

**DETERMINANTS OF INTEREST RATES SPREAD IN THE BANKING SECTOR
IN KENYA**

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DECLARATION

I declare that this Research Project is my original work and has not been submitted for an award of a degree in any other University for examination/academic purposes.

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This Research Project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

This project is dedicated to my dear husband and children.

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It has been an exciting and instructive study period in the University of Nairobi and I feel privileged to have had the opportunity to carry out this study as a demonstration of knowledge gained during the period studying for my master's degree. With these acknowledgments, it would be impossible not to remember those who in one way or another, directly or indirectly, have played a role in the realization of this research project. Let me, therefore, thank them all equally.

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ABSTRACT

The main purpose of the study was to establish the determinants of banking sector interest rate spreads in Kenya. The study adopted the use of descriptive design. For the research purpose, secondary data was collected for a 33 year period 1981 to 2013 from the EAC statistic portal, IMF statistics portal and KNBS database. The secondary data on interest rate spreads and its determinants namely; Bank Development, Annual Real per capita GDP, Statutory reserve requirements, Inflation, Exchange Rate Volatility, Government Borrowing from the Banking Sector, Discount Rate and Treasury Bill Rate were regressed in a multiple regression model which established statistically significant relationships between treasury bill rates, reserves and discount rate. The study thus recommends for policy formulation to protect deposit protection so as to reduce the effect of bank reserve requirements as a cost to banks which is passed on to the consumers in form of interest rate spreads. The study further recommends advanced causality and impulse response studies on the interest rate spreads and its determinants.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGMENTS	iv
ABSTRACT	v
LIST OF ABBREVIATIONS	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.1.1. Interest Rate Spreads.....	1
1.1.2 Factors Affecting Interest Rate Spreads	2
1.1.3 Relationship between Factors and Interest Rate Spreads.....	3
1.1.4 Interest Rate Spreads in Kenya.....	5
1.2 Research Problem	6
1.3 Objectives of the study.....	8
1.4 Value of the Study.....	8
CHAPTER TWO: LITERATURE REVIEW	10
2.1 Introduction	10
2.2 Review of Theories.....	10
2.2.1 The International Fisher Effect.....	10
2.2.2 The Fisher Hypothesis.....	10
2.2.3 Prospect Theory.....	11
2.3 Determinants of Interest Rate Spreads.....	11
2.3.1 Market Determinants of Interest Rate Spreads	11
2.3.2 Macroeconomic Determinants of Interest Rate Spreads.....	12
2.4 Empirical Literature	14

2.5 Summary of Empirical Review.....	18
CHAPTER THREE: RESEARCH METHODOLOGY	23
3.1 Introduction	20
3.2 Research Design.....	20
3.3 Population and Sample.....	20
3.4 Data Collection	20
3.5 Data Analysis.....	21
3.6 Test of significance.....	22
CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS.....	23
4.1 Introduction	23
4.2 Descriptive Statistics	23
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.....	29
5.1 Summary of Findings.....	29
5.2 Conclusions	30
5.3 Policy Recommendations	31
5.4 Limitations of the Study.....	31
5.5 Suggestions for further Research.....	32
REFERENCES.....	33

LIST OF ABBREVIATIONS

CBR	-Central Bank Rate
CPI	-Consumer Price Index
GDP	-Gross Domestic Product
IRS	-Interest Rate Spreads
KBA	- Kenya Bankers Association
KBRR	-The Kenya Banks' Reference Rate (KBRR)
NIM	-Net Interest Margin
OLS	-Ordinary Least Squares
TBILL	-Treasury Bill Rate
WADR	-Weighted Average Deposit Rate
WALR	-Weighted Average Lending Rate

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

An efficient and vibrant commercial banking and financial system are essential ingredients for the growth of a market economy (Kohli, 2008). Commercial banks mobilize savings by offering various types of deposit products to savers and channel such savings as loans and advances to borrowers and investors. The difference between the rates at which banks lend money to borrowers and the rate they are paying to depositors are generally known as —Interest Rate Spread (IRS). The efficiency of the banking system is reflected by a series of financial indicators and more importantly by Interest Rate Spread and Net Interest Margin (NIM) (Sologoub, 2006).

