FACTORS INFLUENCING INTEREST RATE SPREAD AMONG COMMERCIAL BANKS IN KENYA

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ABSTRACT

Banking systems have been shown to exhibit significantly and persistently large interest rate spreads on average than those in other developing and developed countries. High Interest rate Spreads are an impediment to financial intermediation, as they discourage potential savers with low returns on deposits and increase financing costs for borrowers, thus reducing investment and growth opportunities. This is of particular concern for developing and transition countries where financial systems are largely bank-based, as is the case in Kenya and tend to exhibit high and persistent spreads. The study aimed at establishing the factors influencing interest rate spread among commercial banks in Kenya. The research adopted a descriptive survey research design. The design was chosen since it was more precise and accurate since it involves description of events in a carefully planned way. The target population of this study was the management staff working at commercial banks headquarters in Nairobi. So the researcher intended to examine a sample of staff drawn from the population of 597 financial management staff working in commercial banks of the top, middle and low level management ranks at the headquarters in Nairobi. Stratified proportionate random sampling technique was used to select the sample of 234 respondents. The study used both primary and secondary panel data. Primary data was obtained through self-administered questionnaires with closed and open-ended questions. The questionnaires were distributed using the drop and pick later method. Descriptive statistics such as means, standard deviation and frequency distribution were used to analyze the data. The researcher used simple linear regression model to analyze the relationship between the independent and dependent variables. The findings were presented using tables and figures to summarize responses for further analysis and facilitate comparison. The findings were presented using tables and figures to summarize responses for further analysis and facilitate comparison. The study concluded that that market structure influence to a very greater extent interest rate spread among commercial banks in Kenya. Aspects such as market shares of loans and advances, regulated savings deposit rate, reserve requirements/provision for loan losses contributes to this factor. The study recommends that commercial banks move from their traditional mechanisms used to control credit risk, to loan portfolio restructuring and a further research should be done on the influence of the different types of interest rates on interest rate spread in Kenya.

Key Words: *Interest Rates, Commercial Banks*

INTRODUCTION

This chapter gives a brief introduction of the research study. It also looks at the profile of Commercial Banks in Kenya. The chapter explores the objectives of this study while stating the research questions which this study hopes to have answers to. The chapter also states the problem at hand and goes ahead to give the objectives of the study while at the same time giving the significance of this study.

Background Study

A key indicator of financial performance and efficiency in the banking sector is the spread between the lending and deposit rates. If the spread is large, it works as an impediment to the expansion and development of financial intermediation. This is because it discourages potential savers due to low returns on deposit and thus limits financing for potential borrowers. Put differently, there is low credit availability due to depressed savings. High lending rates on the other hand would lead to a reduction in credit demand and the money supply as a result of the high cost of borrowing (Aziakpono, Wilson and Manuel, 2005).

Banks form an important part of the financial system and are vital for economic growth. They are the main source of credit and have a direct impact on the level of investment and expenditure in an economy. Interest rates which are described as a payment from borrowers to lenders to compensate the latter for parting with the funds for a period of time and at some risk are central for both the lending and borrowing process (Howells and Bain, 2008). Both high and low interest rates affect the spread and a wide spread would be negative for credit extension.

Global Perspective

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). Interest can be thought of as "rent of money". Interest rates are fundamental to a 'capitalist society' and are normally expressed as a percentage rate over the period of one year. Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation (Emmanuelle, 2003).

Financial institutions facilitate mobilization of savings, diversification and pooling of risks and allocation of resources. However, since the receipts for deposits and loans are not synchronized, intermediaries like banks incur certain costs (Rhyne, 2002). They charge a price for the intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. The difference between the gross costs of borrowing and the net return on lending defines the intermediary costs (information costs, transaction costs (administration and default costs) and operational costs (Chand, 2002).

The magnitude of interest rate spread, however, varies across the world. It is inverse to the degree of efficiency of the financial sector, which is an offshoot of a competitive environment. The nature and efficiency of the financial sectors have been found to be the major reasons behind differences in spread in countries across the world. In economies with weak financial sectors, the intermediation costs

which are involved in deposit mobilization and channelling them into productive uses, are much larger (Jayaraman and Sharma, 2003) thus increase the spread.

Regional Perspective

In developing countries, interest rate spreads arise out of the core functions of financial institutions most especially the commercial banks which include lending and deposits taking. As banks lend, they charge interest and for attracting deposits, they offer interest on deposit as compensation for their clients' thriftiness and the difference between the two rates forms the spread. Researchers have attributed the existence of high IRS in developing countries to several factors, such as high operating costs, financial repression, lack of competition and market power of a few large dominant banks enabling them to manipulate industry variables including lending and deposit rates, high inflation rates, high risk premiums in formal credit markets due to widely prevailing perception relating to high risk for most borrowers, and similar other factors (Mujeri and Islam 2008).

Independent studies in Africa (Chand, 2002 and Asian Development Bank, 2001), have listed the several reasons for high interest rate spread. These are lack of adequate competition, scale diseconomies due to small size of markets, high fixed and operating costs, high transportation costs of funds due to expensive telecommunications, existence of regulatory controls and perceived market risks. They further state that the factors mentioned above lead to high intermediation costs, which result in high spread. Specifically, these studies have identified one of the most obvious costs, which

is associated with the ability to enforce debt contracts. Small borrowers with no property rights have no collateral to offer. As such, they are perceived as high risk borrowers. Because of high transaction costs involved, such borrowers are charged punitive rates of interest. Further, Chand (2002) singles out issues of governance. The latter encompasses maintenance of law and order and provision of basic transport and social infrastructure, all impinging on security, a lack of which has been found to be a cause for high transaction costs resulting in large intermediation costs. When there is high intermediation cost, reflected in the high interest rate spread, the borrower may be unable to repay his/her loan owing to the cost of such borrowings. This leads to a high risk of loan default hence non-performance (Ngugi, 2001).

Local Perspective

Interest rate spread is defined by market microstructure characteristics of the banking sector and the Kenya policy environment (Ngugi, 2001). Risk-averse banks operate with a smaller spread than risk-neutral banks since risk aversion raises the bank's optimal interest rate and reduces the amount of credit supplied. Actual spread, which incorporates the pure spread, is in addition influenced by macroeconomic variables including monetary and fiscal policy activities.

Two models are used to define the spread: the accounting value of net interest margin and the firm maximization behaviour. The accounting value of net interest margin uses the income statement of commercial banks, defining the bank interest rate margin as the difference between the banks' interest income and

interest expenses, which is expressed as a percentage of average earning assets. According to Njuguna and Ngugi (2000), research has criticized the accounting approach that it does not indicate if there is equilibrium in economic sense or the type of market structure generated. The firm maximization behaviour, on the other hand, allows derivation of profit maximization rule for interest rate and captures features of market structure.

Depending on the market structure and risk management, the banking firm is assumed to maximize either the expected utility of profits or the expected profits. And, depending on the assumed market structure, the interest spread components vary (Wagacha, 2001). For example, assuming a competitive deposit rate and market power in the loan market, the interest rate spread is traced using the variations in loan rate. But with market power in both markets, the interest spread is defined as the difference between the lending rate and the deposit rate.

It is evident that high spreads are bad for the performance of the economy and thus harmful on the welfare of the citizens. A developing country like Kenya whose economy is heavily reliant on primary sectors like agriculture and small enterprises for economic growth badly needed an injection of investments. High interest rates as seen above depressed savings and thus lowered the available funds for investment. The potential for growth in local enterprises was greatly underlined and the high cost of borrowing also deterred foreign investment flowing into the economy. This occurred especially when financing was being sought from the local banking system. On the whole, the wide spreads not only contributed to the poor performance of the economy, but also greatly undermined any attempts at poverty reduction. These negative effects of wide spreads on the financial sector and the rest of the economy raised major debates towards the end of 1999 onwards. According to Ndung'u and Ngugi (2007), the spreads were not only disadvantageous to savers and borrowers, but they were also detrimental at the macroeconomic level. This is because they contributed to inflation accelerating and the economy going into a prolonged period of recession. During 2000, Kenya proposed to reverse a policy of financial liberalisation by re-introducing regulated interest rates through the use of a Treasury-Bill benchmark on lending rates, deposit rates and other supportive measures to the commercial banking sector. The initiative is called the Donde bill after the legislator who introduced it in the Kenya Parliament (Wagacha, 2001).

In 2002, Kenya saw a new political dispensation with the unseating of the KANU (Kenya African National Union) regime widely blamed for Kenya's past economic ruin. The newly elected coalition government came into power with a pledge to uproot corruption among other vices in the economy. According to Market Intelligence (2003), the effect of this for the banking sector was the invoking of Section 44 of the Banking Ad by the Finance minister during the 2003 budget. This and stricter supervision of banking activities by the central bank has led to a decline in profits for the banking sector and a narrowing of interest rate spreads in the past year.

