosis values deviate away from 3.0 However, this is statistically expected for the 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 highly correlated, then 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 in table 4.2

**Table 4.2: Correlation Matrix**

	Capitalization	Deposits	Exchange Rate	Inflation	Lending	Reserves
Capitalization	1.0000					
Deposits	0.4836	1.0000				
Exchange Rate	0.5281	0.4754	1.0000			
Inflation	-0.0756	-0.0622	0.5112	1.0000		
Lending	0.3511	0.2610	0.1036	0.2232	1.0000	
Reserves	0.3144	0.4848	0.4130	-0.1875	0.2699	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 between exchange rate and capitalization levels with a correlation of approximately 52.81 percent which is moderate correlation. We also observe that inflation rate is negatively correlated to bank capitalization level, bank deposits and bank reserves. As such since 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.

#### 4.4 Regression Analysis and Hypotheses Testing

Upon confirming that no variables are strongly correlated to each other, the regression model was run with the lending rate being the dependent variable. The result 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	Prob.
Log capitalization	-2.2303	0.1692	-13.1797	0.0000
Log deposits	-1.7779	0.2105	-8.4478	0.0000
Log exchange rate	0.9132	0.2233	4.0890	0.0001
Log inflation	0.0813	0.0154	5.2810	0.0000
Log reserves	-0.1688	0.0698	-2.4176	0.0191
CRB_Dummy	-0.0870	0.0109	-8.0059	0.0000
KBRR_Dummy	-0.0540	0.0117	-4.5954	0.0000
R-squared	0.858395	Mean dependent variance		1.216002
Adjusted R-squared	0.842364	S.D. dependent variance		0.055267
S.E. of regression	0.021943	Akaike info criterion		- 4.691482
Sum squared residual	0.025519	Schwarz criterion		-4.447142
Log likelihood	147.7445	Hannan-Quinn criterion		-4.595907
Durbin-Watson stat	1.95202			

In running the regression model, we log the variables by obtaining the logarithm to base 10 of all the variables. This reduces the disparity among the variables as well as ensuring uniformity in the variables prior to running the model.

From the results, we conclude that all the variables significantly influence the loan pricing as measured by the average lending rate at 5 percent significance level. This is because the respective probability values of the respective variables are less than 5 percent significance level.

Looking at the individual hypothesis testing we find that from the results, a one percent increase in the bank capital, reduces the lending rate by 2.23 percent holding other factors constant. Similarly, when deposits increase by one percent holding other factors constant, the price of loan (lending rates) decrease by 1.78 percent. As for the reserves, a percent increase in reserves lowers lending rate by 0.17 percent holding other factors constant. However, for inflation and exchange rate their effects on lending rate is different. When inflation increase by one percent, lending rates will rise by 0.08 percent holding other factors constant. As for the exchange rate, when the exchange rate between Kenya shilling and the US dollar increases by one percent, lending rate will rise by 0.91 percent *ceteris paribus*. Looking at the CRB and KBRR dummies, we find that they both affect the lending rate negatively meaning that their introduction in the credit market have contributed in lowering the price of loans.

On the overall, we find that the explanatory power of the model stands at 85.84 percent as evidenced by the coefficient of determination (R-squared). This implies that 85.84 percent of the total changes in the lending rates is explained by bank capitalization level, bank deposits, exchange rates, inflation rates, bank reserves, Credit Reference Bureau dummy and KBRR dummy. Therefore, only 14.16 percent

of the total changes in the lending rates is explained by factor 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**

From the findings of the study, it is evident that banks capitalization, deposits and reserve help in lowering the lending rate. This is because with high levels of capitalization, deposits and reserves, commercial banks have more financial resources for lending and as such given the competition in the industry as they compete for the same customer niche banks can afford to lower lending rates slightly in order to lend more and avoid holding idle resources which has a cost into it. The findings are consistent with the findings by Olusanya *et. al* (2012) who found that deposits have a positive impacts on the commercial banks' lending volumes by enabling banks to lower the loan prices given the large volumes of loanable fund at their disposal. This was also confirmed by Mc Cathy *et al.* (2010) who 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.

On the macroeconomic front, inflation rate and exchange rate negatively impact on the cost of loans by increasing the lending rates. A rise in the inflation rate means that the value of money loan goes down overtime and as such banks have to charge a premium to cover against such loss hence the negative relationship between the two. In addition, the rise in the exchange rate implying the depreciation in the local currency leads to rise in the lending rate. This is because the banks have to factor in the exchange rate volatility risks arising from the depreciation in the local currency. This would also apply for the foreign currency denominated loans.



The new market intervention in terms of KBRR and introduction of Credit Reference Bureau have helped in lowering the lending rates. This could be perhaps by lowering the level of information asymmetry between the borrowers and lenders by giving more disclosure thus reducing moral hazard problem and adverse selection problem in the credit market.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter covers summary of the findings of the study. In addition, the chapter gives the conclusion arrived at by the study, recommendations of the study, limitations of the study and suggestions for areas for further studies.

#### **5.2 Summary of Findings**

The learning sought to investigate the determinants of loan pricing of commercial banks in Kenya. In doing so, the study sought to regress the average lending rates against a number of independent variables mainly the banking industry related characteristics which are: bank capitalization, bank deposits and bank reserves. In addition, were the macroeconomic variables mainly inflation and exchange rate. The model has new developments in the credit market as captured by introduction of Credit reference bureaus and the introduction of KBRR.

The results conclude that all the variables significantly influence the loan pricing as measured by the average lending rate at 5 percent significance level. This is because the respective probability values of the respective variables are less than 5 percent significance level. All the bank related characteristics captured by capitalization level, bank deposits and bank reserves contribute towards low interest rates. On one hand, inflation and reduction in the exchange rate lead to high cost of loans. Introduction of Credit reference bureaus and KBRR have led to lowering in the cost of loans by reducing information asymmetry in the credit market.

### **5.3 Conclusion**

From the results of the study, an unfavorable macroeconomic environment leads to rise in the cost of loan. More specifically, high inflation rate would translate into an increase in the lending rates by the commercial banks in attempt to cushion against the risk of loss of value for money overtime. Similarly, depreciation in the local currency against the other world currencies leads to increased cost of loans. Commercial banks would charge a premium to cushion against risks arising from the volatility in the forex market.

On the other hand, good performance with regard to bank specific variables such as capitalization levels, deposits and bank reserves would promote credit creation by banks and ultimately lowering the lending rates.

### **5.4 Recommendations**

From the findings, it is evident that good performance in the bank specific characteristics mainly the levels of capitalization, deposits mobilization and increased bank reserves significantly contribute in lowering the cost of loans. Moreover, the macroeconomic environment within which the commercial banks operate is core in influencing the price of the loan. A rise in the cost of living as measured by inflation as well as the weakening of the local currency relative to other world hard currencies contribute to high price of loans. This therefore calls for the regulator mainly the Central Bank to be execute necessary demand management policies that aim at anchoring inflation while at the same time ensuring stability in the forex market. This will go long way in impacting the level of deposit mobilization as well as the amount of reserves at the banks' disposal for lending and ultimately affecting the price of loans.

### **5.5 Limitations of the Study**

In this study, the main limitation is on the dependent variable used. The study used the average lending rate as a proxy for the cost of loan. The average lending rates is therefore a proxy for the cost of loans and not the actual cost. This is for the fact the different loan products have different lending rates which also varies across the banks. However, from the Central Bank point of view the best proxy for cost of loans is the average lending rates. Irrespective of the loan product or the bank.

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