1.1.1. Interest Rate Spreads

Interest rate spread is defined by market microstructure characteristics of the banking sector and the policy environment. In differentiating between the pure spread and the actual spread Ho and Saunders (1981) observe that pure spread is a microstructure phenomenon, influenced by the degree of bank risk management, the size of bank transactions, interest rate elasticity and interest rate variability. Zarruk (1989), considering risk management by the bank, found that risk-averse banks operate with a smaller spread than risk-neutral banks, while Paroush (1994) explains that 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. Hanson and Rocha (1986) emphasize the role of direct taxes, reserve requirements, cost of transactions and forced investment in defining interest rate spread.

The spread or margin between lending and deposit interest rates is a key variable in the financial system. It reflects the additional cost of borrowing related to intermediation activities performed by banks in linking borrowers with the ultimate fund lenders. When it is too large, it can contribute to financial disintermediation as it discourages potential savers with too low returns on deposits and limits financing for potential borrowers, thus

reducing feasible investment opportunities and therefore the growth potential of the economy.

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 channeling them into productive uses are much larger (Jayaraman and Sharma, 2003).

1.1.2 Factors Affecting Interest Rate Spreads

Independent studies (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. These factors 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.

Despite the liberalization of the financial sector, high interest rate spreads is still an issue of concern in a number of African countries, including Kenya. Financial liberalization refers to the reduction of any regulation on the financial sector of any given country. It refers to the removal of restrictive barriers that may hinder the smooth performance of

this sector. Financial liberalization has been the subject of controversy by many economists. Some argue that this scenario promotes economic growth while others feel that it induces excessive risk-taking, increases macro-economic volatility and leads to more frequent crises (Ahmed and Islam, 2009).

Pill and Pradan, (1997) suggest that in most developing nations, the banking industry dominates the financial structure and securities are not well developed. Basu (2002) argue that restrictions on bank behavior imposed by the government often result in negative real interest rates and an excess demand for credit requiring banks to ration their lending.

Since the liberalization of interest rates charged by banks in 1990's, huge spreads have been witnessed in several instances. The persistence of high interest rate spreads has been a disquieting outcome of the financial liberalization in Kenya. One of the expected benefits of financial liberalization and deepening of the financial sector was the narrowing of the interest rate spreads. This was predicated on the understanding that liberalization enhances competition and efficiency in the financial sector. The efficiency of financial intermediation can affect economic growth. Crucially, financial intermediation affects the net return to savings and the gross return to investment (Demirguc-Kunt and Huizinga, 1999). Thus, a wide deposit-lending interest rate spread could be indicative of banking sector inefficiency or a reflection of the level of financial development (Folawewol and Tennant, 2008).

1.1.3 Relationship between Factors and Interest Rate Spreads

In using interest rates, first the Central Bank sets a target inflation rate and then interest rates are steered to move inflation to its intended levels. In this case, interest rates are increased when the inflation rate is above the target rate, and reduced when inflation is below the target rate. A reduction in the official rate for instance, encourages the commercial banks to borrow money from the Central Bank, thereby increasing money supply in the economy. In addition, Interest rates are affected by the (C.B.R) in the sense that either they move up when the (C.B.R) also rises or down when the same happens to the (C.B.R). The Kenya Banks' Reference Rate (KBRR) in Kenya which incorporates the CBR is at 9.13% as at August, 2014 (CBK, 2014). In addition, C.B.R reflects the rate of inflation in the economy, hence when the inflation rate is up, interest rates will also rise.

Inflation is a critical factor in the economy, it creates problems for housing finance as it increases the level of interest rates (to compensate for expected future price increases) and their variability. According to World Bank (2009), the appropriate class of instruments for a market will depend on the inflationary environment (both the level and the volatility of prices and interest rates).

In addition, the KBRR was developed as part of the recommendations to enhance the supply of private sector credit and mortgage finance in Kenya by facilitating a transparent credit pricing framework. It will be the base rate for all commercial banks' lending. Given that one of the components of the KBRR is the CBR, this framework is expected to enhance the transmission of monetary policy signals through commercial banks' lending rates. It will be computed as an average of the CBR and the weighted 2-month moving average of the 91-day Treasury bill rates. The KBRR will be reviewed and announced by the CBK through MPC Press Releases after every six months (if conditions do not drastically change) from the effective date and operationalized through a Banking Circular.