Commercial Banks in Kenya

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), governs the Banking industry in Kenya. The banking sector was liberalised in 1995 and exchange controls lifted. The CBK, which falls under the Minister for Finance's docket, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. The CBK publishes information on Kenya's Commercial banks and non-banking financial institutions, interest rates and other publications and guidelines. The banks have come together under the Kenya Bankers Association (KBA), which serves as a lobby for the banks' interests and addresses issues affecting its members (Kenya Bankers Association annual Report, 2008).

The industry consist of forty three banks, fifteen micro finance institutions and forty-eight foreign exchange bureaus in Kenya. Thirty three of the banks, most of which are small to medium sized, are locally owned and thirteen are foreign owned. The banks have come together under the Kenya Bankers Association (KBA), which serves as a lobby for the banks' interests and addresses issues affecting member institutions. The financial services industry has been, and continues to be, radically transformed by applications of new technology in Kenya. The evolution of the banking industry has presented both challenges and opportunities for Commercial banking institutions. Over the last several years, financial modernization, deregulation, industry consolidation, the rise of new institutions, shifting trends in borrowing and lending, globalization and emerging technology have influenced and affected how Commercial banks operate.

Driven by competition brought about by globalization, information technology and managerial innovation, the banks have attempted to fit their operations and systems to a customer focused strategy. The banking sector has embraced changes occurring in Information Technology with most banks having already achieved branchless banking as a result of the adoption of communications options. According to The Central Bank Annual Supervision report (2003), the increased utilization of modern information and communications technology has for example led to several banks acquiring ATMs as part of their branchless development strategy measures. When the changes are on a larger scale and involve many individuals and subunits such as the ones encountered by banks, it is a challenge to manage change simultaneously across functional and managerial levels.

Commercial banks in Kenya are categorized in three tier groups on the basis of the value of bank assets. Tier group one are books with an asset base of more than Ksh40 billion, tier group two are Commercial banks with asset base between Ksh40 billion and Ksh10 billion while tier group three are banks with asset base of less than Ksh10 billion. According to the 2009 Banking Survey, there are eleven Commercial banks in tier group one, eleven Commercial banks in tier group two and twenty one Commercial banks in tier group three comprising to a total of forty three Commercial banks.

Problem Statement

Banking systems have been shown to exhibit significantly and persistently large interest rate spreads on average than those in other developing and developed countries (Nannyonjo, 2002; Beck and Hesse, 2006). The size of banking spreads serves as an indicator of efficiency in the financial sector because it reflects the costs of intermediation that banks incur (including normal profits). Some of these costs are imposed by the macroeconomic, regulatory and institutional environment in which banks operate while others are attributable to the internal characteristics of the banks themselves (Robinson, 2002).

High Interest rate Spreads are an impediment to financial intermediation, as they discourage potential savers with low returns on deposits and increase financing costs for borrowers, thus reducing investment and growth opportunities. This is of particular concern for developing and transition countries where financial systems are largely bank-based, as is the case in Kenya and tend to exhibit high and persistent spreads. Policy makers in Kenya have for some time been actively engaged in developing a panacea to the persistently wider interest rate spreads with hope that this would promote competitiveness, efficiency and stability in the domestic financial system and ultimately narrow the intermediation spreads (CBK, 2005). Unfortunately, interest rate spreads in Kenya have remained higher than in most transition Economies (Tumusiime, 2002; Beck and Hesse, 2006; Ministry of Finance Planning, 2008). Lending rates continue to ride high while lower rates are being offered on deposits. In 2005, for example, the average interest rate spread hit 20% with dispersions in the range of 18% to 34% while at the same time, the net interest margins hit 13%, compared to 7.4% on average in the sub-Saharan African region, 6.3% on the average in low-income countries, and 5% in the world, and moreover, higher in comparison to neighbouring Uganda and Tanzania. Possibly, this could be a result that Kenya's banking system is faced with unrelenting high probabilities of default (Credit risk).

Ngugi (2001) analyzing interest rate in Kenya found a widening interest rate spread following interest rate liberalization characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios and declining non-performing loans. Despite the assumed benefits of financial liberalization, available data shows that interest rates increased significantly after that. This sharp escalation was particularly in the spread. According to Ndung'u and Ngugi (2000), deposit rates remained low while lending rates kept moving upwards. As of December 2003, the nominal average savings deposit rate in Kenya among commercial banks was 3.51% while the nominal lending rate was 14.11%. The spread was 10.6% . Compared to the 1980s and early 1990s when the spreads remained below 4%, these wide spreads in later years were not healthy for the economy.

According to Kithinji and Waweru (2007), that banking problems is back-dated as early as 1986 culminating in major bank failures (37 failed banks as at 1998) following the crises of 1986 to 1989, 1993/1994 and 1998; they attributed these crises to NPLs which is due to the interest rate spread. The chief reason behind high interest rate spread has been argued to be the

presence of high intermediation costs, reflecting the weaknesses and inadequacies of their financial sectors. Despite the ongoing financial sector reforms, which are aimed at enhancing competition, the spread, instead of narrowing down, has been either stagnant or growing. This study, therefore seeks to fill the gap by establishing the factors influencing interest rate spread among commercial banks in Kenya.

Objectives of the Study

General Objective

The study aimed at establishing the factors influencing interest rate spread among commercial banks in Kenya.

Specific Objectives

The study was guided by the following specific objectives.

i. To establish the effects of credit risk on interest rate spread among commercial banks in Kenya.

ii. To assess effects of market structure on interest rate spread among commercial banks in Kenya

iii. To establish the effects of regulation on interest rate spread among commercial banks in Kenya.

iv. To determine the effects of access to information and distribution of market power on interest rate spread among commercial banks in Kenya.

Research Questions

i. What is the effect of credit risk on interest rate spread among commercial banks in Kenya?

ii. How does market structure affect interest rate spread among commercial banks in Kenya?

iii. How does regulation affect interest rate spread among commercial banks in Kenya?

iv. What is the effects of access to information and distribution of market power on interest rate spread among commercial banks in Kenya?

Justification of the study

The study is important to the management of Commercial banks as it will provide an insight on the factors influencing interest rate spread among commercial banks in Kenya. The results of this study will provide information to policy makers and other stakeholders in the financial sector (especially the banks) to come up with strategies that help in dealing with the high interest rate spread experience in the banking sector and thus improve on the financial performance of the organisations. It may be used as a tool for persuading commercial banks to reduce their interest rates spread and hence increase their volume of business, which of course would compensate the loss in the interest rate spread. If properly used interest rate spread may accelerate capital formation and private investment in the economy: especially by pursuing banks to raise the interest rates that they pay on deposits and lowering the one they charge on loans.

The study will also be invaluable to the government and CBK. This is because the monetary policy framework of Central Bank of Kenya and its implementation will be guided by a need to ensure, among others: i) realistic interest rate spreads that encourage financial deepening; and ii) a safe, sound, efficient and competitive banking system through discreet risk management. There is a possibility of interests rate spread being the best economic indicator than it is the rate of interest especially with regard to private investment. These findings therefore might influence the effectiveness of economic policies.

The research results will also be important to scholars and researchers as it will add to the existing pool of knowledge. Further, this study is also significant in that, academically it will add to the existing knowledge on interest rate spread thus forming part of academic reference.

Scope of the Study

The study looked at the factors influencing interest rate spread among commercial banks in Kenya. The study targets employees in Commercial banks who are financial managers at the bank headquarters. Therefore, the data was collected from these employees who are considered to be knowledgeable on the subject matter. These were considered as major respondents of the study since they were the target group of this study.

Limitations of the Study

The researcher foresaw a challenge in securing the employees precious time considering their busy working schedules. The researcher made proper arrangements with employees to avail themselves for the study off-time hours as well as motivating the employees on the value of the study. The researcher also exercised utmost patience and care and in view of this the researcher had to make every effort possible so as to acquire sufficient data from respondents. Alternatively the researcher was faced with a shortage of literature on factors influencing interest rate spread more so in the local context. This handicap is attributed to lack of extensive research in the field of interest rate spread. The researcher countered this by visiting the available libraries in the country and also online research sites.

LITERATURE REVIEW

Introduction

This chapter presents a review of related literature on the subject under study presented by various researchers, scholars, analyst and authors. The research has drawn materials from several sources which are closely related to the theme and the objectives of the study. The specific area covered here includes the theoretical underpinnings of the study, the empirical review and finally a section on the conceptual and operational framework.

Theoretical Review

According to Zima (2007), a theory is a set of assumptions, propositions, or accepted facts that attempts to provide a plausible or rational explanation of cause-and-effect (causal) relationships among a group of observed phenomenon. A theoretical framework on the

other hand is a group of related ideas that provides guidance to a research project or business endeavour (Zima, 2007).

