

**DETERMINANTS OF LENDING RATE OF COMMERCIAL BANKS IN  
KENYA**

**BY**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS OF THE MASTER OF BUSINESS  
ADMINISTRATION (MBA) DEGREE**

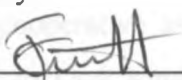
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**UNIVERSITY OF NAIROBI**

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## DECLARATION

This research project is my original work and has not been submitted for a degree in any other university.

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## **DEDICATION**

This research study is dedicated to my parents, Mr & Mrs Kinyuru, my brother Daniel, my sister Teresa and my best friend Koome for their moral support throughout the entire MBA program and especially during this research project.

## ABSTRACT

The factors that determine the level of commercial bank lending rates are important concerns to policy makers, the banking industry and the public at large. The market for commercial loans from commercial banks is competitive and rates on these loans have tended to respond to reductions in deposits rates and other costs. This study sought investigating determinants of lending rates in commercial banks in Kenya by answering the questions, what are the determinants of lending rates of commercial banks in Kenya .The main objective of the study was to establish factors determining lending rates of commercial banks in Kenya.

This study used a descriptive survey. The population of this study consisted of all 44 commercial banks in Kenya and therefore carries out a census survey. The study used both primary and secondary data sources in gathering data for analysis. The primary data was collected using semi-structured questionnaires. Data presentation was done by the use of pie charts, bar charts and graphs, percentages and frequency tables. The inferential statistic regression and correlation was done to establish the extent to which commercial banks determine factors influencing lending rate

The study concluded that cost of fund (loans) determine by Taxation Costs of provisioning ,core liquid asset requirement, transaction costs, Central Bank of Kenya supervisory fee , cost of capital (return on equity) greatly influenced determination of lending rate in commercial bank. The study concluded that other costs that determine the lending rate of commercial banks included the Statutory reserve requirement , Management fees , Staff costs and weighted average deposit rate ,reserve and liquidity requirements and mandatory investment levels required by the Central bank of Kenya .

The study concluded that inflation conditions, and market factors such as interbank rate, competition among Interbank rate, credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as well as demand and supply, Industry trend and that Policy rate that was linked to the Open Market operations influenced determination of lending rate of commercial banks.

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## **ABBREVIATIONS**

CBK - Central bank of Kenya

GDP – Gross Domestic Products

NPLs. - Non Performing Loans

SCP -Structure Conduct Performance’

BFIIs -Banks and financial institutions

GNP – Gross Net Products

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

The lending function is considered by the banking industry as the most important function for the utilization of funds. Since, banks earn their highest gross profits from loans, the administration of loan portfolios seriously affects the profitability of banks. Indeed, the large number of non-performing loans is the main cause of bank failure (Rehm, 2002). Banks are learning to review their risk portfolios using the criteria laid down by Basel II. Greenspan has indicated that Basel's goal is to induce bankers to improve their risk management capability, including how the institutions price products, reserve for loss, and control their operations (Hempel and Simonson, 1999).

Commercial banks' activities greatly rely on their intermediation services, filling the gap between suppliers and demanders of funds. Their profitability is partly due to the difference in interest rates charged on loans and what is paid to suppliers of funds that is the interest rate spread. Pyle (1971) argues that the larger the spread between loan and deposit rates, the more likely the necessary condition for intermediation to occur can be met. Earlier explanations that allow positive spread to be maintained rest on the ability of commercial banks to minimize transaction costs in loans originating through their intermediation services (Boucher, 1996). Benston and Smith (1976) suggest that transaction costs are central to the theory of financial intermediation and the ability of the financial intermediary to exploit the returns to scale implicit in the structure of the transaction costs by purchasing large blocks of securities, repackaging, and reselling them at a lower cost supports the existence of intermediaries. Informational asymmetries prevailing in the economy (Ramakrishnan and Thakor, 1984).

The factors that determine the level of commercial bank lending rates are important concerns to policy makers, the banking industry and the public at large. From a policy perspective, lower lending rates are desirable, as they tend to have a positive influence on new and existing investments, improve the competitiveness of Kenyan businesses and contribute to growth and development. These welfare effects would lead to generally higher living

standards and financial surpluses. On the other hand, developed country markets have shown that profits in the commercial banks tend to rise as interest rates increase (Ramakrishnan and Thakor, 2000). The rapid expansion in the local industry since 1990 would also lend itself to the perception that such a relationship would also hold in the Kenyan context. There is little wonder therefore that the commercial interest rates charged by local banks have been a sensitive and recurring policy issue in Kenya and one which requires an objective examination of all the factors behind the structure of commercial bank lending rates (Jayaraman, and Sharma, Rajesh ,2003). The market for commercial loans from commercial banks is competitive and rates on these loans have tended to respond to reductions in deposits rates and other costs. Tennant, D (2006), indicated that compensation for the direct cost incurred in loan administration and the risk profile of the borrower also plays a great role on determining commercial bank lending rates. The stance of the competition, the overall risk profile of the portfolio and the liquidity of the commercial banks would determine the final cost to the borrower. Investors negotiate with banks for the best terms available and, where possible, shift their business to take advantage of the best financing package (Njoka, 2003).

The impact of variations in commercial lending rates on banks' profitability is largely depends on the degree of responses of asset and liability rates. In general, since both sides of banks' balance sheets are affected by commercial bank lending rates in a parallel fashion, the net impact on banks' profitability can be deduced by tracing the responses of both assets and liabilities as market interest rates change (Gemmill and Thomas 2004),. The impulse response functions show that low and lagged response of lending rates contribute to the decline in banking spread following an increase in money market rates, thus, adversely affecting banking activities. Commercial banks lending policy determine who the target customer is. It is widely believed that fluctuations of lending rates exert significant influence on the activities of commercial banks in Kenya (Chirwa and Mlachila (2004). Kenya's economy has experienced tremendous growth in recent years, with real GDP growing at 7.1% in 2009. This achievement is collaborated by the improved performance of the Banking Sector in Kenya. The Sector remained stable in 2009 with positive developments recorded in all key financial indicators. Total assets

expanded by 19.5% from Kshs. 640 billion as at December 2010 to Kshs. 760 billion as at December 2010. As a result of the improved performance, the level of non-performing advances declined from the previous year's level of 99 billion to 95 billion as at end of December 2009.

The banking sector in this country has, over the last few years, witnessed significant growth in consumer lending. This is evidenced by the growth in real private sector credit of 17.7 % in the twelve months to May 2007. The resultant credit expansion has brought significant benefits to the economy, but the information asymmetry that is prevailing in the lending environment poses a real challenge in the form of credit risk for the banking sector in Kenya (Njuguna, 2009).

### **1.1.1 Commercial bank lending**

Financial institutions offering commercial bank lending primarily service the needs of corporations and larger businesses. Also known as business banking, commercial banks are not only banks but intermediate business between banks and other financial institutions unlike retail banking which provides services directly to consumers. These high-end institutions fund corporations, sole proprietorships and partnerships on many levels - from large businesses to overseas companies in a variety of nations - and include many different services from mortgage lending to supplying international capital to low and middle-income countries (Gemmill and Thomas 2004)

Financial institutions need capital to achieve their vision and financial goals. Commercial bank lending is there to help. Representing over 18 percent of all financial assets, commercial lending provides these companies with the funds they need to grow their business. Commercial loans, often called business or industrial loans, can be used for land, to purchase buildings, or purchase capital and equipment to use for manufacturing, distribution, wholesale, transportation, communication and much more. Although still a form of debt, these loans are not available for items such as investments or personal expenses (Tennant, 2006). Companies often choose a revolving line of credit to purchase materials or merchandise and repay the debt as merchandise sells. Credit is extended as it

is paid off, much like a credit card, and can be used for replacing equipment or restructuring buildings. Farmers can also take advantage of commercial bank lending to expand their agricultural farms and purchase much-needed equipment (Ramakrishnan and Thakor,2000).

Darby (1975) suggests that (expected) inflation is the main determinant of interest rates: as the inflation rate increases by one per cent, the rate of interest increases by one percent. This suggests that the (expected) interest rates change in proportion to the changing (expected) inflation, or the (expected) real interest rates are invariant to the (expected) inflation. There is a field of extensive studies on the test of the positive relationship between the expected inflation rate and the interest rate and the constancy of the real interest rate (Mishkin and Simmons, 1995).

Tobin (1965), on the other hand, argues that the real interest rate decreases with inflation. In other words, the interest rate increases less than the increase in inflation. As iterated in later studies for the Tobin effect, Stulz (1986) assume that the real wealth is kept constant in the form of financial assets: money and capital stock. As the inflation rate increases, the opportunity cost of holding money will increase and money demand will decrease. At a given level of the real financial wealth, this increases the capital stock. If the production function exhibits decreasing returns to scale, then the marginal productivity of the capital stock decreases with higher capital stock and lowers interest rates. Firstly, as the financial market is expected to be the transmission channel for the framework, a policy rate that is linked to the interbank rate or overnight rate may not have the desired effects on interest rates in the economy, as it will have no bearing on the banks' cost of funds.

### **1.1.2 The Commercial Banking Industry in Kenya**

The Banking industry in Kenya is governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act, and the various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalised in 1995 and exchange controls lifted. The Central Bank of Kenya, which falls under the Ministry of Finance, is responsible for formulating and implementing monetary policy and fostering the

liquidity, solvency and proper functioning of the financial system. Central Bank of Kenya publishes information on Kenya's commercial banks and non-banking financial institutions, interest rates and other publications and guidelines (CBK, 2011)

Banks represent a significant and influential sector of business worldwide that plays a crucial role in the global economy. Commercial banks are financial intermediaries that serve as financial resource mobilization points in the global economy. They channel funds needed by business and household sectors from surplus spending to deficit spending units in the economy. A well developed efficient banking sector is an important prerequisite for saving and investment decisions needed for rapid economic growth. A well functioning banking sector provides a system by which a country's most profitable and efficient projects are systematically and continuously funded. The role of commercial banks in Kenya is paramount because they execute monetary policy and provide means for facilitating payment for goods and services in the domestic and international trade.

Commercial banks are custodians of depositor's funds and operate by receiving cash deposits from the general public and loaning them out to the needy at statutorily allowed interest rates. Loans are based on the credit policy of the bank that is tightly coupled with the central bank interest rate policy. These in effect determine the level of financial risk in a particular bank (CBK,2010).

## **1.2 Research Problem**

One of the problems that has raised the interest of economists is to know the determinants of lending interest rates. Attracting and retaining profitable customers, and increasing revenue from those customers, is a priority of the managers of all banks in today's globalised marketplace. It is particularly important in the highly competitive retail financial services market, where the core business of banking continues to be "the profitable management of risk" (Hogan *et al.*, 2001). As Coleman *et al* (1992) stated, the interest rates structure depends on reasons that are both internal and external to financial markets. Different types of interest rate are linked and influence each others, so that the



functioning of the financial markets and their international relationships explain a good deal of interest rate fluctuations. Johnson and Johnson (1985) observes that the economic performance, perspective and expectations of potential loan receivers as well as in the overall economy play an important role. Central bank of Kenya policy is one of the most powerful factors impacting on these agreements, for example through the instrument of direct determination of official discount rate or the rate for refinancing operations (Ndung'u and Ngugi, 2000).