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 (Central Bank of Solomon Islands, 2007; KBA, 2012). 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.

Credit risk also increases interest rate spreads. It is the risk of loss due to the inability or unwillingness of a counter-party to meet its contractual obligations (CBK, 2012). 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. Hence banks will try as much as

possible raise the interest rates to compensate for any imminent losses for failed obligations or the probability of loss due to default.

1.1.4 Interest Rate Spreads in Kenya

Crowley (2007) and Barajas, Roberto and Natalia (1998) define interest rate spread as the difference between the weighted average lending rate (WALR) and the weighted average deposit rate (WADR). Wider spreads are always a proxy for an underdeveloped financial system characterized by inefficiency, lack of competition and higher concentration of the banking sector; among others and the reverse is also perceived to be true (Demirguc - Kunt and Huizinga, 1999; Mlachila and Chirwa, 2002; Mugume and Ojwiya, 2009). Banking systems in developing countries have been shown to exhibit significantly and persistently large intermediation spreads on average than those in developed countries. However the difference arises in the causal factors.

Over the past few years, there has been volatility on the bank lending rates in Kenya. This has been occasioned by the actions of the Central Bank of Kenya (CBK). When the CBK reduced its base lending rates to commercial banks in 2010, commercial banks reduced their lending rates to customers and this saw many people taking up loans in order to take advantage of the low bank lending rates. The banks were literally hawking loans to customers. However, towards the end of 2011, when faced with high volatility on the foreign exchange rates, the CBK rescinded its move and increased the base lending rates to commercial banks. This saw a rise in bank lending rates. During the same period, inflation rates moved from 6.54 when interest rates were 13.92 to close the year at 18.93 when the interest rates were at 20.04. From this, it can be deduced that interest rates may have influenced the inflation rates over the period or vice versa.

In addition, Kenyan Banks charge high or huge interest rate spreads as explained in KBA (2012) consumer report because of macroeconomic instability characterized by high inflation, unstable foreign exchange rates, high cash reserve requirement and slow economic growth leading to high incidences of non-performing loans. For example, from Central bank of Kenya 2013 Annual Report, The stock of gross non-performing loans (NPLs) increased by 34.4 percent from Ksh 57.5 billion in June 2012 to Ksh 77.3 billion

in June 2013. Similarly, the ratio of gross NPLs to gross loans deteriorated from 4.5 percent in June 2012 to 5.3 percent in June 2013.

The Central Bank of Kenya has been trying to address the issue of wide Interest Rate Spread by communication of bank charges, interest rates and lending rates for all banks as a means of promoting market discipline and competition among the players. This is done through quarterly survey on bank charges, interest rate and lending rates. The aim of this exercise is to educate the public to make informed banking decisions. However, such efforts by the Central Bank of Kenya have not been able to achieve the desired results of narrowing the IRS to international levels.

High IRS is causing high cost to borrowers and investors. On the other hand, it reduces the deposit income of the depositors. As a result, a new Central Bank of Kenya Law is in the offing to cap high interest rate. It must however be noted that previous legislative efforts to cap the high interest rates have failed, for example, the proposed amendments to the Finance bill of 2011 and Joe Donde's proposal of 2001.

In Kenya, the banking sector plays a dominant role in the financial sector, particularly with respect to mobilization of savings and provision of credit. An analysis of bank interest rate spreads is therefore central to the understanding of the financial intermediation process and the macroeconomic environment in which banks operate. This paper is motivated by the fact that although Kenya's financial sector was liberalized in the early 1990s to allow for market determination of interest rates, concerns about high interest rate spreads have persisted and attracted a lot of debate in both public and private policy forums. However, there has been little empirical research on this issue, particularly with respect to the analysis of interest rate spreads at the micro or bank level. The aim of this study is therefore to empirically investigate factors (both bank – specific and macroeconomic factors) that determine interest rate spreads in Kenya.