Liquidity Theory

In economics, the premium that wealth holders demand for exchanging ready money or bank deposits for safe, non-liquid assets such as government bonds. As originally employed by John Maynard Keynes liquidity preference referred to the relationship between the quantity of money the public wishes to hold and the interest rate. According to Keynes, the public holds money for three purposes: to have on hand for ordinary transactions, to keep as a precaution against extraordinary expenses, and to use for speculative purposes. He hypothesized that the amount held for the last purpose would vary inversely with the rate of interest.

The most significant point about Keynes's theory is that, at some very low interest rate, increases in the money supply will not encourage additional investment but instead will be absorbed by increases in people's speculative balances. This will occur because the interest rate is too low to induce wealth holders to exchange their money for less liquid forms of wealth and because they expect interest rates to rise in the future. The concept of liquidity preference was used by Keynes to explain the prolonged depression of the 1930s.

Post-Keynesian analysis, in which the classification of liquid assets has been broadened, has tended to relate the demand for money to a wider array of variables; these include wealth and the various forms in which it is held, the yields of these different forms, and the level of income, as well as the interest rate. The supply of money together with the liquidity-preference curve in theory interact to determine the interest rate at which the quantity of money demanded equals the quantity of money supplied

Loanable Funds Theory

According to the loanable funds theory of interest, the rate of interest is calculated on the basis of demand and supply of loanable funds present in the capital market. The concept formulated by Wicksell (1952), the well-known Swedish economist, is among the most important economic theories.

Basic tenet of the loanable funds theory of interest the loanable funds theory of interest advocates that both savings and investments are responsible for the determination of the rates of interest in the long run. When the interest rates are high the savings and investments are low hence the amount of money in circulations. This reduces the disposable income of an individual. Low interest rates stimulate the investments through borrowing of funds that consequently yield high returns and saving. The disposable income for individuals and companies increase as a result. The dependable variable the disposable income relies on the loan interest rates and varies with the change in the interest rate (Wiksell, 1952). On the other hand, short-term interest rates are calculated on the basis of the financial conditions of a particular economy. The determination of the interest rates in case of the loanable funds theory of the rate of interest depends essentially on the availability of loan

amounts. The availability of such loan amounts is based on certain factors like the net increase in currency deposits, the amount of savings made, willingness to enhance cash balances and opportunities for the formation of fresh capitals.

According to the loanable funds theory of interest the nominal rate of interest is determined by the interaction between the demand and supply of loanable funds. Keeping the same level of supply, an increase in the demand of loanable funds would lead to an increase in the interest rate and vice versa is true. This will in turn decrease the disposable income that is available in the economy. Conversely an increase in the supply of loanable funds would result in the fall in the rate of interest. If the both demand and supply of the loanable funds change, the resultant interest rate would depend much of the magnitude and direction of movement of the demand and supply of loanable funds.

This study attempts to identify how changes in interest rate affect the economy. This theory indicates the various factors that lead to fluctuations in the interest rates and consequently affecting the disposable income. Effects of loan interest rates on disposable income, the main variables are loan interest rates being the independent variable and disposable income as the dependent variable. Hence the literature review intends to concentrate on the loan interest rates and the disposable income.

Keynesian Theory

Keynesian theory show that they believe that the economy can settle at any equilibrium. This means that they recommend that the government gets actively involved in the economy to manage the level of demand Keynes (1936) the government uses tools such as interest rates to regulate the amount of money in the economy. If there is an increase in the amount of money the interest rates will be increased thus reducing the disposable income available to individuals.
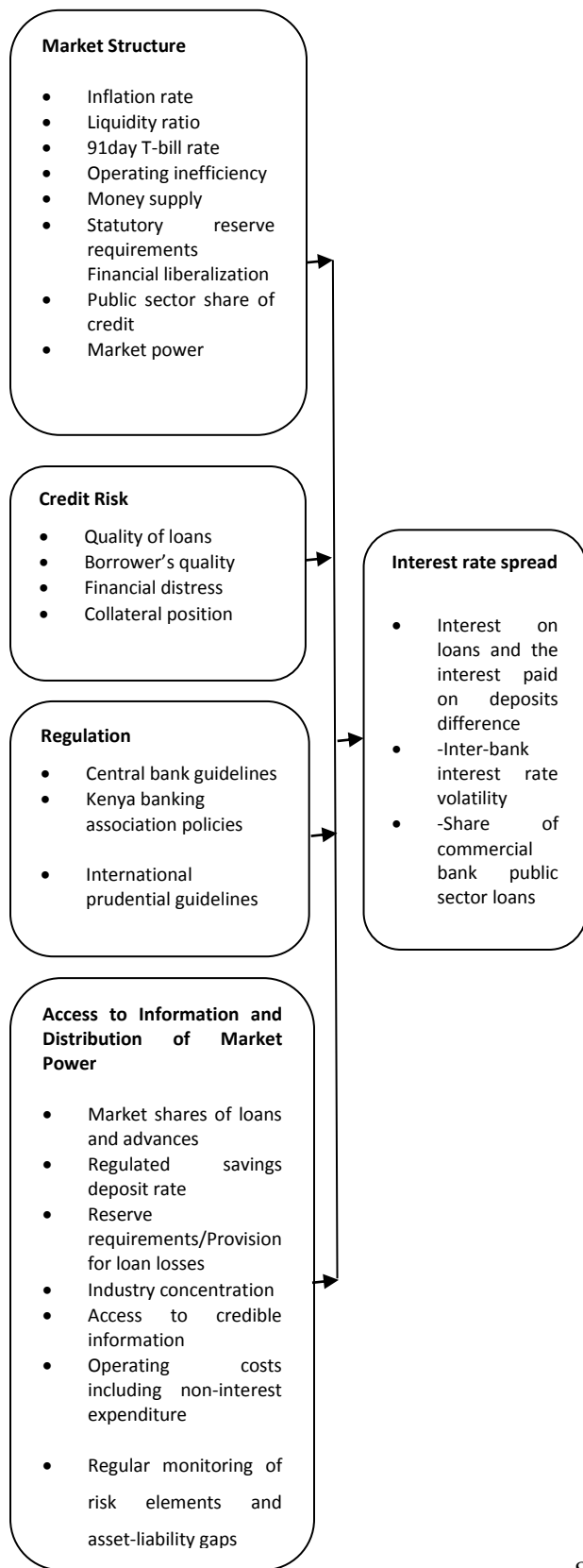
Demand management means adjusting the level of demand to try to ensure that the economy arrives at full employment equilibrium. If there is a shortfall in demand, such as in a recession (a deflationary gap) then the government will need to reflate the economy. If there is an excess of demand, such as in a boom, then the government will need to deflate the economy.

Conceptual Framework

In a broad sense a conceptual framework can be seen as an attempt to define the nature of research. A conceptual framework considers the theoretical and conceptual issues surrounding research work and form a coherent and consistent foundation that will underpin the development and identification of existing variables (ACCA, 2011). This study sought to establish the factors influencing interest rate spread among commercial banks in Kenya. The independent variables in this study were Credit Risk, and market structure/condition. This study therefore established the influence of the independent variables on the dependent variable which will be interest rate spread.

Independent variables | Dependent variables

Market Structure

- Inflation rate
- Liquidity ratio
- 91day T-bill rate
- Operating inefficiency
- Money supply
- Statutory reserve requirements
  Financial liberalization
- Public sector share of credit
- Market power

Credit Risk

- Quality of loans
- Borrower's quality
- Financial distress
- Collateral position

Regulation

- Central bank guidelines
- Kenya banking association policies

- International prudential guidelines

Access to Information and Distribution of Market Power

- Market shares of loans and advances
- Regulated savings deposit rate
- Reserve requirements/Provision for loan losses
- Industry concentration
- Access to credible information
- Operating costs including non-interest expenditure

- Regular monitoring of risk elements and asset-liability gaps

Interest rate spread

- Interest on loans and the interest paid on deposits difference
- -Inter-bank interest rate volatility
- -Share of commercial bank public sector loans

Independent Figure 1.1: Conceptual framework

Market Structure

The macroeconomic environment (Inflation, Liquidity, 91day T-bill rate) predominantly affects a country's spreads through its impact on credit risk and therefore the quality of loans. An unstable and weak macroeconomic environment creates uncertainty about future economic growth and returns on investments, making defaults on loans more likely. In response to this increased credit risk, banks will raise the premium on loans thus increasing the Spreads (Mugume and Ojwiya, 2009). However, this has been contested by the findings of Seetanah *et al,* (2009). In their study, macroeconomic environment was not a significant variable in explaining interest spreads as the case was for the bank specific characteristics.