Banks are viewed as providing a special role in the economy as asset transformers. The existence of banks minimizes the adverse selection and moral hazard problems, which are prevalent in direct financial transactions. Through maturity and liquidity transformation and their specialization in sorting and evaluating information, banks can properly evaluate loans that cannot be priced accurately by market participants. The maturity and liquidity intermediation causes the maturity of a bank's balance sheet to be mismatched and therefore expose the bank to variation in market rates. Banks' balance sheets' maturity structure of 'borrowing short and lending long' is argued to be the main source of the interest rate risk faced by commercial banks.

Prior studies have been done locally on the field on interest rates in commercial banks. Mwindi (2002) carried out a study on the relationship between interest rates charged by MFIS and performance of micro and small enterprises in Nairobi, and found out that the higher the interest rates hinders financial performance of the Microfinance institutions. Kibe (2003) carried out a study on the relationship between interest rate spread and profitability of commercial banks in Kenya and found out that comprehensive set of bank characteristics such as size, leverage, type of business, foreign ownership, macro indicators, such as taxation and regulatory variables, financial structure variables, and legal and institutional indices influence bank interest rate spread and profitability, Muriithi (2003) conducted a study on comparison of interest rates between short and long term financial debt securities while Kimutai, (2003) carried out a study between lending interest rate and financial performance of micro finance institutions in Kenya, and found out that the impulse response functions show that low and lagged response of lending

rates contribute to the decline in lending spread following an increase in money market rates, adversely affecting micro financing activities and that high level of interest rates hinders financial institutions' profitability. None of these local and international researchers have focused on the determinants of lending rates in commercial banks in Kenya. Therefore there is a gap in literature on the various factors that determine the interest rates among commercial banks. This study therefore seeks to fill existing knowledge gap investigating determinants of lending rates in commercial banks in Kenya by answering the questions, what are the determinants of lending rates of commercial banks in Kenya?

### **1.3 Objectives of the Study**

To establish factors determining lending rates of commercial banks in Kenya.

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

This study will be of significance to several parties in the financial sector. It will be significant to bank managers to understand the various factors that influence the lending rate and to make decisions that are in line with the preferences of the customers. Potential investors, both local and international, who may want to channel their funds for investment in local banks and will benefit from a greater variety of risk-return profiles for making investments

Government and financial policy makers will benefit from this study as they will be able to gain insight on factor influencing lending rate and formulate policies that will enable commercial bank determine effective lending rates. Fund managers who act as custodian and managers of the funds will benefit from knowing criteria that determines the most suitable bank to invest funds Researchers will benefit from documented information into determinants of lending rates in commercial banks.

Academicians will benefit from the findings of this study as it will add to the body of existing knowledge in finance. The results will establish the factors that determinate lending rate in commercial banks in Kenya.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0 Introduction**

This chapter presents critical reviews concerning the study on issues of determinants of lending rates of commercial banks in Kenya. This is done through discussing, Commercial bank Lending Rates, the relevant theories, empirical and factors that determine rates in banks.

### **2.1 Commercial bank Lending Rates**

The lending function is considered by the financial industry as the most important function for the utilization of funds. Since, banks earn their highest gross profits from loans; the administration of loan portfolios seriously affects the profitability of banks. Indeed, the large number of non-performing loans is the main cause of bank failure. With respect to performance, banks now use various measures to assess bank efficiency and related functions in the bank lending process. Traditionally, banks determined operating efficiency by using measures of bank profitability, such as return on equity, return on assets, and return on investment; also, banks used operational ratios, such as monetary output per staff member, and total operating expenses per unit of output.

Banking institutions adopted data envelopment analysis (DEA) in the 1990s as the principal method for assessing bank efficiency. DEA is a linear-programming method initially developed by Charnes et al. (1978) to measure the comparative performance of homogeneous organizations. The objective of DEA was to build an efficiency frontier of inputs and outputs, where production is maximized under fixed costs or costs are minimized under restricted production. Thanassoulis (1999) concluded that banks were increasingly using DEA as a tool for assessing, monitoring, and improving performance. The system is widely discussed in recent literature containing banking performance studies. Sherman and Gold (1985), Berg et al. (1993) and Ferrier and Lovell (1990) adopted DEA as a tool for assessing corporate banking performance.

Athanassopoulos and Giokas (2000), Golany and Storbeck (1999), Thanassoulis (1999) and Zenios et al. (1999) used the DEA method to assess bank branch performance.

Kantor and Maital (1999) combined and integrated activity based-costing (ABC) and DEA management tools for measuring costs and performance of bank branches.

Grasing (2002) described the efforts of the Nolan Company to develop benchmarks for commercial banks involving many of the top performing banks. The goal of establishing the benchmarked banks was to establish drivers of high performance. The cost per each completed loan, the cost per thousand dollars of loans, the non-interest revenue from each loan per each thousand dollars, the total number of loans per employee, and the dollar amount of loans per employee were used as the performance measures for commercial banking.

As reported by Boucher (1996), measuring the productivity of a loan officer is the key to improving commercial lending performance. The productivity measure of a loan officer is quarterly loan sales. The manager can use this information to analyze the loan officers' quarterly productivity. Perro and Ruoff (1997) used the value tree to depict some of the values and risk drivers for commercial lending. The drivers of lending revenue are operating fees and interest income that are driven by new loans and existing loan volumes. The drivers of lending expenses consist of interest expense, operating expense, loss revenues and unexpected losses in commercial loans.

Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation. As Crowder and Hoffman (1996) noted, the expected decline in the purchasing power of money is captured by the expected inflation plus the conditional variance of inflation. More specifically, under the Fisher hypothesis, expected nominal rates of return on assets move one-to-one with ex ante inflation. This is often formulated as ex ante real rates being statistically uncorrelated with expected inflation.

It is widely believed that fluctuations of market interest rates exert significant influence on the activities of microfinance institutions. Later investigation by Hancock (1985) confirms the conjecture that a higher level of market interest rates improves microfinance institutions profitability. In addition, the effect of interest rate spread changes on

microfinance institutions' profitability is shown to be asymmetric with the effect originating from lending rates being greater than those of deposit rates. The stochastic behavior of market rates is also argued to be a significant factor that determines the mode microfinance adopt in delivering their services. Desmukh et al. (1983) show that microfinance institutions can be either brokers or asset transformers subject to interest rate uncertainty. In a volatile interest rate environment, microfinance institutions minimize their risk exposure by performing the role of brokers, merely matching the arrival of assets and liabilities (Kashyap and Stein (2000).

The impact of variations in market interest rates on banking institutions' profitability is ambiguous; it largely depends on the degree of responses of asset and liability rates. In general, since both sides of commercial bank's balance sheets are affected by market interest rates in a parallel fashion, the net impact on microfinance institutions' profitability can be deduced by tracing the responses of both assets and liabilities as market interest rates change. Commercial banks activities greatly rely on their intermediation services, filling the gap between suppliers and demanders of funds. Their profitability is partly due to the difference in interest rates charged on loans and what is paid to suppliers of funds. Pyle (1971) argues that the larger the spread between loan and deposit rates, the more likely the necessary condition for intermediation to occur can be met. Earlier explanations that allow positive spread to be maintained rest on the ability of commercial institutions to minimize transaction costs in loans originating through their intermediation services.

## **2.2 Theories of Lending Interest Rate**

An increasing body of analytical work has attempted to explain the functioning of credit markets using new theoretical developments. Challenging the paradigm of competitive equilibrium, they have explored the implications of incomplete markets and imperfect information for the functioning of credit markets in developing countries. These provide a new theoretical foundation for policy intervention. Most of this body of literature has followed from the pioneering work of Stiglitz and Weiss (1981).<sup>b</sup>The work by Stiglitz and Weiss (1981) marks the beginning of attempts at explanations of credit rationing in

credit markets. In this explanation, interest rates charged by a credit institution are seen as having a dual role of sorting potential borrowers (leading to adverse selection), and affecting the actions of borrowers (leading to the incentive effect). Interest rates thus affect the nature of the transaction and do not necessarily clear the market.

Both effects are seen as a result of the imperfect information inherent in credit markets. Adverse selection occurs because lenders would like to identify the borrowers most likely to repay their loans since the banks' expected returns depend on the probability of repayment. In an attempt to identify borrowers with high probability of repayment, banks are likely to use the interest rates that an individual is willing to pay as a screening device. However, borrowers willing to pay high interest rates may on average be worse risks; thus as the interest rate increases, the riskiness of those who borrow also increases, reducing the bank's profitability. The incentive effect occurs because as the interest rate and other terms of the contract change, the behaviour of borrowers is likely to change since it affects the returns on their projects. Stiglitz and Weiss (1981) further show that higher interest rates induce firms to undertake projects with lower probability of success but higher payoffs when they succeed (leading to the problem of moral hazard).

Since the bank is not able to control all actions of borrowers due to imperfect and costly information, it will formulate the terms of the loan contract to induce borrowers to take actions in the interest of the bank and to attract low risk borrowers. The result is an equilibrium rate of interests at which the demand for credit exceeds the supply. Other terms of the contract, like the amount of the loan and the amount of collateral, will also affect the behaviour of borrowers and their distribution, as well as the return to banks. Raising interest rates or collateral in the face of excess demand is not always profitable, and banks will deny loans to certain borrowers (Ramakrishnan and Thakor, 1984).

### **2.2.1 Expectations Theory**

This theory is based on the expectations that people will have in regard to future conditions. If investors expect future interest rates to be high, they will prefer to hold long term securities and if the vice versa is true, they will prefer short term securities.

Other expectations that will influence securities demand will include expectations on political conditions, expected inflation levels. Also known as an expectancy theory, an expectation theory is a strategy that is used by investors to make predictions about the future performance of interest rates (Peek and Rosengren ,1995). Essentially, the expectations theory states that by evaluating current long-term interest rates, it is possible to determine the course of short-term interest rates. While there are a number of supporters for this theory, many investors and financial experts also believe the logic behind a theory of expectations is flawed and does not serve as an accurate indicator of future short-term rates in and of itself (Jayaraman, and Sharma, Rajesh ,2003).

For those that believe the concept of the expectation theory has merit, it is often noted that many investment strategies rely on evaluating past movements in order to predict future performance. Since this approach has proven successful in helping to choose wise investments such as stocks and commodities, the same approach can also be used in predicting the movement of short term interest rates. Often, proponents of the theory will also point to anecdotal evidence that seems to support this approach (Ramakrishnan and Thakor, 2000).

The logic underlying the theory, that expectations of future short interest rates shape the term structure of longer interest rates, is intuitive, appealing, and a common assumption in macroeconomic modelling. However, the predictability of excess returns shown by Fama and Bliss (1987), Campbell and Shiller (1991) and more recently by Cochrane and Piazzesi (2005) undermines the premise that long interest rates are rational expectations of future short rates up to a constant term premium. Rather, such evidence points strongly toward time-varying risk premia. Indeed, Dai and Singleton (2002) demonstrate that interest rates adjusted for time-varying risk premia estimated from dynamic term structure models meet the predictions of the expectations hypothesis in traditional excess-return regressions.

One of the inherent dangers with the expectation theory is that it can be very simple to overstate the estimate on the future short-term rates. Since the theory relies only on

analyzing past performance of long-term interest rates, this approach can easily omit data that would possibly temper the amount of change in short term interest rates. Factors such as political shifts, disaster situations, or sudden changes in consumer tastes and demands can easily impact the direction of interest rates and throw the projections developed through the use of this theory out of line (Njoka, 2003).

The expectation theory also does not take into account the element of risk that may also influence the level of interest rates in general. For example, the theory does not recognize the fact that forward rates don't always provide a clear picture of future rates, a situation that makes the risk of investing in short term bonds rather than long-term bond issues somewhat higher. The theory also does not include the possibility of reinvestment taking place and therefore introducing a new factor that can have a dramatic impact on interest rates.