1.2 Research Problem

Barajas et al. (1999) held that a key variable for the financial system is the difference between interest rates on deposits and interest rates on credits. The author notes that when this difference is large, it is regarded as an impediment to the expansion and development

of the financial intermediation system, as it discourages potential savers with low returns on deposits and limits financing for potential borrowers, thus reducing feasible investment opportunities and therefore the growth potential of the economy. Interest rate spreads (IRS) have been found to be higher in African countries (including Kenya), Latin American and the Caribbean countries than in OECD countries (Randall, 1998; Brock and Rojas-Suárez, 2000; Chirwa and Mlachila, 2004; Gelos, 2006; Crowley, 2007). These high spreads have frequently been attributed to such factors as high operating costs, financial taxation or repression, lack of competition, and high inflation rates (Chand, 2002 and Asian Development Bank, 2001).

Banks, in their role as financial intermediaries, face substantial uncertainty which can add to spreads. Due to uncertainty, banks would require a risk premium to compensate for the added volatility. Higher inflation or higher interest rates would be sources of uncertainty, and several studies have confirmed this relationship. Demirguc-Kunt and Huizinga (1999) and Banco Central do Brasil (1999) found a relationship between inflation and uncertainty. Demirguc-Kunt and Huizinga (1999) found a relationship between interest rates and uncertainty. Therefore, changes in inflation or interest rates would seem more directly related to uncertainty. Ho and Saunders (1981) found that interest rate volatility leads to larger spreads. Variability of the exchange rate could also be a source of uncertainty.

During the post-liberalization period, we expect the spread to narrow to reflect efficiency gains and reduced transaction costs with the removal of distortionary policies and strengthening of the institutional arrangements. However, Kenya's experience indicates a widening spread in the post liberalization period. This has important implications for the growth and development of Kenya, as there is a critical link between the efficiency of bank intermediation and economic growth (Kohli, 2008).

Interest rate spreads (IRS) in an economy has important implications for the growth and development of such economy, as numerous authors suggest, there is 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. Ndung'u and Ngugi (2000) therefore conclude that when the banking sector's interest rate spread is large, it discourages potential savers due to low returns on deposits and thus limits financing for potential borrowers.

Despite the ongoing financial sector reforms, which are aimed at enhancing competition, the interest rate spread in Kenya, instead of narrowing down, has been either stagnant or growing. This paper attempts to fill this gap in the Kenyan case by undertaking a comprehensive study on the factors behind the high interest rate spread in Kenya. Based on data released under the mandatory annual disclosure statements of commercial banks required under the Banking Act and by the Central Bank of Kenya, this paper examines the trends of interest rate spread for the period 1991 to 2013, and it advances the causes of the levels of interest rate spreads evidenced.

1.3 Objectives of the study

The overall objective of this study was to analyze the level and trends in interest rates spreads and to document the key macroeconomic and market determinants of interest rate spreads in Kenya over the period 1991 – 2013 with the following specific objectives:

- i). To determine the levels and trend in interest rate spreads in Kenya
- ii). To determine the determinants of interest rate spreads in Kenya

1.4 Value of the Study

The study adds to the body of knowledge, specifically in regard to interest rate spreads in Kenya in light of the fast changing banking environment and hopefully ignites the need for further research especially looking into competition and risks arising in the sector. It adds to existing literature, and is an invaluable tool for students, academicians, institutions, corporate managers and individuals who want to know more about Interest rate Spreads (IRS) in Kenya.

Policy makers would infer from the study on government initiatives for financial deepening and bank regulation. The study enables the bank's executives and the policy makers of the banks and other financial institutions to be aware of the role of interest rate spreads. The research is significant to banking sector promoters because it provides answers to factors explaining their competitiveness and performance. Proof of the success and growth associated with implementation of Interest Rates Spreads highlights the areas of banking sector that can be enhanced through the management choices.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The determinants of interest rate spreads are categorized by Wendell and Valderrama (2006) as the macroeconomic environment, the banking sector's market structure, bank-specific factors, and financial regulation. This chapter reviews theoretical and empirical literature in three broad sections. It reviews the theoretical aspects of interest rate spreads, it also reviews empirical studies on interest rate spreads and finally discusses the knowledge gaps in the relevant literatures that the current study seeks to address.