High and volatile inflation and the uncertainty this creates seems to lead to an increase in interest rate spreads. This is so because price swings always compromise borrowers' ability to meet their loan obligations, and the quality of collateral is also likely to weaken which could increase the bank costs in loan recovery and default cases. Again, this will make banks hedge against the likelihood of default arising from the high and variable inflation by using higher spreads. Seetanah *et al,* (2009) all found a positive relationship between price instability represented by high and variable inflation and interest rate spreads. However, this is still contested by Samuel and Valderrama, (2006) whose study in the Barbados established a negative relationship between inflation and interest spreads. The possible explanation for

the negative relationship would be that higher inflation indicates faster credit expansion at possibly lower lending rates and therefore lower spreads.

Liquidity also appears to be an influential factor in determining the Spreads. In countries where excess liquidity is very high (and banks have surplus funds), the marginal cost of deposit mobilization is high and the marginal benefits are likely to be very low. In this scenario, interest rates on deposits will be low, tending to increase the Spreads. Relatedly, it is believed that high liquidity in the banking system will exert upward pressure on inflation with all its effects on credit risk which will in turn lead to banks hedging against such effects by increasing the spreads. Conversely, Seetanah *et al,* (2009) have found that higher liquidity in the financial system can lead to low interest spreads in that whenever banks are liquid, their perceived liquidity exposure is low which translates into lower premiums on both loans and deposits and hence narrow spreads.

Institutional constraints related to financial regulations including liquidity requirements, statutory government securities holding requirement, capital controls, and tax have been found to have a positive correlation with Intermediation Spreads. In their studies, Barajas, Roberto et al. (1998), Saunders and Schumacher (2000), Gelos (2006), Nannyonjo (2002), Hesse and Beck (2006) came up with empirical evidence to the fact that financial regulation is costly to banks which makes them pass on all of the resultant costs to the customer by hiking the lending rates and or reducing deposit rates.

Credit Risk

Credit risk is the risk of loss due to the inability or unwillingness of a counter-party to meet its contractual obligations. Models proposed by Straka (2000) and Wheaton *et al*, (2001) have expressed default as the end result of some trigger event, which makes it no longer economically possible for a borrower to continue offsetting a credit obligation. Though there are various definitions of credit risk, one outstanding concept portrayed by almost every definition is the probability of loss due to default. However, a lot of divergences emerge on defining what default is, as this is mainly dependent on the philosophy and/or data available to each model builder. Liquidation, bankruptcy filing, loan loss (or charge off), nonperforming loans (NPLs) or loan delayed in payment obligation, are mainly used at banks as proxies of default risk. This research paper has proxied credit risk by the ratio of Nonperforming loans to total loans advanced (Beck and Hesse, 2006; Calcagnini *et al,* 2009; Maudos and Solis, 2009)

The function of extending credit continues to present with it considerable risk especially that of default (Credit Risk). For instance, financial defaulters/ credit risk nearly doubled in 2008 with an all-time single biggest defaulter by volume being Lehman Brothers who in September 2008 failed to pay $ 144 Billion of rated debt (Standard & Poor, 2009). Similarly, even financial institutions in Uganda continue to wriggle through a similar condition with many getting scathed. For example, in the late 90's, Uganda's financial system was grossly hit by mass credit default which culminated into insolvency and hence closure of four (4) local commercial banks—Greenland Bank,

Cooperative Bank, International Credit Bank and Trust Bank. This created a banking crisis and the remaining local commercial banks experienced loss of customer confidence leading to poor financial performance (Bank of Uganda, 2002).

Though many blamed this scenario on the profligate lending, it is also patent that most of these banks, then faced with bigger portfolios of Non Performing Loans (Credit risk) supposedly were using wider Intermediation Spreads at the time (34% in some of them) as a coping mechanism which further interfered with the ability and willingness of borrowers to pay and so the spiral effect set in. Hitherto, some technocrats at Bank of Uganda and in commercial Banks allude to the fact that persistent credit risk /default risk, mainly buoyed by the blatant lack of accurate information on borrowers' debt profile and repayment history; could be the causal factor for the current wider Interest rate Spreads.

Between 1987—2000, Ugandan policy makers embarked on an ambitious and far reaching financial sector reform programme marked by the reforming of the legal and institutional frame work, restructuring of state-owned financial institutions, lifting of entry barriers to private sector operators in the financial sector, and the deregulation of interest rates from the government controls; with hope that intermediation spreads among other things would narrow (Bank of Uganda, 2005). Sequentially, the Credit Reference Bureau is another vehicle that was instituted by Bank of Uganda on the rationale that timely and accurate information on borrowers' debt profile and repayment history would reduce information asymmetry between borrowers and lenders. This was expected to enable banks to among other things lower credit risk and Interest rate Spreads and hence contribute to financial deepening in the economy.

It is hypothesized that when banks are faced with clients with a high probability of default (Credit risk), they hedge against the impending loss by increasing the lending rates and or lowering the deposit rates (Widening the spreads). Moreover, high and inflexible interest spreads are indicative of the existence of perceived market risks (Mugume and Ojwiya, 2009).

Regulation

Regulation in the financial sector is aimed at reducing imprudent actions of banks with regards to charging high interest rates, insider lending and reducing loan defaults. The central banks have achieved this through interest rate ceilings and other monetary policies. 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 and loan non-performance. This is because they reduce the default risk attached to the bank lending rate. However, it is noted that in developing countries regulations tend to be on paper but in practice are not enforced consistently and effectively. Thus, leading to default on loans lent to clients.

While subsidized rates can help increase loan accessibility, it tends to favor the wealthy and politically connected and borrowers who might not take the loans seriously enough (Muraki, et al., 1997: 36). Borrowers may take loans less seriously since the rate is lower than the market

rate and money may not be used for the best investment available in the market. However, lower interest rates may be helpful for small borrowers who may not know many high return investment opportunities.

According to a World Bank report (1994) in Uganda, owing to lack of proper regulations the country's banking industry was described as extremely weak, with huge non-performing loans and some banks teetering on the verge of collapse. Mukalazi (1999) notes that reeling from years of economic mismanagement and political interference, Uganda's banking industry posted huge losses in the early 1990s. To help address credit risk management in Ugandan banks, the government has introduced a statute that deals with several issues

Interest rate spread is a measure of profitability between the cost of short term borrowing and the return on long term lending. These costs are normally transferred to borrowers who might, with time, be in a position of not repaying the loan. World Bank policy research working paper on Non-performing Loans in Sub-Saharan Africa revealed that bad loans are caused by adverse economic shocks coupled with high cost of capital and low interest margins (Fofack, 2005).

Access to Information and Distribution of Market Power

The market power of the banks plays an important role in influencing bank spreads. Economic theory posits that competitive pressures that result from conditions of free entry and competitive pricing will raise the efficiency of intermediation by decreasing the spreads between deposits and lending rates. Recent empirical studies, Chirwa et al (2004),

tend to support the hypothesis that interest rate spreads are positively related to market power. That is, the more concentrated the banking industry (i.e. the less competitive) the higher the banks' spreads.

Within the structure and the level of efficiency at which the banks operate at present, imperfect access to information has significant influence on IRS especially through its effect on the cost of credit. Thus, ensuring greater access to credible information could play an important role in reducing uncertainty in the credit environment and thereby reduce the IRS. Obviously, interest rate volatility and broader socioeconomic uncertainty contribute to widening of IRS. This indicates that reducing such uncertainties and removing the asymmetric access to information constitute important elements of an effective IRS management policy.

Similarly, operating costs including non-interest expenditure which contribute to high IRS are linked, among others, to market power and the market share of individual bank/bank group that affect its cost of doing business. For efficiently managing operating costs, it is important for the banks to bring greater efficiency in bank operation, especially relating to management of personnel, processes, and technology. By making judicious choices with respect to these elements, the banks can significantly improve productivity in different operations and achieve substantial reduction in operating costs.

It would also be important for the banks to manage interest rate volatility through adopting best practices in fund management. Regular monitoring of risk elements and asset-liability

gaps, for example, enables the banks to better manage liquidity risks that can contribute to lowering the IRS. Similarly, introduction of hedging mechanisms can play useful role that may start with short-term derivatives, such as forward rate agreements and interest rate swaps before moving to sophisticated options and longer dated transactions.

The market power variable has provided some interesting results. The empirical estimates indicate that the banking sector as a whole did have some degree of market power in setting interest rates. This finding is similar to other results especially for small banking sectors in developing countries. Moore and Craigwell (2000) found a similar result for some CARICOM countries, while Chirwa et al (2004) found this result for the Malawian banking system. However, when foreign and indigenous banks were disaggregated it was found that amongst the foreign banks the level of concentration in the market was quite low. The low level of concentration (i.e high degree of competition) among the foreign banks resulted in the narrowing of their spreads over the period. This is in contrast to the indigenous banks where there exists a heavily concentrated market that resulted in a widening of their spreads over the period. Barajas et al (1999) also found that competitive behaviour among private banks in Colombia also contributed to lower spreads. In respect of competition, the authorities ought to develop a market for commercial papers and further strengthen the equity market to improve the competitive environment in the financial system. A more competitive environment would mitigate the monopoly rents extracted by banks. In addition, the continued development of viable alternatives to commercial banks' output must be encouraged. These include credit unions, trust companies and other non-bank financial institutions. In addition, new entrants to the banking system should be easily facilitated. New choices would raise deposits rates and may lower lending rates, which will permit spreads to narrow over time.