It is an empirical fact that nominal interest rates are highly persistent and the poor power of traditional univariate Dicky-Fuller type tests against the null of a unit root (Stock, 1994) has led many researchers to conclude that interest rates are integrated of order one. Moreover, the convenience of working with established results for integrated processes has made it attractive to assume the presence of a unit root for empirical purposes. As such, nominal interest rates have been treated as integrated of order one in numerous empirical (Gemmill and Thomas 2004)

### **2.2.2 Liquidity Preference Theory**

According to this theory, investors will always prefer short term securities to long term securities. To encourage them hold long term bonds, long term securities should yield higher interests than short term bonds. Therefore, the yield curve will always be upward sloping. An hypothesis about the term structure of interest rates (the relationship between interest rates and term to maturity) holding that investors demand a premium for bearing interest rate risk. The extent of the premium increases with term to maturity but at a decreasing rate. The two reasons behind the decreasing rate of increase are that duration, a measure of a bond's price sensitivity to interest rate changes, increases at a decreasing



rate with term to maturity and that long term interest rates are typically less volatile than short term interest rates. (Tennant, 2006)

Commercial banks determine the interest rate in the credit market by marking up the central bank's base rate, and then supply credit at this rate to those borrowers whom they consider to be creditworthy. Banks are therefore price makers and quantity takers, within the limits given by creditworthiness. Again, the willingness of firms and households to pay the rate of interest set by banks in the credit market is a necessary, but not a sufficient condition to obtain credit, and there will always be some sort of 'credit rationing' for those who are unable to provide required collateral (Wolfson 1996). The commercial banks' mark-up on the base rate is determined by their risk and liquidity considerations, and also by the degree of competition in the commercial banking sector. In this approach, liquidity preference determines the structure of interest rates, and not the level of interest rates. The commercial banks' liquidity preference is a determinant of the mark-up and hence the spread between the base rate and the market rate of interest. If liquidity preference and risk considerations of private banks and, hence, their markups remain constant, the central bank's interest rate setting in the base money market also determines the market rate of interest in the credit market (Smithin 2003).

Under these conditions, changes in the base rate and in the credit market rate of interest are due to changes in the monetary policy stance. Changes in the central bank's base rate will therefore also shift the credit supply curve and affect credit demand and hence real economic activity financed by credit. However, if commercial banks' liquidity and risk considerations or the degree of competition, and hence their mark-ups, change in the face of a changing base rate of interest, monetary policy may not be able to determine the credit market rate of interest directly. Here an asymmetry may arise: An increasing base rate of interest will always trigger an increasing credit market rate, because commercial banks have to recover costs of refinancing and have to gain (minimum) profits. But a decreasing base rate may not be followed immediately by a falling credit market rate, if commercial banks' liquidity and risk premia increase due to rising uncertainty, or if banks' profit aspirations increase. Note finally, that the horizontalist view does not imply

that monetary policy is free to set the rate of interest at whatever level, irrespective of economic conditions. On the contrary, modern central banks have used the interest rate tool in order to stabilize inflation – and/or the exchange rate, depending on the exchange rate regime (Athanasopoulos and Giokas ,2000).

### **2.2.3 Market Segmentation Theory**

The Market Segmentation Theory tries to describe the relation of the yield of a debt instrument with its maturity period. The Market Segmentation Theory explicates the reasons behind the prominence of normal yield curves over the other forms of yield curves. Furthermore, short and long-term markets fall into two different categories. Therefore, the yield curve is shaped according to the supply and demand of securities within each maturity length. The Market segmentation theory states that most investors have set preferences regarding the length of maturities that they will invest in. Market segmentation theory maintains that the buyers and sellers in each of the different maturity lengths cannot be easily substituted for each other. An offshoot to this theory is that if an investor chooses to invest outside their term of preference, they must be compensated for taking on that additional risk. This is known as the Preferred Habitat Theory. In the Market segmentation theory, it is assumed that short term and long term rates are determined in separate or segmented markets. Some investors prefer short term securities. They invest in short term bonds. Again, there are some investors who prefer long term bonds. As a result bonds having different maturity periods are not perfect substitutes for one another. Such an argument implies that lenders and borrowers are interested in bonds of only one maturity and even if the return on a sequence of shorter bonds were considerably higher than the return on those bonds, they would not attempt to switch into shorter bonds. Therefore, expectation concerning short rates would have no role in determining long rates. Thus even if short term rate increases in any period of time this theory implies that investors will not shift from long term bonds to short term bonds in order to enjoy higher rate in the short run. Thus even if the short run rate of interest increases it will not influence the long term rate of interest(Grasing (2002) .

Market segmentation theory is based on institutional practices followed by the commercial banks and insurance companies and investment trusts. While the commercial banks mostly deal in short term securities, insurance companies and investment trusts mostly deal in long term securities. Market segmentation theory is however not free from defect as it overlooks the fact that there is considerable degree of overlapping between different markets. Same institutions operate in different markets dealing in securities of different maturities. According to the Market Segmentation Theory the financial instruments that have separate term periods cannot be replaced with one another. This means that the demand as well as supply of debt instruments having long term periods and short term periods in the financial markets is ascertained separately (Boucher ,1996).

The choices of investors are an important part of the Market Segmentation Theory. According to this theory the investors need to make their choices beforehand. It has been seen that the investors normally want to invest in debt instruments that have shorter term periods. The main reason behind this is that the investors like to have investment portfolios that have a certain amount of liquidity. The short term debt instruments provide them with that luxury. Thus according to the Market Segmentation Theory, the financial market that deals in debt instruments of shorter terms would experience more demand. As per the Market Segmentation Theory if a particular debt instrument has higher demand it is supposed to cost more. The yield from the same would be relatively low. The fact that the yields of short-term debt instruments are lower than that of the long-term debt instruments could be understood from this explanation(Crowder and Hoffman (1996).

In the United States of America the yield curve of the dollar was reversed in the later stages of 2005 and early period of 2006. The yields of the short-term debt instruments were more than that of the long-term debt instruments. This could be explained by the Market Segmentation Theory. As per the Market Segmentation Theory the investors might have preferred the long term debt instruments over the short term debt instruments and this could have contributed to the higher yields of short-term debt instruments over long-term debt instruments (Perro and Ruoff ,1997)..

## 2.3 Empirical Review

Maudos and Fernandez de Guevara (2004) analyzed interest margins in the principal European banking countries over the period 1993–2000 by considering banks as utility maximizers bearing operating costs. They found that factors that explain interest margins are the competitive condition of the market, interest rate risk, credit risk, operating expenses, and bank risk aversion among others. Elsewhere Angbanzo (1997) tested the hypothesis that banks with more risky loans and higher interest rate risk select lending and deposit rates so as to earn wider net interest margins. He used United States bank data from 1989–93 and found evidence in support of the hypothesis.

Because the accessibility of credit depends importantly on banks' roles as financial intermediaries, loan growth is a meaningful measure of intermediary activity. <sup>2</sup> We use C&I loan growth as a measure of lending activity because it is an important channel for credit between the financial and productive sectors of the economy. Keeton and Morris (1987) undertook a study on why banks' loan losses differ. They examined the losses by 2,470 insured commercial banks in the United States (US) over the 1979-85. Using NPLs net of charge-offs as the primary measure of loan losses, Keeton and Morris (1987) shows that local economic conditions along with the poor performance of certain sectors explain the variation in loan losses recorded by the banks. The study also reports that commercial banks with greater risk appetite tend to record higher losses.

Sinkey and Greenwalt (1991), for instance, investigate the loan loss-experience of large commercial banks in the US by employing a simple log-linear regression model and data of large commercial banks in the United States from 1984 to 1987. They argue that both internal and external factors explain the loan-loss rate (defined as net loan charge offs plus NPLs divided by total loans plus net charge-offs) of these banks. These authors find a significant positive relationship between the loan-loss rate and internal factors such as high interest rates, excessive lending, and volatile funds. Crowder and Hoffman (1996) report that depressed regional economic conditions also explain the loss-rate of the commercial banks.

De Graeve et al. (2004) estimate the determinants of the interest rate-pass through on Belgian banks and find that banks with more market power pursue a less competitive pricing policy. In a microeconomic analysis of Spanish banks, Lago and Salas (2005) provide evidence that a mixture of price adjustment costs and bank market power causes price rigidity and asymmetric pass-through. In a cross-country study, Kok Sørensen and Werner (2006) show that differences in the pass-through process across the euro area countries may to some extent be explained by national differences in bank competition. Finally, in another euro area based study, Gropp et al. (2007) provide evidence that the level of banking competition has a positive impact on the degree of bank interest rate pass-through.

Bercoff, Giovanni and Grimard, (2002) examined the fragility of the Argentinean Banking system over the 1993-1996 period. They argue that NPLs are affected by both bank specific factors such as interest rate spread and macroeconomic factors. To separate the impact of bank specific and macroeconomic factors, the authors employ survival analysis. Using a dynamic model and a panel dataset covering the period 1985-1997 to investigate the determinants of problem loans of Spanish commercial and saving banks, Salas and Saurina (2002) reveal that real growth in GDP, rapid credit expansion, bank size, capital ratio and market power explain variation in NPLs.

Rajan and Dhal (2003) utilize panel regression analysis to report that favorable macroeconomic conditions (measured by GDP growth) and financial factors such as maturity, cost and terms of credit (interest margin), banks size, and credit orientation impact significantly on the NPLs of commercial banks in India. Using a pseudo panel-based model for several Sub-Saharan African countries, Fofack (2005) finds evidence that economic growth, real exchange rate appreciation, the interest rate, net interest margins, and inter-bank loans are significant determinants of NPLs in these countries. The author attributes the strong association between the macroeconomic factors and non-performing loans to the undiversified nature of lending rates by the commercial banks (Lago and Salas, 2005).

The recent literature on bank lending is extensive. The rationale for capital requirements and the prudential regulations of banks in general, and their link to lending, has been explored in many papers (Bernanke and Gertler, 1995). Peek and Rosengreen (1992) investigated the link between bank capital and bank lending. In a similar vein, Bernanke and Gertler (1987), and Holstrom and Triole (1997) make a point that in cases where there are credit constraints, bank capital will determine the strength of lending. Finally, Furfine (1995), and Diamond and Rajans (1999) point out that a link between capital requirements and regulations affects loan growth, while Hellman, Murdock, and Stiglitz (1998) argue that capital requirements can have a perverse effect on lending.

In addition, there is another factor to consider in explaining the decline in lending. According to Syron (1991), and Bernanke and Lown (1991), the term 'credit crunch' has been suggested as a more apt description for the reduction in the loan supply during crises, in view of the role of bank capital. Peek and Rosengren (1995) find that there was a dramatic reduction in the growth rate of bank lending associated with the 1990-91 recession in the US. However, Sharpe (1995) states that this research has been less successful in determining whether this association is due to a causal effect of bank capital on loan supply or due to the effect of persistent variations in loan demand. The research to date fails convincingly to tie the drop in aggregate lending to changes in capital standards [or regulatory behavior] or to negative shocks in GNP due to a crisis. However, besides capital structure changes due to capital adequacy regulations and negative production shocks, changes in loan supply can be explained within the context of macroeconomic shocks that are interest rate, exchange rate, and public sector borrowings shocks. Therefore, other studies need to be considered for the purposes of the paper. According to the bank lending channel thesis, monetary policy affects the real economy at least in part through a direct effect on the supply of bank loans (Mishkin, 1996). A necessary condition for this channel to be operative is that banks change their loan supply in reaction to shocks to their reserves—that is there is a link between money supply and loan supply. Thakor (1996) claims that increases in the money supply decrease bank lending. However, Favero et al., (July 1999) do not find evidence of a significant response of bank loans to the monetary tightening by squeezing bank reserves; however,

they find significant differences both across countries and across banks of different dimensions in the factors that allow them to shield the supply of loans from the squeeze in liquidity.

Ngugi (2001) analyzed the interest rates spread in Kenya from 1970 to 1999 and found that interest rate spread increased because of yet-to-be gained efficiency and high intermediation costs. Increase in spread in the post-liberalization period was attributed to the failure to meet the prerequisites for successful financial reforms, the lag in adopting indirect monetary policy tools and reforming the legal system and banks' efforts to maintain threatened profit margins from increasing credit risk as the proportion of non-performing loans. She attributed the high non-performing loans to poor business environment and distress borrowing, owing to the lack of alternative sourcing for credit when banks increased the lending rate, and the weak legal system in enforcement of financial contracts. According to her findings, fiscal policy actions saw an increase in Treasury bill rates and high inflationary pressure that called for tightening of monetary policy. As a result, banks increased their lending rates but were reluctant to reduce the lending rate when the Treasury bill rate came down because of the declining income from loans. They responded by reducing the deposit rate, thus maintaining a wider margin as they left the lending rate at a higher level. Postulating an error correction model and using monthly data for the study period, Ngugi (2001) found that for Kenya, rising inflation resulting from expansionary fiscal policy, tightening of monetary policy, yet-to-be realized efficiency of banks and high intermediation costs explained interest rate spreads.

#### **2.4 Factors influencing determining of Lending rates in Bank**

Numerous demand and supply side factors affect bank lending. On the supply side, reduced bank lending may come about because banks have insufficient capital for lending due to tight monetary policy and more stringent regulations such as stricter requirements on capital adequacy ratios. The accumulation of NPLs in Asia may be a particularly important influence hindering the banking system from performing its intermediary functions. An important demand side factor is the weakened status of borrowers' balance sheets. In a number of countries, the corporate sector has been struggling to deal with

high debt burdens and overcapacity. Falling asset prices have adversely affected their net worth.

## **2.4. 1Market structure**

Market structure encompasses the degree of competition, which reflects the number of market players and the diversity of financial assets, the market share of individual participants, ownership structure and control, policy regime (controlled vs uncontrolled), and the adequacy of the legal and regulatory framework ( Fry, 1995). In a market where the government sets interest rates and credit ceilings, allocation of resources is inefficient because of uneven credit rationing criteria and the lack of incentive by banks to compete for public deposits. In addition, the allocation of funds to poor performing sectors increases the credit risk for commercial banks. With interest ceilings, however, banks are constrained in charging the appropriate interest rate on loans, and the only option is to offer the minimum possible interest rate on deposits. Further, the presence of government owned and controlled banks create an uncompetitive environment and to some extent make it difficult to enforce the set regulatory framework, weakening the stability of the banking sector.

Financial reform emphasizes the abolition of interest rate and credit ceilings and the promotion of a competitive environment with reduced government control and ownership. Although achieving competitiveness does not imply nonexistence of an interest rate spread, Ho and Saunders (1981) note that the size of the spread is much higher in a non-competitive market, which also calls for strengthening the regulatory and legal framework to enhance the stability of the market. Caprio (1996) notes that a weak legal system, where the courts are not oriented toward prompt enforcement of contracts and property rights are ill defined, increases credit riskiness and banks have no incentive to charge lower rates.

Cho (1988), in addition, observes that the liberalization theory overlooks endogenous constraints to efficient allocation of resources by the banking sector, where, in the absence of a well functioning equities market, efficient allocation of capital is not



realized even with financial liberalization. Fry (1995) explains that in the absence of direct financial markets and an equity and bonds market, financial institutions absorb too much risk, as business enterprises rely excessively on debt finance. Thus, conclude Demirguc-Kunt and Huizinga (1997), the interest spread fluctuates, reflecting the substitution between debt and equity financing. As the equity market expands, offering competitive returns, banks increase their deposit rates to compete for funds from the public. The expanded market also reduces the risk absorbed by the banking sector and banks charge competitive lower lending rates, reducing the interest rate margin. Thus, remarks Fry (1995), even in an oligopolistic banking system, there is need for competition from the direct financial market. Empirical results show that market imperfections widen the bank lending rate. Ho and Saunders (1981), approximating market power with bank size, found a significant difference in spread between large and small banks, where smaller banks had higher spreads than the large banks.

Competition in the banking sector has been analysed by, amongst other methods, measuring market power (*i.e.* a reduction in competitive pressure) and efficiency. A well-known approach to measuring market power is suggested by Bresnahan (1982) and Lau (1982), recently used by Bikker (2003) and Uchida and Tsutsui (2005). They analyze bank behaviour on an aggregate level and estimate the average conjectural variation of banks. A strong conjectural variation implies that a bank is highly aware of its interdependence (via the demand equation) with other banks in terms of output and prices. Under perfect competition, where output price equals marginal costs, the conjectural variation between banks should be zero, whereas a value of one would indicate monopoly. Panzar and Rosse (1987) propose an approach based on the so-called H-statistic which is the sum of the elasticities of the reduced-form revenues with respect to the input prices. In principle, this H-statistic ranges from  $-\infty$  to 1. An H-value equal to or smaller than zero indicates monopoly or perfect collusion, whereas a value between zero and one provides evidence of a range of oligopolistic or monopolistic types of competition. A value of one points to perfect competition. This approach has been applied to all (old) EU countries by Bikker and Haaf (2002) and to 101 countries by Bikker *et al.* (2006).

A third indicator for market power is the Herfindahl-Hirschman Index, which measures the degree of market concentration. This indicator is often used in the context of the 'Structure Conduct Performance' (SCP) model (Berger *et al.*, 2004, and Bos, 2004), which assumes that market structure affects banks' behaviour, which in turn determines their performance. According to the seminal papers by Klein (1971) and Monti (1972) on banks' interest rate setting behaviour, banks can exert a degree of market pricing power in determining loan and deposit rates. The Monti-Klein model demonstrates that interest rates on bank products with smaller demand elasticities are priced less competitively. Hence, both the levels of bank interest rates and their changes over time are expected to depend on the degree of competition. With respect to the level of bank interest rates, Maudos and Fernández de Guevara (2004) show that an increase in banks' market power (a reduction in competitive pressure) results in higher net interest margins.<sup>4</sup> In addition, Corvoisier and Gropp (2002) explain the difference between bank retail interest rates and money market rates by bank's product-specific concentration indices. They find that in concentrated markets, retail lending rates are substantially higher, while deposits rates are lower.

Regarding the effect of competition on the way banks adjust their lending rates, Hannan and Berger (1991) find that lending rates are significantly more rigid in concentrated markets. Especially in periods of rising monetary policy rates, banks in more consolidated markets tend not to raise their lending rates, which may be indicative of (tacit) collusive behaviour among banks. In a cross-country analysis, both Cottarelli and Kourelis (1994) and Borio and Fritz (1995) find a significant effect of constrained competition on the monetary transmission mechanism. Thus, lending rates tend to be stickier when banks operate in a less competitive environment, due to, *inter alia*, the existence of barriers to entry.

## 2.4.2 Cost of funds

There are a number of loan cost factors that influence the way banks set lending rates. Among these, the costs of debt and equity funding and the losses that banks expect to incur on their lending activities are particularly important. Previous Reserve Bank research has noted that the increase in the cost of debt funding – primarily due to higher costs of deposits and long-term wholesale debt – has been a key driver of the increase in banks' lending rates relative to the cash rate in recent years. This assumes banks' return on equity targets have not changed over recent years. As such, changes in the contribution of equity costs in funding loans are determined solely by changes in the share of equity in funding. Operational costs, especially staff costs, for most commercial banks are high and this has a bearing on the determination of base lending rates. In particular, staff loans had, on one occasion, been explicitly included in the calculation of the base lending rate. This, it can be inferred that these loan costs were being passed directly onto clients. The high staff costs may be due to the fact that new banks entering the market have to “poach” staff from existing banks, therefore resulting in higher salaries which become sticky downwards.

Although increased debt funding costs have been the most important determinant of the increase in lending rates relative to the cash rate, our estimates suggest that there has been a material effect from increases in equity capital and expected losses. This is particularly the case for lending to businesses, as both the share of equity capital used to fund business loans and banks' perceptions of the risks associated with this form of lending have increased noticeably. Increases in equity capital and expected losses are estimated to have had a smaller effect on residential mortgage lending rates. A consequence of higher equity funding costs and higher expected losses is that the major banks' average lending rates have risen relative to their debt funding costs over the past couple of years. This has contributed to the increase of around 15 basis points in their average net interest margin from historical lows in 2008

The pricing of loan amount theoretically depends on the cost of funds, transaction cost, investment income, and mark-up. However, there are two issues which make a distinct

difference in microfinance. The first tries to disentangle the role of subsidies that is very much present in bank operations. Banks, aware of the effect of subsidies, have either discounted subsidies at the outset or mitigate its effect through an exit approach over time. Either of these approaches is not a familiar practice in traditional banking and evidence of adverse consequences in the microfinance market abound (Morduch 1999). Second, financial markets contend with high, volatile, and differential transaction cost in reaching poor clients. While the volatile and high cost can be associated with the poor's characteristics, differences in transaction costs emerge as a result of variations in operational strategies. The informal operations of microfinance have partially contributed to the occurrence of the latter.

Banks and financial institutions (BFIs) have been passing on their increased cost of funds caused by a prolonged liquidity crunch to their borrowers both the general public and industrialists in the form of higher lending rates. The interest rate on loans has doubled from 8 percent to 16 percent in the last one year. In addition to the costs of debt and equity funding, lending rates include a risk margin designed to cover the expected losses from making that particular type of loan. There can be considerable variation in interest rates across business loans, as banks base their pricing on the characteristics of the individual borrower and the quality of collateral (such as commercial property or equipment). The available evidence suggests that the average spread to the cash rate on new term loans to large businesses increased by about 200 basis points, from around 150 basis points in mid 2007 to a peak of around 350 basis points in mid 2009. Since then, spreads on new loans have declined, and are now closer to the average margin on existing loans. As such, the average margin on outstanding business lending facilities appears to have broadly stabilized. For business lending, debt funding costs have also been the largest individual driver of the increase in lending rates relative to the cash rate, though there have also been significant contributions from the cost of equity and from higher risk margins to cover expected losses. .

### **2.4.3 Economic Conditions**

The macroeconomic environment affects the performance of the banking sector by influencing the ability to repay borrowed loans; the demand for loans with the unpredictable returns from investment and the quality of collateral determine the amount of premium charged and therefore the cost of borrowed funds to the investors. With an unstable macroeconomic environment and poor economic growth, investors face uncertainty about investment return and these raise the lending rates as the level of nonperforming loans goes up, squeezing the bank margin. For example, poor output prices reduce firm profitability while reduced asset prices reduce the value of assets for collateral and therefore the credit-worthiness of the borrowers. As a result, return on investment declines, increasing the level of non-performing loans, and banks charge high-risk premiums to cover their default risk.