Empirical Studies

Market Structure

The 91-day T-bill rate has also been found to influence interest rate spread. In most of the countries, banks use this as their reference rate for pricing their loans and deposits. Moreover this is reinforced by the findings from the studies of Samuel and Valderrama (2006), Nannyonjo (2002), Tennant and Folawewo (2009) that indicate a positive correlation between the T-bill rate and Interest rate spreads. Though the former two studies' coefficients are significant, the latter manifested a weak linkage between the two. A positive relationship between the T-bill rate and interest rate spreads indicates that the higher the bill rate the higher the spreads and vice versa. This is so because the 91 days bill is used as the mirror for the risk return continuum of any financial system. To this end a higher bill rate would indicate the same risk profile for the sector which would make banks mark-up their credit facilities to compensate for perceived risk. However, this may not be always the case in undeveloped financial systems where information inadequacies constrain effective loan and deposit pricing.

Craigwell and Moore (2002) instead view wider spreads as a function of market structure and

bank specific factors. To this end they postulate that size of a bank, its market power, and bank concentration have a higher explanatory power for intermediation spreads. Therefore they conclude by indicating that smaller banks, a market with a few banks but with a higher market power and hence with high concentration are likely to lead to wider interest rate spreads. Nonetheless, in contrast to some of the preceding assertions are Panzar and Rosse (1987), and the IDB (2005) which disregard purported relationship between bank concentration and spreads.

Credit Risk

Bandyopadhyay (2007), contend that individual borrowers with characteristics such as divorced or separated, having several dependants, with unskilled manual occupation, uneducated, unemployed most of the year; are prone to defaulting on their credit obligations. This is supported by economic theories, most especially the human capital theory which regard education and training as an investment that can increase the scope of gainful employment and improve net productivity of an individual and hence their incomes. However though, the benefit of education and training has been underestimated in most of the studies on credit risk. Also, age and collateral position as creditworthiness factors raise a lot of controversy as mixed arguments have been raised as to their impact on the credit risk.

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. Sinkey and Greenwalt (1991) report that depressed regional economic conditions also explain the loss-rate of the commercial banks.

Regulation

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.

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.

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.

Access to Information and Distribution of Market Power

Chirwa et al (2004) used panel data techniques to investigate the causes of interest rate spreads in the commercial banking system of Malawi over the liberalised period of the 1990s. Their results show that high interest rate spreads were attributable to monopoly power, high reserve requirements, high central bank discount rate and high inflation.

Demirguc-Kunt et al (2009) using bank level data for 80 industrial and developing countries over the period 1988-1995 show that differences in interest margins reflect a variety of determinants such as bank characteristics, macroeconomic conditions, explicit and implicit bank taxes and the overall financial structure.

Ramful (2001) in his study of the Mauritian banking sector found that interest rate spread was used not only to cover the cost of operating expenses and required reserves but also reflected the high degree of market power among banks and the poor quality of loans.

For the wider Caribbean, Moore and Craigwell (2000), using panel data techniques, empirically assessed some of the major determinants of commercial banks' spreads over the financially liberalized period of the 1990s and found that market power, provision for loan losses and real gross domestic product to be significant factors influencing bank spreads.

As it specifically relates to the ECCU, Randall (1998) devised two approaches to explain various determinants of interest rate spreads. In the first approach, using 24 quarterly observations for each of the countries over the period 1991-96, an accounting framework was

formulated to decompose spreads into shares of various components. Using two-stage least squares methodology, the coefficients of parameters were obtained. However, her framework was purely descriptive and lacked any behavioural content, which she duly acknowledged. In the second approach Randall (1998) tested a set of variables, which were expected *a priori* to have an effect on the spread and found that operating costs were a key determinant of interest rate spreads accounting for 23 per cent of the estimated spread.

Grenade (2007) estimates the determinants of commercial banks interest rate spreads in the Eastern Caribbean Currency Union using annual panel data of commercial banks. The empirical model includes regulatory variables (statutory minimum savings deposit rate) as well as market power, operating costs as a ratio of earning assets, ratio of provisions for loan losses to total earning assets as a measure of credit risk, liquidity risk proxied by the ratio of liquid assets to total assets and real GDP as an indicator of economic activity. Market power is proxied by the Herfindahl-Hirschman index (HHI) computed using the market shares of loans and advances in the banking industry. The spread is found to increase with an increase in market power, the regulated savings deposit rate, real GDP growth, reserve requirements, provision for loan losses and operating costs.

Summary of Literature Review

The prevailing margin between deposit-lending rates, the interest rate spreads (IRS) in an economy has important implications for the growth and development of such economy, as numerous authors suggest, a critical link between the efficiency of bank intermediation and economic growth. Quaden (2004), for example, argues that a more efficient banking system benefits the real economy by allowing 'higher expected returns for savers with a financial surplus, and lower borrowing costs for investing in new projects that need external finance.

The macroeconomic environment (Inflation, Liquidity, 91day T-bill rate) predominantly affects a country's spreads through its impact on credit risk and therefore the quality of loans. High and volatile inflation and the uncertainty this creates seems to lead to an increase in interest rate spreads. Liquidity also appears to be an influential factor in determining the Spreads. In countries where excess liquidity is very high (and banks have surplus funds), the marginal cost of deposit mobilization is high and the marginal benefits are likely to be very low.

Though there are various definitions of credit risk, one outstanding concept portrayed by almost every definition is the probability of loss due to default. However, a lot of divergences emerge on defining what default is, as this is mainly dependent on the philosophy and/or data available to each model builder. It is hypothesized that when banks are faced with clients with a high probability of default (Credit risk), they hedge against the impending loss by increasing the lending rates and or lowering the deposit rates (Widening the spreads). Interest rate spread is a measure of profitability between the cost of short term borrowing and the return on long term lending.

Critique

Monetarist economists argued long ago that central bank interest rate rules exacerbate macroeconomic fluctuations, essentially by not allowing the interest rate to respond promptly to shifts in the supply and demand for loans. To support this critique, they pointed to the pro-cyclicality of the money stock. Yet, when there are real shocks and a real business cycle, modern macroeconomic models imply that some pro-cyclicality of money is desirable, to stabilize the price level. A simple interest rate rule illustrates that the monetarist critique can be valid within this model, since the rule exacerbates the response of real activity to real shocks. Other interest rate rules instead limit the macro economy's response to real shocks. But, while these interest rate rules have diverse effects on real activity, there is an important common implication: By smoothing the nominal interest rate in the short run, the rules all lead to increases in the longer-run variability in inflation and nominal interest rates.

Research Gap

While quite a number of studies have investigated the factors influencing interest rate spread, most of these studies have been done in developed countries with few being done in developing countries. In Kenya, Ngugi (2001) conducting a study on interest rate spread in Kenya found that commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. Other studies done on interest rate spread showed that indicated that potential savers are discouraged due to low returns on deposits and thus limits financing for potential borrowers (Ndung'u and Ngugi, 2000). These implications of banking

sector inefficiency have spurred numerous debates in developing countries about the determinants of banking sector interest rate spreads.

Studies have shown that there is a pervasive view amongst some stakeholders that high interest rate spreads are caused by the internal characteristics of the banks themselves, such as their tendency to maximize profits in an oligopolistic market, while many others argue that the spreads are imposed by the macroeconomic, regulatory and institutional environment in which banks operate (Fofack, 2005). These debates can only be resolved through objective, quantitative analysis of the determinants of banking sector interest rate spreads in developing countries. This study therefore seeks to fill this gap by establishing the factors influencing interest rate spread among commercial banks in Kenya.

RESEARCH METHODOLOGY

Introduction

This chapter describes the methods that were used in the collection of data pertinent in answering the research questions. It is divided into research design, study population, sample design, data collection, data analysis methods, ethical issues and expected output.

Research Design

The research adopted a descriptive survey research design. The design was chosen since it is more precise and accurate since it involves description of events in a carefully planned way. It also portrays the characteristics of a

population fully (Babbie, 2002). According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. Further, Mugenda and Mugenda (2003) opined that the descriptive research collects data in order to answer questions concerning the current status of the subject under study. The main focus of this study was quantitative. However some qualitative approach was used in order to gain a better understanding and possibly enable a better and more insightful interpretation of the results from the quantitative study.

Population

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 target population of this study was the management staff working at commercial banks headquarters in Nairobi. The study focused particularly on the top, middle and lower level financial management staffs who are directly dealing with the day to day financial management of the banks since they are the ones Conversant with the subject matter of the study. So the researcher examined a sample of staff drawn from the population of 597 financial management staff working in commercial banks of the top, middle and low level management ranks at the headquarters in Nairobi. Mugenda and Mugenda (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study. The population is as summarized in the table below.