Cukierman and Hercowitz (1990) attempt to explain the relationship between anticipated inflation and the degree of market power measured as the spread between the debit and credit rates. They find that when the number of banking firms is finite, an increase in anticipated inflation leads to an increase in interest spread. When banking firms approach infinity (competitive case), there is no correlation between interest spread and inflation because the spread tends towards marginal cost of intermediation as the number of banks increases.

In addition, there is another factor to consider in explaining the decline in lending. According to Syron (1991), and Bernanke and Lown (1991), the term 'credit crunch' has been suggested as a more apt description for the reduction in the loan supply during crises, in view of the role of bank capital. Peek and Rosengren (1995) find that there was a dramatic reduction in the growth rate of bank lending associated with the 1990-91 recession the US. However, Sharpe (1995) states that this research has been less successful in determining whether this association is due to a causal effect of bank capital on loan supply or due to the effect of persistent variations in loan demand. The research to date fails convincingly to tie the drop in aggregate lending to changes in capital standards [or regulatory behavior or to negative shocks in GNP due to a crisis. However,

besides capital structure changes due to capital adequacy regulations and negative production shocks, changes in loan supply can be explained within the context of macroeconomic shocks— interest rate, exchange rate, and public sector borrowings shocks.

#### **2.4.4 Legal and regulatory framework**

The regulatory and legal framework influences the functional efficiency of banking institutions and there defines financial stability. In the reform process, financial stability is identified as a prerequisite for successful financial liberalization. Financial instability, with unsound and improperly supervised lending practices, increases the risk premium charged on loan rates and widens the spread. This is because weak supervision gives rise to moral hazard and adverse selection problems. With adequate supervision an increase in interest rates results in banks' rationing credit instead of taking new borrowers. However, regulatory differences across financial institutions destabilize the financial sector by diverting intermediation into the informal, less regulated and less taxed part of the sector.

The legal framework incorporates the adequacy of commercial law and the efficiency with which the judicial system makes and enforces legal decisions. Weaknesses in enforcement of financial contracts create credit management problems and the premium charged on credit increases. This is because banks are unable to make agreements that limit the ability of borrowers to divert funds away from the intended purpose, to disclose accurate information on borrowers, and to write easily enforceable legal contracts. On the other hand, a weak legal system without clearly spelled out property rights denies the diversity of institutions a chance to diversify risk. Banks have no incentive to invest in information and human capital, which propels the information asymmetry problem. In their study, Demirguc-Kunt and Huizinga (1997) found that better contract enforcement, efficiency of the legal system and lack of corruption are associated with lower realized interest margins. This is because of the reduced risk premium attached to the bank lending rate. As Fry (1995) explains, liberalization in the presence of inadequate prudential supervision and regulation magnifies the impact of exogenous shocks by

accommodating distress borrowing. Notable is that in developing countries, regulations exist on paper but in practice they are not enforced consistently and effectively.

A deposit insurance scheme is instituted to protect the depositors and maintain the stability of the financial sector. However, insurance (explicit or implicit) promotes moral hazard and adverse selection problems. Fry (1995) argues that adverse selection arises with deposit insurance schemes, especially if they are accompanied with high macro instability. On the other hand, banks never seek to reduce adverse selection in credit rationing, especially if there is a positive relationship between instability and returns on alternative banking financed projects. With protection for depositors provided, banks choose riskier lending strategies especially if macro instability produces strongly correlated outcomes. Therefore, in setting up explicit insurance schemes, the banking system must be fairly stable, prudential regulation and bank supervision effective, and funding for the depository fund adequate. Also, the fund should have the necessary backup support that may be required to get the system through a period of stress.

#### **2.4.5 Taxation**

Both implicit and explicit taxes influence bank lending rate as they increase the intermediation costs. These include: reserve requirement, withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees. Reserve and liquidity requirements, mandatory investment levels, and interest controls are categorized as implicit taxes. A reserve requirement with no interest payment tends to have a higher opportunity cost as it squeezes the excess reserve available for banks to advance credit, reducing the bank's income earning asset. However, Fry (1995) observes that the impact of a reserve requirement will depend on the elasticity of loan and deposit interest rates. On the other hand, mandatory investment, where banks continue providing funds to priority sectors despite the rate of return, squeezes the bank profit margin if the sector's investment yield is low. And interest rate controls limit the bank's efforts to capture high yielding investments. Explicit taxes, just like the implicit taxes on the financial intermediation process, may provide a negative effective protection to the domestic financial system and encourage, financial intermediation abroad especially if there is tax

discrimination. Discriminatory taxation of financial intermediation reduces the flexibility of the system by significantly reducing the funds for discretionary lending. Tax discrimination also leads to financial sector instability by driving intermediation into the informal, less regulated and less taxed part of the market. The presence of explicit and implicit taxes also discourages the development of the inter-bank market, which can play a major role in improving resource allocation and the effectiveness of monetary policy. With heavy taxation at the interbank market, all financial transactions make short-term overnight borrowing uneconomical, and increase the reliance on central bank discount facilities that provide inexpensive and unlimited loans to banks in need of funds. In case the discount facility is restrictive, however, and then banks may face liquidity problems and be forced to offer attractive deposit rates to attract more deposits. Conversely, interest ceilings prevent banks from negotiating terms of inter-bank loans and insufficient penalties for shortfalls in required reserves. Barajas et al. (1996) and Demirguc-Kunt and Huizinga (1997) saw a positive relationship between high interest rate spreads and high levels of taxation of the intermediation.

#### **2.4.6 Risk factors**

Banks are exposed to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty, information asymmetry and the policy environment. For example, when banks hold unmatched maturities of loans they are exposed to interest rate risk. This is especially so when banks raise funds through short-term deposits to finance long-term loans or purchase security with longer maturity. Interest rate risk is also defined by variability of the market interest rate.

Banks are exposed to credit risk due to information asymmetry. Banks do not know *ex ante* the proportion of loans that will perform and even when they carry out appraisals, credit losses are not fully eliminated. To cover credit risk, banks charge a premium whose size depends on the bank credit policy, interest on alternative assets, amount borrowed, and type of client and size of collateral. This increases the effective rate paid by borrowers and reduces the demand for loans.



Foreign exchange risk arises especially when banks fund themselves abroad, while legal risk is faced when the legal framework for collateral and bankruptcy is not clear. Liquidity risk arises if depositors demand to withdraw their funds and leave the banks with insufficient reserves (for example during a bank run customers withdraw their deposits in response to their loss of confidence with the bank).

## **2.5 Research Gap**

Studies have shown that there is a relationship between lending interest rates and the performance of banks. However, the evidence has been contrasting as the effect has not been conflicting. Earlier treatment of the issue provided by Samuelson (1945) indicates that under general conditions, bank profits increase with rising interest rates. The banking system as a whole is immeasurably helped rather than hindered by an increase in interest rates (Samuelson, 1945, 25). A more accurate measurement of how fluctuations in market interest rates affect banking firms largely depends on the sensitivity of banks' assets and liabilities (interest rates and volume) toward variations in open market rates.

The imbalance of adjustment of asset and liability rates toward changes in market rates significantly affects the value of bank equity. Numerous studies focus on the level of interest rate risk, i.e., uncertainty in banks' profitability, which is due to the imbalance of sensitivity of assets and liabilities of commercial banks toward changes in market interest rates (Madura and Zarruk, 1995). Prior studies in Kenya have dwelt more on the interest rate spread without specific reference to the nature of relationship between lending interest rate and performance of commercial banks listed on the Nairobi Stock Exchange (Mwingi, 2002; Kilonzo, 2003; Kimutai, 2003; Kilongosi, 2005).

The impulse response functions show that low and lagged response of lending rates contribute to the decline in banking spread following an increase in money market rates, thus, adversely affecting banking activities. Contrary to the above-mentioned findings, in Malaysia the high level of interest rates hindered banks' profitability. The study therefore seeks to unravel whether the phenomenon observed in the developed nations is true by investigating the impact of interest rate on banks' performance in Kenya (developing country).

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presented the research design, sampling methods, and techniques used in data collection and analysis. This chapter presented the methodology that was used to carry out the study. This included the study design, target population, data collection tools to be used and data collection technique, and data analysis method and presentation.

### **3.2 Research Design**

This study used a descriptive survey. A descriptive study attempts to describe or define a subject, often by creating a profile of a group of problems, people, or events, through the collection of data and tabulation of the frequencies on research variables or their interaction, (Cooper and Schindler, 2006). In this case, the research problem was factors determining lending interest rates in commercial banks. Descriptive research is more rigid than an exploratory research and seeks to describe uses of a product, determine the proportion of the population that uses a product, or predict future demand for a product. A descriptive research should define questions, people surveyed, and the method of analysis prior to beginning data collection.

### **3.3 Population of Study**

Target population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well defined or set of people, services, elements, events, group of things or households that are being investigated. The population of this study consisted of all 44 commercial banks in Kenya and therefore carried out a census survey (Banking Supervisory Report, 2011).

### **3.4 Data collection**

The study used both primary and secondary data sources in gathering data for analysis. The primary data was collected using semi-structured questionnaires. Questionnaires was considered to collect qualitative data because they are cheap, respondents are given time to fill-in the questionnaires, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile

data. The questionnaires were both open and close-ended questions (Munn and Drever, 2004) and will be administered through drop and pick to financial managers from the commercial banks comprising 44 respondents. Secondary data was collected from journals and report from commercial banks and Central Bank of Kenya on financial statements and interest rate of commercial banks in Kenya for the last five years from 2006 -2010 (CBK.2010)

### **3.5 Validity and Reliability**

According to Rousson, Gasser and Seifer (2002), validity is the degree by which the sample of test items represents the content the test is designed to measure. Content validity which is employed by this study and is a measure of the degree to which data to be collected using a particular instrument represents a specific domain or content of a particular concept (Gillham, 2008). To establish the validity of the research instrument the research will seek the opinions of experts in the field of the study especially the researcher's supervisor.

According to Rousson, Gasser and Seifer (2002), reliability refers to the consistency of measurement and is frequently assessed using the test–retest reliability method. The questionnaire was piloted from 15 credit officers from commercial bank which was not included in the study sample. This helped in correcting any ambiguity in the questionnaire and enabled the study to collect the relevant information to answer the research questions. The pre test was conducted to enhance clarity of the questionnaires.

Reliability was obtained by correlating the scores of each questionnaire for each variable. Pearson product moment correlation coefficient (r) was used to test reliability of the questionnaire. The correlation coefficient of the halves was correlated by Spearman Brown Prophecy formula .The pre-test was conducted to enhance clarity of the questionnaires. The following formula was used to get the coefficient that was the reliability estimate.

$$R_{xx1} = \frac{S_1^2}{S_x^2}$$

Where  $x$  = Performance on the First Measurement

$X_1$  Performance on 2<sup>nd</sup> measurement

$R_{xx1}$  = Correlation coefficient between  $x$  and  $x_1$

$S_1^2$  = Estimate variance of the true Score

$S_{x2}$  = Calculated variance of the observations

$R_{xx}^1 = ?$

The questionnaires was considered reliable if the value for  $R_e$  is closer to 1.0 getting consistent responses when the same question was posed to the same respondent more than once.

### **3.6 Data Analysis**

The collected data was thoroughly examined and checked for completeness and comprehensibility. The data was then be summarized, coded and tabulated. Descriptive statistics such as means, standard deviation and frequency distribution was used to analyze the data. Data was coded and entered into the Statistical Package for Social Sciences (SPSS 17) for analysis. SPSS was used to perform the analysis as it aids in organizing and summarizing the data by the used of descriptive statistics such as tables. Data presentation was done by the use of pie charts, bar charts and graphs, percentages and frequency tables. The inferential statistic regression and correlation was done to establish the extent to which commercial banks determine factors influencing lending rates. Factor analysis was carried out to establish factors commercial banks influencing determination of bank lending rate.

A linear regression model of bank lending rate versus factors influencing lending rates for the commercial banks was applied to examine the relationship between the variables. The model treats lending rate for the commercial bank as the dependent variable while the independent variables was factors influencing the determination of lending rates which include Market structure Cost of funds, Economic Conditions and Legal and regulatory framework

The response on factor influencing lending rate was measured by computing indices based on the responses derived from the Likert-Scaled questions. The relationship equation was represented in the linear equation below.

$$Y (\text{Bank Lending Rates}) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where

Y= Bank Lending Rates

$\alpha$  = Constant Term

$\beta_1$ = Beta coefficients

$X_1$ = Market structure

$X_2$ = Cost of funds

$X_3$ = Economic Conditions

$\epsilon$  = Error Term

## CHAPTER FOUR

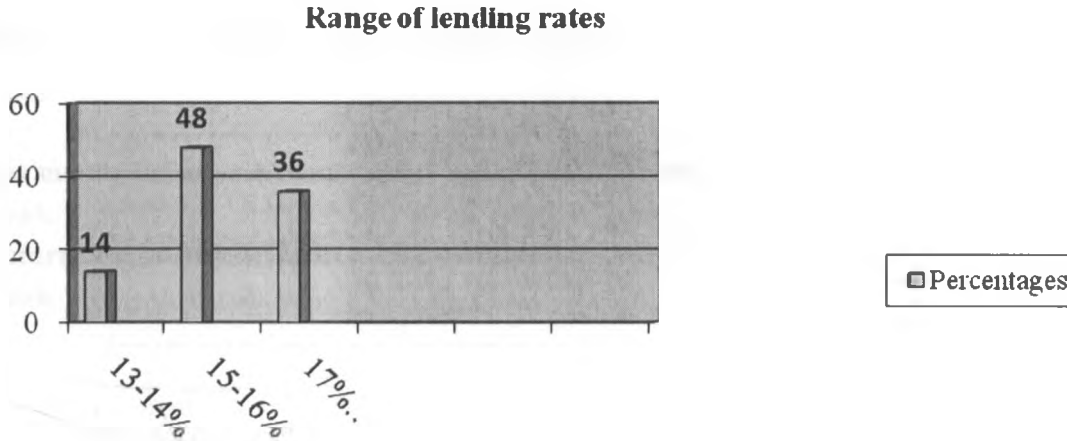
### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.0 Introduction

This chapter discussed the interpretations and presentations of the findings based on the objective of the study which were to establish factors determining lending rates of commercial banks in Kenya. This chapter focused on data analysis, interpretation and presentation and presents the discussion and conclusion of the study. The study population was 44 where 41 respondents responded and returned the questionnaires constituting to 90% response rate. Mugenda and Mugenda (2003) indicated a respondent rate of 50%, 60% or 70% is sufficient for a study and therefore a respondent rate of 90% for this study was very good.

#### 4.1 General information

**Figure 4. 1: Range of lending rates**



The study sought the range of lending rates the bank had adopted in the bank. From the findings most commercial bank had lending rate ranging from 15-16%, 36% of the commercial bank had lending rate ranging from 17% and above, 14% of commercial

bank had lending rates ranging from 13-14% lending rates . This clearly indicated that majority of the commercial banks had their lending rate ranging between 15-17% .

#### 4.1.1 Extent had financial liberalization influence commercial bank lending rate

**Table 4. 1: liberalization influence commercial bank lending rate**

Statement	Yes	Percent
Very great Extent	38	93.0
Great Extent	30	75.0
Moderately Extent	28	69.0

The study sought extent to which financial liberalization influenced commercial bank lending rate. From the findings, 93% of the respondents indicated that financial liberalization influence commercial bank lending rate to a very great extent, 75% of the respondents indicated that financial liberalization influence commercial bank lending rate to a great extent while 69% of the respondents indicated that financial liberalization influenced commercial bank lending rate to a moderately extent. The respondents explained that liberalization of the market influenced business operations and influenced market conditions of the businesses and greatly influenced the lending rates of commercial banks.

#### 4.2 Factors that mostly influences commercial banks lending rates in your commercial bank

**Table 4. 2: Factors that mostly influences commercial banks lending rates in your commercial bank**

Statement	Yes	Percent
Better contract enforcement	32	80.0
Efficiency of the legal system	27	67.5
Lack of corruption	23	56.8
Deposit insurance scheme	20	51.0
Prudential regulation and bank supervision	39	96.0

The study sought the factor that mostly influenced commercial banks lending rates .from the findings, 96%, 80.0% and 67.5% of the respondents indicated that prudential

regulation and bank supervision, better contract enforcement and Efficiency of the legal system were the factors that mostly influenced commercial bank lending rates in banks. The study also found that 56.8% and 51% of the respondents indicated that lack of corruption and deposit insurance scheme were factors that greatly influenced lending rate in commercial banks. This implied that prudential regulation and bank supervision, better contract enforcement and efficiency of the legal system were the most influential factors that influences commercial banks lending rates in commercial banks

#### **4.3 Cost factors that influence determination of lending rates in commercial banks in Kenya.**

**Table 4. 3: Cost factors that influence determination of lending rates**

Statement	Mean	St Dev
Statutory reserve requirement	4.40	0.43
Core liquid asset requirement	4.68	0.87
Central Bank of Kenya supervisory fee	4.54	0.98
Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees	4.77	0.64
Weighted average deposit rate ,Reserve and liquidity requirements, mandatory investment levels,	4.00	0.60
Management fees	4.30	0.78
Staff costs	4.12	0.83
Transaction costs	4.55	0.69
Communication costs	3.67	0.44
Costs of provisioning	4.75	0.76
Projected profit	4.01	0.54
Cost of capital (return on equity).	4.50	0.71
Internal cash reserves	3.54	0.84

The study sought the extent to which cost factors influenced determination of lending rates in commercial banks in Kenya. From the findings, majority of the respondents strongly agreed that Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees ,Costs of provisioning ,core liquid asset requirement, transaction costs, Central Bank of Kenya



supervisory fee , cost of capital (return on equity) as indicated by a mean of 4.77, 4.75 .4.68, 4.55, 4.54 and 4.50.The study found that respondents agreed that Statutory reserve requirement , Management fees , Staff costs and that weighted average deposit rate ,reserve and liquidity requirements, mandatory investment levels,4.40,4.30, 4.12 and 4.00. The study further found that respondents agreed that communication costs and internal cash reserves as indicated by a mean of 3.67 and 3.54.The clearly implied that costs factors such as taxes, transactions, cost of capital (return on equity) Statutory reserve requirement, Management fees, Staff costs and that weighted average deposit rate, reserve and liquidity requirements, mandatory investment influenced determinations of lending rates in commercial banks assets and liquidity requirements.

**4.3.1 What factors generally contribute to the cost of loans**

The respondents were requested to indicate the factors that contribute to the cost of loans. From the finding majority of the respondents indicated that profit projects, transactions costs, staff remunerations, management fee and tax fees. The study further found that cost of loan was influenced by the CBK supervisory fees, salary of the staff and administration costs.

**4.4 Inflation factors that influence determination of lending rates in commercial banks in Kenya.**

**Table 4. 4: Inflation factors that influence determination of lending rates**

Economic Conditions	Mean	St Dev
T-bill/GRZ bond rates	3.45	0.89
Inflation	4.78	0.87
Foreign Exchange rate	4.53	0.89

The study sought the influence of economic factors influencing determination of lending rate in commercial banks. From the findings, majority of the respondents strongly agreed

that inflation conditions, and foreign exchange rates as indicted by a mean of 4.78 and 4.53 with a standard deviation of 0.87 and 0.89 respectively. The study also found that respondents agreed to a moderate extent that T-bills /GRS bond rates influenced lending rates as indicated by a mean of 3.45 with a standard deviation of 0.89. This implied that economic status in the market influenced determination of lending rates in commercial banks.

#### 4.5 Market factors Influencing lending Rates

**Table 4. 5: Market factors Influencing lending Rates**

Market Conditions	Mean	St dev
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty.	4.53	0.79
Liquidity premium or Excess Liquidity in the Inter-Bank Market	4.51	0.83
Competition leading to Interbank rate	4.56	0.53
Overnight facility rate	3.55	0.62
Policy rate that is linked to the Open Market Operations	3.89	0.85
Demand and supply	4.32	0.66
Industry trend	4.21	0.87
Market expectations	3.65	0.59
Interbank rate	4.58	0.98

The study sought the market conditions influencing lending rate in commercial banks. From the findings, majority of the respondents strongly agreed that interbank rate , competition leading to Interbank rate and that credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty. 4.58, 4.56 and 4.53. The respondents agreed that demand and supply,

Industry trend and that Policy rate that was linked to the Open Market operations 4.32, 4.21 and 3.89. The study further found that respondents agreed that market expectations and overnight facility rate influenced determination of lending rate of commercial banks 3.65 and 3.55.

#### 4.5.1 Effects of banking industry competition on commercial banks adjusting to lending rates

The respondents indicated that commercial bank adjust lending rate according to competitions further indicating that lending rates of commercial banks rigid where the market was more concentrated and competition was high. The respondents also indicted that competition constrained effective monetary policies and influenced market pricing in determining loan and deposits rates.

#### 4.5.2 Lending rates in the commercial banks

**Table 4. 6: Lending rates in the commercial banks**

Commercial lending rates issues	Mean	St dev
Commercial bank Interest rate spread influence the lending rate to borrowers	4.60	0.81
Changes in the values of commercial bank interest rate contributes to changes on commercial bank financial performance	4.57	0.63
During periods of relatively high lending interest rates, loans advanced fall sharply	4.71	0.74
There is a relationship between the unexpected changes in the long-term interest rate and rate of inflation affecting lending rates	4.47	0.80
Interest rate ceilings affect borrowers who may be looking for higher amounts than the one offered by the commercial banks	4.35	0.53

The study sought the influence of lending rate in commercial banks .From the findings, majority of the respondents strongly agreed that during periods of relatively high lending

interest rates, loans advanced fall sharply, Commercial bank Interest rate spread influence the lending rate to borrowers and that changes in the values of commercial bank interest rate contributes to changes on commercial bank financial performance 4.71,4.60 and 4.57 with a standard deviation of 0.74,0.81 and 0.63 respectively. The study also found that there was a relationship between the unexpected changes in the long-term interest rate and rate of inflation affecting lending rates and that interest rate ceilings affected borrowers who may be looking for higher amounts than the one offered by the commercial banks as indicted by a mean of 4.47 and 4.35 with a standard deviation of 0.80 and 0.53 respectively. The clearly implied that lending rates influence the extent to which commercial banks influences lending operations affecting the financial performance.