Table3. 1: Target Population

	Frequency	Percentage
Senior financial managers	43	9.7%
Middle level financial managers	185	28.6%
Low level financial managers	368	61.6%
Total	**597**	**100%**

Sampling Technique

The sampling frame describes the list of all population units from which the sample was selected (Cooper and Schindler, 2007). Ngechu (2004) underscores the importance of selecting a representative sample through making a sampling frame. From the population frame the required number of subjects, respondents, elements or firms was selected in order to make a sample.

A sample population of 234 was arrived at by calculating the target population of 597 with a 95% confidence level and an error of 0.05 using the below formula taken from Mugenda and Mugenda (2003):

From Normal distribution the population proportion can be estimated to be

$$n = \frac{Z^2 PQ}{\alpha^2}$$

Where:

Z is the Z – value = 1.96

P Population proportion 0.50

Q = 1-P

$\alpha = level\ of\ significance$ = 5%

$$n = \frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05 \times 0.05}$$

$$n = 384$$

Adjusted sample size

n.'= 384/ [1+ (384/597)]

Approx = 234

Stratified proportionate random sampling technique was used to select the sample. According to Babbie (2004) stratified proportionate random sampling technique produce estimates of overall population parameters with greater precision and ensures a more representative sample is derived from a relatively homogeneous population. Stratification aims to reduce standard error by providing some control over variance. The study grouped the population into three strata i.e. senior managers, middle level managers and low level financial managers. From each stratum the study used simple random sampling to select 234 respondents. Statistically, in order for generalization to take place, a sample of at least 30 elements (respondents) must exist (Cooper and Schindler, 2007). Kothari (2010) also argues that if well chosen, samples of about 10% of a population can often give good reliability and so 30% was even better. The selection was as follows.

Table3. 2: Sample Size

	Total population	Percentage	Sample size
Senior financial managers	43	0.39	17
Middle level financial managers	185	0.39	72
Low level financial managers	368	0.39	144
Total	**597**	**0.39**	**234**

Data Collection

Data Collection Instruments

The study used both primary and secondary panel data. Primary data was obtained through self-administered questionnaires with closed and open-ended questions. A 5-point likert scale was used to assess the factors affecting interest rate spread where 1=Very great extent, 2= Great extent, 3 = Moderate extent, 4 = Little extent and 5 = No extent. The questionnaires included structured and unstructured questions and was administered through drop and pick method to respondents. The closed ended questions enabled the researcher to collect quantitative data while open-ended questions enabled the researcher to collect qualitative data. The questionnaire was divided into two sections. Section one is concerned with the general information about respondents, while section two deals with the study variables. Secondary data was collected by use of desk search techniques from published reports and other documents for a period of ten years from 2000 to 2012. Secondary data includes the governments' publications, journals, banking

survey reports, annual reports of the Commercial banks in Kenya and periodicals.

Data Collection Procedures

The self administered questionnaires were hand delivered at the respondents' place of work to ensure objective response and reduce non-response rate. The researcher booked appointments with the respondents, to fill in the questionnaire. This helped in clarification where need be and it avoid inconveniences. Nevertheless, where it proves difficult for the respondents to complete the questionnaires immediately, the questionnaires were left with the respondents and picked later. An introductory letter from JKUAT was taken along to enable the administering of the questionnaire. The questionnaires was distributed using the drop and pick later method.

Pilot Testing

To ascertain the validity of questionnaire, a pilot test was carried out (Cronbach, 1971). The content validity of the research instrument was evaluated through the actual administration of the pilot group. In validating the instruments, 15 managers were selected. The population units used in the pilot study was not included in the final sample. The study used both face and content validity to ascertain the validity of the questionnaires. Face validity is actually validity at face value. As a check on face validity, test/survey items are sent to the pilot group to obtain suggestions for modification. Content validity draws an inference from test scores to a large domain of items similar to those on the test (Polkinghorne, 1988). Content validity was concerned with sample-population representativeness i.e. the knowledge and skills covered by the test items should be representative to the larger domain of knowledge and skills (Cronbach, 1971).

The instruments were administered by the researcher after which a discussion was made to determine the suitability, clarity and relevance of the instruments for the final study. Ambiguous and inadequate items were revised in order to elicit the required information and to improve the quality of the instruments. To establish the content validity of the research instrument the student sought opinions of experts in the field of study especially the lecturers in the department of business management to ensure that the tool were measuring what is supposed to be measured (Somekh, and Cathy, 2005).

Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. The researcher selected a pilot group of 15 individuals from the target population to test the reliability of the research instruments. In order to test the reliability of the instruments, internal consistency techniques was applied using Cronbach's Alpha. The alpha value ranges between 0 and 1 with reliability increasing with the increase in value. Coefficient of 0.6-0.7 is a commonly accepted rule of thumb that indicates acceptable reliability and 0.8 or higher indicated good reliability (Mugenda, 2008). The pilot data was not included in the actual study.

Data Analysis

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. Both descriptive analysis and inferential analysis were employed. Descriptive statistics such as means, standard deviation and frequency distribution were used to analyze the data. The researcher used simple linear regression model to analyze the relationship between the independent and dependent variables. The regression equation estimation was employed to analyze how the independent variable affected the dependent variable. The regression equation was ($Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$):

Whereby   Y = Interest rate spread

         X_1 = Market Structure

         X_2 = Credit Risk

         X_3 = Access to Information and Distribution of Market Power

         X_4 = Regulation

         ε = Error Term

The findings were presented using tables and figures to summarize responses for further analysis and facilitate comparison.

## DATA ANALYSIS, PRESENTATION AND INTERPRETATION

Introduction

This chapter discussed data analysis, presentation and interpretation of the research findings in line with the objectives of the study.

The data targeted a sample of 234 respondents from the commercial banks in Kenya from which only 152 filled in and returned the questionnaires making a response rate of 64.9%. This response rate was fair and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting, a rate of 60% is good and a response rate of 70% and over is excellent.

Bio-Data

Figure4.2.1: Length the Period that the Bank has been in Operation
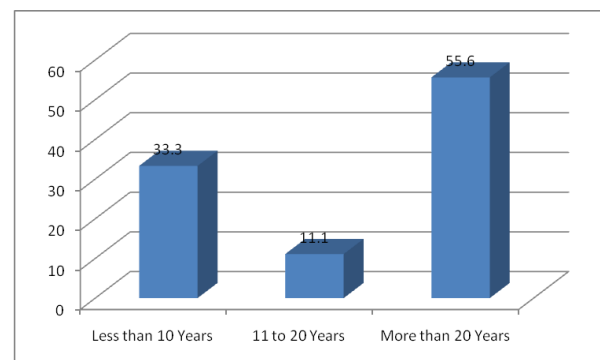
The study sought to establish the length of time that the bank has been in operation and the data presented in table 1 above. According to the table, 55.6% of the banks have been in existence for more than 20 years, 33.3% have existed for less than 10 years while 11.1% have existed for between 11 to 20 years. This shows that majority of the banks studied have existed for more than 20 years pointing to wealth of experience in the banking field and hence the quality of data given.
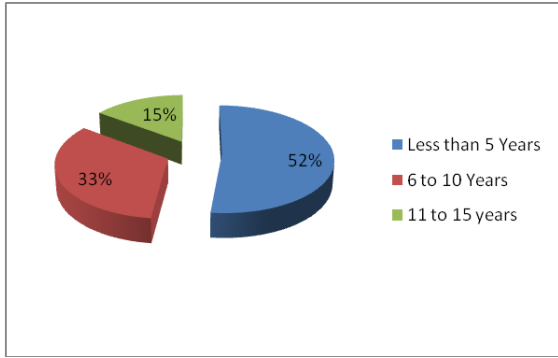
Figure4.2.2: Length the Period that the Respondent had worked in the Bank

To augment the above findings the study sought to establish the experience of the individual response on the matter concerning the particular bank they work for by inquiring the length of time they had worked at their respective banks. According to the data presented in figure 4.2.2, 52% of the respondents had worked for less than 5 years, 33% had worked for between 6 to 10 years while 15% had worked for between 11 to 15 years. This depicts that while majority of the bank had existed for more than 20 years, majority of the respondents had worked at the bank for less than 5 years.
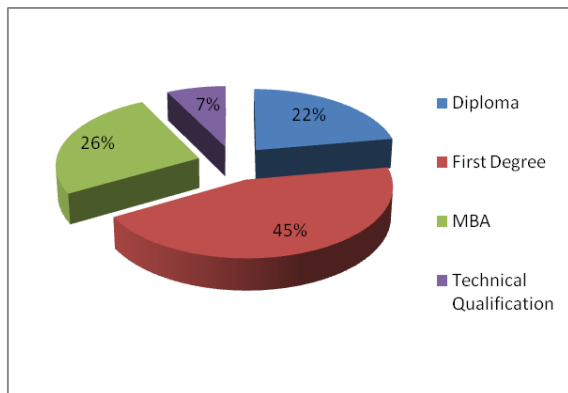