### 4.5.3 Type of loan interest rate practice in the bank

**Table 4. 7: Type of loan interest rate practice in the bank**

Statement	Yes	Percent
Float interest rates	26	64
Fixed interest rate	24	58
Both	35	87

The study sought the type of loan interest rate practices in commercial bank. From the findings, majority 87% of the respondents indicated that commercial banks offers both float and fixed interest rate , 64% of the respondents indicated that commercial banks offers float interest while 58% of the respondents indicated that commercial banks offers fixed interest rates . This implied that commercial banks offers float and fixed interest rates .From the findings, majority 85% of the indicted that float interest rates contribute more to loan defaults, 51% of the respondents indicated that fixed interest rate contribute to high more to loan defaults while only 23% of the respondents indicated that where both float and fixed interest rate contribute more to the loan defaulting. This implied that floating interest rate contribute loan defaults in commercial banks

#### 4.5.4 Cost of loans increase non-performance of loans in Kenya

The study sought how the cost of loans increases non performing loans in Kenya. From the findings, the respondents explained that high cost of loans influenced commercial banks raising the lending rates to the customers making the loan to be expensive. This makes customers to find difficulties in repayment of their loans for a period of three months resulting to non performing loans.

#### 4.6 Effects of Lending Rate

Table 4. 8: Effects of Lending Rate

Lending rates	Mean	Std Dev
Lending Rate dictates the profitability of the bank	4.67	0.72
Lending Rate induces competition from other financial institutions	4.50	0.56
Lending Rate affects feasible investment opportunities with future growth potential	4.39	0,78
Changes in loan supply is greatly influenced lending rates in by commercial bank	4.58	0.98

The study sought the extent to which lending rates affects financial performance of the banks. From the findings, respondents indicated that Lending Rate dictates the profitability of the bank, influence changes in loan supply and induced competition from other financial institutions to a very great extent as indicted by a mean of 4.67, 4.58 and 4.50. The study also found that Lending Rate affects feasible investment opportunities with future growth potential as indicted by a mean of 4.39 with a standard deviation of 0.78.

#### 4.6.1 Lending rate for commercial bank in Kenya

**Table 4. 9: Lending rate for commercial bank in Kenya**

Banks	Lending rate (%)
African Banking Corporation	19
Bank of Africa Ltd	17
Bank of Baroda	15.0
Bank of India	15.50
Barclays Bank of Kenya Ltd	17.0
CFC Stanbic Bank Limited	17.50
Charterhouse Bank Limited	15.0
Chase Bank Limited	19
Citibank N.A.	15.0
Commercial Bank of Africa	16.0
Consolidated Bank of Kenya	14.0
Co-operative Bank of Kenya	15.0
Credit Bank Limited	17.0
Development Bank of Kenya	15.0
Diamond Trust Bank Kenya	15.50
Dubai Bank Limited	20
Ecobank	16.0
Equatorial Commercial Bank	15.50
Equity Bank Limited	15.50
Family Bank Ltd	15.0
Fidelity Commercial Bank	15.5
Fina Bank Limited	16.0
First community bank	15.0
Giro Commercial Bank	15.0
Guardian Bank	16.0
Gulf African bank	15.5
Habib AG Zurich	19
Habib Bank Limited	16.50
I&M Bank	17.0
Imperial Bank Limited	16.0
Jamii bora Bank	16.0
Kenya Commercial Bank Ltd	17.5
K-REP BANK	14
Middle East Bank of Kenya	15
National Bank of Kenya Ltd	15
Credit Bank	16

Oriental Commercial Bank	15
Paramount-Universal Bank	15
Prime Bank Limited	16
Standard Chartered Bank Ltd	20.75%
Transnational Bank Limited	16.0
UBA Kenya bank Ltd	16.50
Victoria Commercial Bank	15.0

## 4.7 Factor Analysis

### 4.7.1 Communalities

	Initial	Extraction
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty	1.000	.945
Competition leading to Interbank rate	1.000	.916
Overnight facility rate	1.000	.912
Market expectations	1.000	.994
Interbank rate	1.000	.922
Liquidity premium or Excess Liquidity in the Inter-Bank Market	1.000	.883
Sound credit risk Management practices are built on a good quality portfolio management	1.000	.838
Foreign Exchange rate	1.000	.804
Encountering competitions in the Marketing improve Mortgage firms investment yielding to yield high performance	1.000	.660
Inflation	1.000	.878
Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees	1.000	.939
T-bill/GRZ bond rates	1.000	.573
Market liberations leads to improvement of the mortgage financing	1.000	.891
Transaction costs	1.000	.842
Statutory reserve requirement	1.000	.803

Extraction Method: Principal Component Analysis.

The above table helps the researcher to estimate the communalities for each variance. This is the proportion of variance that each item has in common with other factors. For example market expectations has influence commercial lending rate as indicated by 99.4% communality or shared relationship with other factors that influencing lending rates in Kenya. This value has the greatest communality with others, while 'T-bill/GRZ bond rates have the least communality or relationship with others of 57.3%.

#### 4.7.2 Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.578	26.930	26.930	4.578	26.930	26.930	3.111	18.302	36.302
2	3.659	21.525	48.455	3.659	21.525	48.455	2.699	15.877	44.179
3	2.178	12.814	61.270	2.178	12.814	61.270	2.440	14.356	68.535
4	1.567	9.216	70.486						
5	1.328	7.809	78.295						
6	1.120	6.586	84.881						
7	.788	4.636	89.518						
8	.703	4.135	93.652						
9	.472	2.778	96.430						
10	.327	1.921	98.351						
11	.135	.791	99.443						
12	.087	.511	99.653						
13	.046	.269	99.922						
14	.013	.078	100.000						
15	-	-	100.000						
	6.508 E-16	3.828 E-15							

Extraction Method: Principal Component Analysis.

In the above table, the researcher used Kaiser Normalization Criterion, which allows for the extraction of components that have an Eigen value greater than 1. The principal component analysis was used and three factors were extracted. As the table shows, these three factors explain 68.88% of the total variation. Factor 1 contributed the highest variation of 36.302%. The contributions decrease as one move from one factor to the other up to factor 3.



### 4.7.3 Component Matrix (a)

	Component	2	3
	1	2	3
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty	.842		
Competition leading to Interbank rate	.711		
Overnight facility rate	.696		
Market expectations	.650		.619
Interbank rate	.599	.322	
Liquidity premium or Excess Liquidity in the Inter-Bank Market	.599		
Sound credit risk Management practices are built on a good quality portfolio management	.586	.459	.338
Foreign Exchange rate	.582	.553	
Encountering competitions in the Marketing improve Mortgage firms investment yielding to yield high performance	.564	.468	
Inflation	.477	.459	
Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees	.372	.779	.354
T-bill/GRZ bond rates	.337	.736	.472
Market liberations	0.713		
Transaction costs		.610	.400
Statutory reserve requirement		.593	.668
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty	.306		.566
Competition leading to Interbank rate	.354		.346

Extraction Method: Principal Component Analysis.

a 3 components extracted.

#### 4.7.4 Rotated Component Matrix (a)

	1	2	3
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty	.915		
Competition leading to Interbank rate	.795		
Overnight facility rate	.740	.407	
Market expectations	.668		.417
Interbank rate		.857	
Liquidity premium or Excess Liquidity in the Inter-Bank Market		.822	
Management fees		.708	
Foreign Exchange rate			.481
Encountering competitions in the Marketing improve Mortgage firms investment yielding to yield high performance	.913		
Inflation			.829
Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees		.683	
T-bill/GRZ bond rates		0.698	
Transaction costs		0.790	
Statutory reserve requirement		0.702	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 15 iterations.

The initial component matrix was rotated using Varimax (Variance Maximization) with Kaiser Normalization. The above results allowed the researcher to identify what variables fall under each of the 3 major extracted factors. Each of the 15 variables was looked at and placed to one of the 6 factors depending on the percentage of variability; it explained the total variability of each factor. A variable is said to belong to a factor to which it explains more variation than any other factor.

From the findings, the study group the factors determining lending rate basing on the factors that loads to try and identify common factors determining lending rate in

commercial bank .The variables that loads highly on Factor 1 all seems to relates to marketing conditions of the commercial banks and therefore Factor 1 is therefore label as market factors. The questions that relate highly on factor 2 all relates on costs of administration of the loans and so Factor 2 is therefore labeled cost Factors. The questions relate to what economic factors influence determining of lending rate for the commercial banks and therefore label Factor 3 Economic Factors.

From the above table, the individual variables constituting the six factors extracted are summarized and identified below-

### **Factor 1: Market Factors**

Risks  
Market expectations  
Interbank rate  
Overnight facility rate  
Market liberations

### **Factor 2 Cost Factors**

Taxation  
Transaction costs  
Statutory reserve requirement  
Management fees

### **Factor 3 Economic factor**

T-bill/GRZ bond rates  
Inflation  
Foreign Exchange rate

## **4.8 Regression Analysis**

A multivariate regression model was applied to determine the factors determining lending rate in commercial banks

The Linear regression used in this model was:

$$Y (\text{Bank Lending Rates}) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where

Y= Bank Lending Rates

$\alpha$  = Constant Term

$\beta_1$ = Beta coefficients

$X_1$ = Market Factors

$X_2$ = Cost of funds

$X_3$ = Inflation

$\epsilon$  = Error Term

**Table 4. 10 : Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.083(a)	.698	.718	0.34	1.741	6	.207	8.191	.001(a)

a Predictors: (Constant) Market structure, Cost of funds, Inflation

Dependent: Lending Rates

Adjusted  $R^2$  is called the coefficient of determination which indicates how commercial bank lending rates varies with variation in factors determining lending rates for commercial banks includes market factors, cost of fund and inflation. From table above, the value of adjusted  $R^2$  is 0. 718. This implies that, there was a variation of 71.8% of lending rates with variation in factors determining lending rates of commercial banks which was statistically significance with P-Value of 0.01 which was less than 0.05 at a confidence level of 95%.

## ANOVA (b)

**Table 4. 11: ANOVA (b)**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.841	5	.307	5.191	0.01(a)
	Residual	7.714	76	.059		
	Total	11.556	81			

a Predictors: (Constant) market factors, cost of fund and Inflations

Dependent: Lending Rates

Regression, Residual, and Total. The Total variance was the difference into the variance which can be explained by the independent variables (Model) and the variance which was not explained by the independent variables (Error).

The strength of variation of the predictor values influence the determination of lending rates dependence variable at 0.01 significant levels.

## Coefficients (a)

**Table 4. 12: Coefficients (a)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.000	.375		3.640	0.01
	Market Factor	0.981	.495	.857	2.931	0.03
	Cost of fund	0.917	.646	.792	2..803	0.04
	Inflation	0.768	.428	.691	1.906	0.02

a Predictors: (Constant) Market factor, Cost of fund, and Inflation

Dependent: lending Rate

$$Y = 7.000 + 0.981 X_1 + 0.917X_2 + 0.768X_3-$$

From the above regression model, it was found that lending rate of commercial banks would be at 7.000 holding, market factors, cost of funds and inflation constant at Zero. Increase in markets factors such as credit risks, competitions change in industrial trends and increase interbank rate would lead to an increase in lending rate by a factor of 0.981 with P value of 0.003. An increase in cost of fund (loan) such as increase in management fees, taxes, salaries of staff would lead to an increase in lending rate by 0.917 while a unit increase in inflation would lead to a increase in lending factors for commercial banks by a factor of 0.768 with P value of 0.004.

This clearly indicates that there existed a positive relationship This between lending rate and factor determining lending rate for the commercial banks which included market factors such as competitions and risks, cost of fund such as salary of the staff and management fees and inflation due to economic changes in the country.