Figure4.2.1: Highest Level of Respondents' Education

The respondents were asked to indicate the level of highest academic or professional qualification they have attained and the findings presented in figure 3 above. According to the figure, 45% were first degree graduates, 26% had their MBAs, 22% had diplomas while 7% had only technical qualifications. This point towards the fact that majority of the credit risk officers had at least first degrees and hence could be in a position to make sound credit policies.
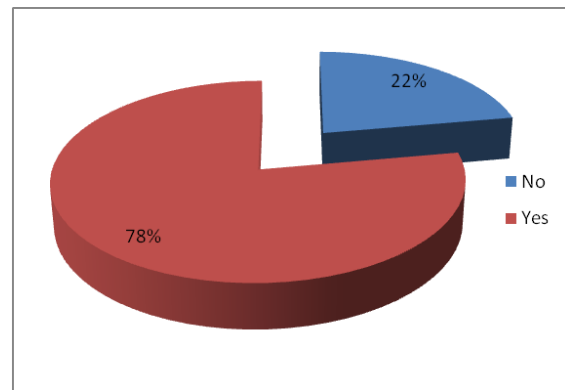

Figure4.2. 2: Whether the Respondent is Involved in Offering Credit in the Bank

To confirm the above, the study sought to establish whether the respondents were involved in providing credit in the bank and presented the data in figure 4 above. According to the figure, 78% admitted to offering credit while 22% did not.

Market Structure

The study sought to determine to what extent market structure/condition influence interest rate spread among commercial banks in Kenya.

Table4.3. 1: Extent that market structure influence interest rate spread

	Frequency	Percentages
Very great extent	52	34.2
Great extent	50	32.9
Moderate extent	35	23.0
Little extent	15	9.9
Total	152	100.0

From the findings, market structure or condition influence to a very greater extent interest rate spread among commercial banks in Kenya as expressed by 34.2%. 32.9% of the respondents indicated that market structure or condition influenced to a great extent the interest spread among commercial banks in Kenya. 9.9% of the respondents claimed that market structure to a little extent influenced interest rate spread among commercial banks.

Table4. 2: extent to which aspects of market structure influence interest rate spread

	Mean	Std. Deviation
Liquidity ratio	3.8590	0.95814
91day T-bill rate	3.5360	0.77691
Operating inefficiency	3.9471	0.70199
Money supply	3.0726	0.89821
Statutory reserve requirements Financial liberalization	3.8480	0.96159
Public sector share of credit	3.7590	0.95814
Market power	2.5360	0.77691

Majority of the respondents agreed that inflation rate, liquidity ratio, 91day T-bill rate,

operating inefficiency, public sector share of credit and statutory reserve requirements financial liberalization influenced interest rate spread at a great extent as expressed by a mean score of 4.2185, 3.8590, 3.5360, 3.9471, 3.7590 and 3.8480 respectively. The respondents indicated that money supply and market power moderately influenced interest rate spread as expressed by a mean score of 3.0726 and 2.5360 respectively. This finding is reinforced by theory as presented by Nannyonjo (2002) in which Financial sector liberalization in particular has been at the root of many recent cases of high interest rate spreads, bankruptcy of financial institutions and lack of monetary control. However this contradicts the ever revered McKinnon (1973) financial repression hypothesis which contends otherwise.

Credit Risk

The study sought to establish the extent to which credit Risk influence interest rate spread among commercial banks in Kenya.

Table4.4.1: Extent that credit Risk influence interest rate spread among commercial banks in Kenya

	Frequency	Percentages
Very great extent	50	32.9
Great extent	45	29.6
Moderate extent	32	21.1
Little extent	25	16.4
Total	152	100.0

From the findings, the respondents indicated that credit risk influence interest rate spread to a very great extent as shown by 32.9%, 29.6%

of the respondents indicated that credit risk influence interest rate spread to a great extent. With only 16.4% of the respondents who indicated that credit risk influence interest rate spread among commercial banks to a little extent. This concurs with Keeton and Morris' (1987) study which found that commercial banks with greater risk appetite given inappropriate credit risk management tend to record higher losses.

Table4.4.4.2: Extent to which various aspects influence interest rate spread

	Mean	Std. Deviation
Quality of loans	3.5040	0.92611
Borrower's quality	3.9560	0.83569
Financial distress	3.6240	0.90258
Collateral position	3.4080	0.92949

Majority of the respondents indicated that the risks that affect interest rate spread to a great extent include financial distress, quality of loans and borrower's quality as shown by a mean score of 3.6240, 3.5040, and 3.9560 respectively. The study however deduced that collateral position affect interest rate spread to a moderate extent as shown by a mean score of 3.4080. These results concur with Quaden (2004 findings that a more efficient banking assessment system benefits the real economy by lowering borrowing costs for investing in new projects that need external finance thus reduce spread.

Access to Information and Distribution of Market Power

The study also assessed the influence of access to information and distribution of market power on the spread of interest rate. The response of the respondents are shown in the table below

Table 4.5.1: Extent of access to information and distribution of market power influence on interest rate spread

	frequency	percentage
very great extent	56	37
great extent	71	47
moderate extent	23	15
little extent	11	7
no extent	0	0
total	152	100

The study found out that majority of the respondents ascertained that regulation influenced interest rate spread to a great extent as shown by 47%, very great extent by 37%, moderate extent 15% and to a little extent by 7%.

Table4. 3: Extent to which the various statements influence interest rate spread among commercial banks in Kenya

	Mean	Std. Deviation
Market shares of loans and advances	4.4240	0.84159
Regulated savings deposit rate	4.0969	0.80502
Reserve requirements/Provision for loan losses	3.7884	0.92749
Industry concentration	3.6320	.93788
Access to credible information	3.5242	.89255
Operating costs including non-interest expenditure	3.4265	.84325
Regular monitoring of risk elements and asset-liability gaps	3.2658	.79652

From the findings, the aspect of market shares of loans and advances, regulated savings deposit rate, reserve requirements/provision for loan losses, Industry concentration and access to credible information influence interest rate spread to a great extent as shown by means of 4.4240, 4.0969, 3.7884, 3.6320 and 3.5242 respectively. The findings further established that the aspect of Operating costs including non-interest expenditure and regular monitoring of risk elements and asset-liability gaps influence interest rate spread to a moderate extent as showed by means of 3.4265 and 3.2658 respectively.

Regulation

The study sought to find out extent to which regulation influence interest rate spread among commercial banks in Kenya.

Table4.6.1:   Extent to which regulation influence interest rate spread among commercial banks

	Frequency	Percentages
Very great extent	60	39.5
Great extent	45	29.6
Moderate extent	35	23.0
Little extent	12	7.9
Total	152	100.0

From the findings, majority of the respondents indicated that regulation to a very great extent influence interest rate spread among commercial banks as shown by 39.5% with only 7.9% who pointed out that regulation influence interest rate spread to a little extent. This is in line with Demirguc-Kunt and Huizinga (1997) found that better contract enforcement and efficiency of the legal system (regulations) are associated with lower realized interest margins.

Table4.6.2: Extent to which various statements influence interest rate spread

	Mean	Std. Deviation
Central bank guidelines	3.5040	0.92611
Kenya banking association policies	3.9560	0.83569
International prudential guidelines	3.6240	0.90258

Regulation affect interest rate spread in commercial banks. From majority of the respondents, it was established that the aspects of central bank guidelines, international prudential guidelines and Kenya banking

association policies to a great extent influenced interest rate spread as illustrated by a mean score of 3.5040, 3.9560 and 3.6240 respectively. This could be explained by the fact that banks are driven by profit maximization and can achieve this through interest margin, that is, lending minus deposit interest rates (interest rate spread) therefore the policies fosters the spread rather than reduces it. Sinkey and Greenwalt (1991) found that internal factors such as high interest rates and excessive lending (moral hazards) are attributed to long loan interest rate spread but can be reduced by proper regulations.

Trend of Interest Rate Spread

The study also sought to determine the trend of Interest rate spread among commercial banks for the last five years. The results of the findings are as tabled below

Table4.7.1: trend of interest rate spread

	Mean	Std. Deviation
Interest on loans and the interest paid on deposits difference	3.3040	0.82611
Inter-bank interest rate volatility	3.4560	0.83569
Share of commercial bank public sector loans	4.4240	0.95258

It was established that the share of commercial bank public sector loans had improves as shown by a mean of 4.4240. Inter-bank interest rate volatility and Interest on loans and the interest

paid on deposits difference was constant as shown by means of 3.4560 and 3.3040 respectively.