## CHAPTER FIVE:

### 5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary

The study revealed that majority of the commercial banks had their lending rate ranging between 15-17% .The study established that prudential regulation, bank supervision and better contract enforcement most influential factors influencing commercial banks lending rates in commercial banks

From the findings, study revealed that Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees ,Costs of provisioning ,core liquid asset requirement, transaction costs, Central Bank of Kenya supervisory fee , cost of capital (return on equity) were cost factors that greatly influenced determination of lending rate in commercial bank

The study found that Statutory reserve requirement , Management fees , Staff costs and that weighted average deposit rate ,reserve and liquidity requirements and mandatory investment levels required by the Central bank of Kenya also influenced the cost of loans from the commercially banks and therefore factor in determination of lending rates.

The study revealed that inflation conditions, and foreign exchange rates as well as T-bills /GRS bond rates influenced lending rates in commercial banks.

The study established that interbank rate , competition among Interbank rate , credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as well as demand and supply, Industry trend and that Policy rate that was linked to the Open Market operations influenced determination of lending rate of commercial banks .

The study revealed that cost of loans increases non performing loans in Kenya as high cost of loans influenced commercial banks raising the lending rates to the customers making the loan to be expensive and difficulties in repayment of their loans for a period of three months resulting to non performing loans.

From the above regression model, the study established that Increase in markets factors such as credit risks, competitions change in industrial trends and increase interbank rate would lead to an increase in lending rate by a factor of 0.981 with P value of 0.003. An increase in cost of fund (loan) such as increase in management fees, taxes, salaries of staff would lead to an increase in lending rate by 0.917 while a unit increase in inflation would lead to a increase in lending factors for commercial banks by a factor of 0.0.768 with P value of 0.004. This clearly revealed that that there existed a positive relationship between lending rate and factor determining lending rate for the commercial banks which included market factors such as competitions and risks, cost of fund such as salary of the staff and management fees and inflation due to economic changes in the country.

## **5.2 Conclusion**

The study concluded that cost of fund (loans) determined by Taxation Costs of provisioning ,core liquid asset requirement, transaction costs, Central Bank of Kenya supervisory fee , cost of capital (return on equity) greatly influenced determination of lending rate in commercial bank

The study concluded that other costs that determine the lending rate of commercial banks included the Statutory reserve requirement , Management fees , Staff costs and weighted average deposit rate ,reserve and liquidity requirements and mandatory investment levels required by the Central bank of Kenya .

The study concluded that inflation conditions, demand for loans, macroeconomic environment and poor economic growth, foreign exchange rates and T-bills /GRS bond rates influenced lending rates in commercial banks.



The study concluded that interbank rate, competition among Interbank rate , credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as well as demand and supply, Industry trend and that Policy rate that was linked to the Open Market operations influenced determination of lending rate of commercial banks .

The study concluded that there existed a positive relationship between lending rate and factor determining lending rate for the commercial banks which included market factors such as competitions and risks, cost of fund such as salary of the staff and management fees and inflation due to economic changes in the country.

### **5.3 Policy Recommendation**

Given the findings from this study, there are a number of policy recommendations that can be adopted by the commercial banks Management in determining lending rates .A policy recommendation is simply written policy advice prepared for some group that has the authority to make decisions. The Commercial banks policy recommendations are the key indicators through which Commercial banks policy decisions will be made in most levels of banks

From the findings and conclusion, the study recommend that commercial bank should consider cost of fund (loans) which included taxation costs of provisioning ,core liquid asset requirement, transaction costs, Central Bank of Kenya supervisory fee , cost of capital (return on equity), Statutory reserve requirement , Management fees , Staff costs and weighted average deposit rate ,reserve and liquidity requirement to determine lending rate in commercial bank at an acceptable level.

Lending was the core business operation for the banks and therefore the study recommend that commercial banks management should determine lending rates considering inflation conditions, demand for loans, macroeconomic environment and economic status

The study recommended that management of commercial banks and credit departments should determine the lending rate based on interbank rate, competition of Interbank rate, credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as well as demand and supply, Industry trend and that Policy rate that was linked to the Open Market operations to effectively determine the lending rate of commercial banks' loans to the customers..

The study recommended that commercial banks should be keen of market factors such as competitions and risks, cost of fund such as salary of the staff and management fees and inflation due to economic changes in the country when determining lending rates as there existed a positive relationship between lending rate and factor determining lending rate for the commercial banks.

#### **5.4 Limitations of the study**

The main limitation of study was inability to include more financial institutions and was limited to commercial banks. The study would have covered more financial institutions across banking sectors so as to provide a more broad based analysis. However, resource constraints placed this limitation.

The study also faces challenges of time resources limiting the study from collecting information for the study particularly where the respondent delay in filling the questionnaire and travelling for collection the filled questionnaire.

The respondents were found to be uncooperative from the respondents because of the sensitivity of the information required for the study. The researcher explained to the respondents that the information they provided was to be held confidential and was only for academic purpose only.

#### **5.5 Recommendations for further study**

The study investigated the determination of lending rate in commercial banks .A further research should be carried to determine impact of lending rates on profitability of

commercial banks to established the extent to which the commercial banks influence profitability of the commercial banks

The study also recommends that a further study should be carried out to determine the effects of market factors, costs of loans and inflation of financial performance of commercial banks

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## APPENDICES

### Appendix 1: QUESTIONNAIRE

1. Kindly indicates the range of lending rates your bank has adopted in your bank.

7-8% [ ]

9-10% [ ]

11-12% [ ]

13-14% [ ]

15-16% [ ]

17% and above [ ]

Give reasons or your

answer.....

2. To what extent has financial liberalization influence commercial bank lending rate ?

i. Very great Extent [ ]

ii. Great Extent [ ]

iii. Moderately Extent [ ]

iv. Less Extent [ ]

v. No Extent [ ]

Explain

your

answer.....

..

3. Which of the following factors mostly influences commercial banks lending rates in your commercial bank? (Tick any three).

i. Better contract enforcement [ ]

ii. Efficiency of the legal system [ ]

iii. Lack of corruption [ ]

iv. Deposit insurance scheme [ ]

v. Prudential regulation and bank supervision [ ]

4. The following are cost factors that influence determination of lending rates in commercial banks in Kenya. To what extent do the following cost factors influence lending rate in commercial banks? (1-means strongly disagree, 2-disagree, 3-neutral, 4-agree and 5- strongly agree).

Statement	1	2	3	4	5
Statutory reserve requirement					
Core liquid asset requirement					
Central Bank of Kenya supervisory fee					
Taxation for the commercial banks withholding taxes, stamp duties, transaction taxes, and value added taxes, profit taxes and license fees					
Weighted average deposit rate ,Reserve and liquidity requirements, mandatory investment levels,					
Management fees and					
Staff costs					
Transaction costs					
Communication costs					
Costs of provisioning					
Projected profit					
Cost of capital (return on equity).					
Internal cash reserves					

a. In your view, what factors generally contribute to the cost of loans?

- i. ....  
...
- ii. ....  
...
- iii. ....  
...
- iv. ....  
...



5. The following are inflation factors that influence determination of lending rates in commercial banks in Kenya. To what extent do the following economic factors influence lending rate in commercial banks? (1-means strongly disagree, 2-disagree, 3-neutral, 4-agree and 5- strongly agree).

Economic Conditions	1	2	3	4	5
T-bill/GRZ bond rates					
Inflation					
Foreign Exchange rate					

6. The following are Market factors that influence determination of lending rates in commercial banks in Kenya. To what extent do the following markets factors influence lending rate in commercial banks? (1-means strongly disagree, 2-disagree, 3-neutral, 4-agree and 5- strongly agree).

Market Conditions	1	2	3	4	5
Credit risk premium due to various risks, including interest risk, credit risk, foreign exchange risk and legal risk, as a result of uncertainty.					
Liquidity premium or Excess Liquidity in the Inter-Bank Market					
Competition leading to Interbank rate					
Overnight facility rate					
Policy rate that is linked to the Open Market Operations					
Demand and supply					
Industry trend					
Market expectations					
Interbank rate					

7. What are the effects of banking industry competition on commercial banks adjusting to lending rates

i. ....  
 ....  
 .....

8. To what extent do you agree with the following statement concerning lending rates in the commercial banks? Rate on a scale of 1 to 5 (1=strongly agree 2=agree 3=no idea 4=disagree 5=strongly disagree)

Commercial lending rates issues	1	2	3	4	5
Commercial bank Interest rate spread influence the lending rate to borrowers					
changes in the values of commercial bank interest rate contributes to changes on commercial bank financial performance					
During periods of relatively high lending interest rates, loans advanced fall sharply					
There is a relationship between the unexpected changes in the long-term interest rate and rate of inflation affecting lending rates					
Interest rate ceilings affect borrowers who may be looking for higher amounts than the one offered by the commercial banks					

9. Explain the effect of interest rate ceiling on the financial performance of the organization?

.....  
 .....  
 .....

10. What type of loan interest rate do you practice in your bank?

Float interest rates [ ]

Fixed interest rate [ ]

Both [ ]

11. What type of loan interest rate mentioned above contributes more to loan defaults in your bank?

Float interest rates [ ]

Fixed interest rate [ ]

Both [ ]

a. What is the reason for your answer to question 11?

i. ....

ii. ....

...

iii. ....

...

iv. ....

...

12. How does cost of loans increase non-performance of loans in Kenya?

i. ....

...

ii. ....

...

iii. ....

...

iv. ....

...

13. To what extent does interest rate spread affect financial performance of your organization?

Rate on a scale of 1 to 5 (5= Very Great; 4=Great; 3=Moderate; 2=Low; 1=Very low)

	<b>Interest rate spread</b>	1	2	3	4	5
a)	Lending Rate dictates the profitability of the bank					
b)	Lending Rate induces competition from other financial institutions					
c)	Lending Rate affects feasible investment opportunities with future growth potential					

**Lending Rate**

14. To what extent do lending rates affect financial performance of your commercial bank?

Rate on a scale of 1 to 5 (5= Very Great;4=Great; 3=Moderate; 2=Low; 1=Very low)

<b>Lending rates</b>	1	2	3	4	5
Lending Rate dictates the profitability of the bank					
Lending Rate induces competition from other financial institutions					
Lending Rate affects feasible investment opportunities with future growth potential					
Changes in loan supply is greatly influenced lending rates in by commercial bank					

### **Appendix III: List of Commercial Banks In Kenya**

1. African Banking Corporation
2. Bank of Africa Ltd
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya Ltd
6. CFC Stanbic Bank Limited
7. Charterhouse Bank Limited
8. Chase Bank Limited
9. Citibank N.A.
10. Commercial Bank of Africa
11. Consolidated Bank of Kenya
12. Co-operative Bank of Kenya
13. Credit Bank Limited
14. Development Bank of Kenya
15. Diamond Trust Bank Kenya
16. Dubai Bank Limited
17. Ecobank
18. Equatorial Commercial Bank
19. Equity Bank Limited
20. Family Bank Ltd
21. Fidelity Commercial Bank
22. Fina Bank Limited
23. First community bank
24. Giro Commercial Bank
25. Guardian Bank
26. Gulf African bank
27. Habib AG Zurich
28. Habib Bank Limited
29. I&M Bank

30. Imperial Bank Limited
31. Jamii bora Bank
32. Kenya Commercial Bank Ltd
33. K-REP BANK
34. Middle East Bank of Kenya
35. National Bank of Kenya Ltd
36. National Industrial Credit Bank
37. Oriental Commercial Bank
38. Paramount-Universal Bank
39. Prime Bank Limited
40. Standard Chartered Bank Ltd
41. Transnational Bank Limited
42. UBA Kenya bank Ltd
43. Victoria Commercial Bank