Regression Analysis

Table4.8.1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.809	0.655	0.609	0.195

Table 4.8.1 above is a model fit which establish how fit the model equation fits the data. The adjusted R^2 was used to establish the predictive power of the study model and it was found to be 0.609 implying that 60.9% of the variations in interest rate spread are explained by market structure/condition, credit risk, information and distribution of market power and regulation leaving 39.1% percent unexplained. Therefore, further studies should be done to establish the other factors (39.1%) affecting interest rate spreads among commercial banks.

Table4.9: ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.041	4	0.608	14.409	6.356E-08
	Residual	1.604	147	0.042		
	Total	4.645	151			

The probability value of 6.356E-08 indicates that the regression relationship was highly significant in predicting how market structure/condition, credit risk, access to information and distribution of market power and regulation affected interest rate spreads among commercial banks. The F calculated at 5

percent level of significance was 14.409 since F calculated is greater than the F critical (value = 2.4495), this shows that the overall model was significant.

Table4.10: Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.351	0.432		3.127	3.38E-03
	Market Structure	0.601	0.196	0.146	3.684	7.13E-04
	Credit Risk	0.364	0.113	0.126	5.867	8.66E-07
	Access to Information and Distribution of Market Power	0.664	0.148	0.045	5.899	7.84E-07
	Regulation	0.511	0.162	0.142	3.154	3.14E-03

The established model for the study was:

$$Y = 1.351 + 0.601\ X_1 + 0.364\ X_2 + 0.664\ X_3 + 0.511\ X_4$$

The regression equation above has established that taking all factors into account (market structure, credit risk, information and distribution of market power and regulation) constant at zero interest rate spreads among commercial banks was 1.351. The findings presented also show that taking all other independent variables at zero, a unit increase in the Market Structure would lead to a 0.601 increase in the scores of interest rate spreads among commercial banks and a unit increase in the scores of credit Risk would lead to a 0.364 increase in the scores of interest rate spreads among commercial banks. Further, the findings shows that a unit increases in the scores of information and distribution of market power would lead to a 0.664 increase in the scores of co interest rate spreads among commercial banks. The study also found that a unit increase in the scores of Regulation would lead to a 0.511 increase in the scores of interest rate spreads among commercial banks. Overall, information and distribution of market power had the greatest effect on the interest rate spreads among commercial banks, followed by market structure/condition, then government regulations while credit risk had the least effect to the interest rate spreads among commercial banks. All the variables were significant (p<0.05).

SUMMARY OF THE FINDINGS CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter presents the summary of findings, which guide the overall conclusions and recommendations of the research. The findings answered the research questions and addressed the objectives of the study.

Summary of the Findings

Market structure

The study revealed that market structure influence to a very greater extent interest rate spread among commercial banks in Kenya as expressed by 34.2%. 32.9% of the respondents indicated that market structure influenced to a great extent the interest rate spread. 9.9 % of the respondents claimed that market structure to little extent influence interest rate spread among commercial banks. Majority of the respondents agreed that inflation rate, liquidity ratio, 91day T-bill rate influence interest rate spread to a great extent as expressed by a mean score of 4.2185, 3.8590, and 3.5360 respectively. Operating inefficiency, public sector share of credit and statutory reserve requirements financial liberalization also influenced interest rate spread to a great extent as expressed by a mean score of 3.9471, 3.7590, and 3.8480 respectively. The respondents indicated that money supply and market power moderately influenced interest rate spread as expressed by a mean score of 3.0726 and 2.5360 respectively.

Credit risk

On the topic of credit risk, the respondents indicated that credit risk influence interest rate spread to a very great extent as shown by 32.9%, the respondents also indicated that credit risk influence interest rate spread to a great extent as expressed by 29.6%. 16.4% of the respondents indicated that credit risk influence interest rate spread among commercial banks to a little extent. Majority of the respondents indicated that the risks that affect interest rate spread to a great extent include financial distress, quality of loans and borrower's quality as shown by a mean score of

3.6240, 3.5040, and 3.9560 respectively. The study however deduced that collateral position affect interest rate spread to a moderate extent as shown by a mean score of 3.4080.

Access to Information and Distribution of Market Power

The study found out that access to information and distribution of market power relationship influence interest rate spread to a greater extent among commercial banks in Kenya as shown by 47%. 37% of the respondents showed that access to information and distribution of market power relationship influenced interest rate spread to a very great extent. Majority of the respondents were of the view market shares of loans and advances, regulated savings deposit rate, reserve requirements/provision for loan losses, Industry concentration and access to credible information influence interest rate spread greatly influenced interest rate spread in commercial banks as expressed by the following means score 4.4240, 4.0969, 3.7884, 3.6320 and 3.5242respectively.

Regulation

Majority of the respondents indicated that regulation influenced interest rate spread among commercial banks to a very great extent as shown by 39.5%. It became clear that regulation influence interest rate spread to a little extent (7.9%). From majority of the respondents, it was established that the aspects of central bank guidelines, international prudential guidelines and Kenya banking association policies influenced interest rate spread to a great extent as illustrated by a mean score of 3.5040, 3.9560 and 3.6240 respectively.

Conclusion

The study concludes that market structure influence to a greater extent interest rate spread among commercial banks in Kenya. Moreover financial sector liberalization was found to have a slightly significant effect on the interest rate spreads but with a wrongly signed coefficient. Various aspects of market structure or conditions do influence the interest rate spread such as inflation rate, liquidity ratio, 91 day T-bill rate to a great extent.

Operating inefficiency, public sector share of credit and statutory reserve requirements financial liberalization were also pointed out as aspects that influence interest rate spread. Money supply and Market power moderately influenced interest rate spread. Credit risk financial distress, quality of loans and borrower's quality also influence interest rate spread to small extent. Credit risk (CR) was found to be weak in explaining the currently wider interest rate spreads in Kenya. This is illustrated by the small value of its coefficient. This indicates that in the long run, Credit risk could probably have an indirect relationship with the interest rate spreads may be via increased cost of doing business in banks as they spend more on borrower screening and loan recovery efforts or for being risk averse.

Regulation also influenced interest rate spread among commercial banks to a great extent and aspects such as central bank guidelines, international prudential guidelines and Kenya banking association policies influence interest rate spread. In Kenya, banks specific policies and regulations are the responsibility of board of directors, managing directors and credit risk management committees. This concurs with Demirguc-Kunt and Huizinga (1997) finding that stringent regulations enforced by central banks lower realized interest margins (spread) and subsequently loan non-performance.

The study concludes that access to information and distribution of market power relationship influence interest rate spread to a greater extent and aspects such as market shares of loans and advances, regulated savings deposit rate, reserve requirements/provision for loan losses, Industry concentration and access to credible information influence interest rate spread to a great extent thus need to be addressed carefully. This is in line with Chirwa et al (2004), who postulate that economic theory posits that competitive pressures that result from conditions of free entry and competitive pricing will raise the efficiency of intermediation by decreasing the spreads between deposits and lending rates. He further states that interest rate spreads are positively related to market power.

The study finally concludes that information and distribution of market power had the greatest effect on the interest rate spreads among commercial banks, followed by market structure then government regulations while credit risk had the least effect to the interest rate spreads among commercial banks.

Recommendations

It is recommended that commercial banks move from their traditional mechanisms used to control credit risk, to loan portfolio restructuring. Other options that could be tried for dealing with credit risk include loan sales

and debt-equity swaps but all of which require developed capital markets.

The low coefficient implies that credit risk is not form the basis for banks' decision to charge higher spreads. Nevertheless, this may reflect deficiencies in assessing of credit risk due to lack of capacity in the local banks. This therefore implies the need for capacity building within the individual bank's human and technology resources for better credit risk assessment and management.

Banks should also apply efficient and effective credit risk management that will ensure that loans are matched with ability to repay, no or minimal insider lending, loan defaults are projected accordingly and relevant measures taken to minimize the same. The banks should also enhance periodic/regular credit risk monitoring of their loan portfolios to reduce the level of NPL.

The central banks should apply stringent regulations on interest rates charged by banks so as to regulate their interest rate spread. Commercial banks should also apply rigorous policies on loan advances so as loans are awarded to those with ability to repay and mitigate moral hazards such as insider lending and information asymmetry.

Suggestion for Further Studies

The empirical results reveal the fact that many of the factors commonly believed to be salient determinants of interest rate spreads may not be as vital as earlier perceived. Those that have been revealed to have a significant impact at the different levels of significance are wrongly signed from the expected. It is therefore recommended that a multidimensional approach to policy directed to narrowing interest rate spreads (IRS) be adopted. This study could be complimented if more research is carried out on the quality of credit risk management systems and interest rate spreads in Uganda's Banking system.

The study recommends that further research should be done on the influence of the different types of interest rates on interest rate spread in Kenya. This would augment this study for whereas different interest rates affect borrowers differently, little studies have been done on the same.

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