2.2 Review of Theories

2.2.1 The International Fisher Effect

This is a hypothesis in international finance that says that the difference in the nominal interest rates between two countries determines the movement of the nominal exchange rate between their currencies, with the value of the currency of the country with the lower nominal interest rate increasing. This is also known as the assumption of Uncovered Interest Parity.

The International Fisher Effect proposes that the changes in the spot rate of exchange between two currencies will be equal to the differences in their nominal rates. For example, a rise in the Swedish inflationary rate relative to the US dollar will cause a depreciation of the Swedish Krona relative to the US dollar. The nominal interest rate in Sweden will also rise relative to the US nominal interest rate (Sundqvist, 2002)

2.2.2 The Fisher Hypothesis

Irving Fisher postulated that changes in expected inflation leave the real interest rate unaltered by inducing equal changes in the nominal interest rate. The Fisher effect has important implications for the behavior of interest rates and the rationality and efficiency of financial markets (Coppock and Poitras (1999). Fisher Neutrality Hypothesis documented by Peek and Wilcox (1983) indicate that nominal interest rates adjust to changes in the anticipated inflation rate so as to leave real interest rates unaffected.

Some studies have failed to detect the full Fisher effect. Instead, interest rates appear generally to adjust by less than point – for-point in response to changes in expected inflation. This evidence leads many authors to conclude that financial markets suffer from money illusion. Since studies typically focus only on the short-run, their inability to detect a full Fisher effect is perhaps not surprising as Fisher himself emphasized, the adjustment of nominal rates can be expected to occur only in the long-run. Recently, a number of studies have undertaken to test the hypothesis in the long-run, and have found support for a full Fisher effect. In particular, Duck (1993) finds evidence of a full Fisher effect by using long-term averages of inflation and interest rates for a cross section of countries.

2.2.3 Prospect Theory

This is a theory that describes decisions between alternatives that involve risk (i.e., alternatives with uncertain outcomes) where the probabilities are known. The model is descriptive: it tries to model real-life choices, rather than optimal decisions. The theory describes such decision processes as consisting of two stages, editing and evaluation. In the first, possible outcomes of the decision are ordered following some heuristic. In particular, people decide which outcomes they see as basically identical and they set a reference point and consider lower outcomes as losses and larger as gains. In the following evaluation phase, people behave as if they would compute a value (utility), based on the potential outcomes and their respective probabilities, and then choose the alternative having a higher utility (Sundqvist, 2002).

2.3 Determinants of Interest Rate Spreads

2.3.1 Market Determinants of Interest Rate Spreads

The market or industry-specific determinants of spreads that account for the impacts of the structure and development of the banking sector among others are prescribed reserve requirements, and economies/ diseconomies of scale, as determined by market size. The structure and development of the banking sector is usually captured using two proxies which are the Bank/GDP ratio and Real Per Capita GDP. As in Demirguc - Kunt and Huizinga (1998) the bank/GDP ratio (*BNKDEV*) is calculated as the total assets of commercial banks divided by current GDP. This ratio reflects the overall level of

development of the banking sector, and the level of inter-bank competition in well developed banking sectors. This ratio is expected to have a negative correlation with the dependent variable (interest rate spread), as an improvement in the level of banking sector development and competition should force down banking sector interest rate spreads (IRS). According to Demirguc-Kunt and Huizinga (1998) Real per capita GDP (*GDPpc*) should have a similar effect on IRS, as it is included as a general index of economic development, and should therefore reflect “differences in banking technology and the mix of banking opportunities”.

Prescribed reserve requirements are included as a market determinant of banking sector IRS, as such reserves reflect a burden associated with operating in the banking sector. A positive correlation between such reserves and IRS is expected, as high liquidity reserve requirements act as an implicit financial tax by keeping interest rates high. Chirwa and Mlachila (2004) explain by noting that, “the opportunity cost of holding reserves at the central bank, where they earn no or little interest, increases the economic cost of funds above the recorded interest expenses that banks tend to shift to customers.” They further argue that the large pool of resources created by high reserve requirements allow for the financing of high fiscal deficits, and thereby creates an environment of high inflation and persistently high intermediation margins.

Market size has an impact on banking sector IRS, as studies on small developing states suggest that diseconomies of scale may increase per unit costs in commercial banks, thus keeping spreads high according to Tennant and Folawewo (2007). This variable (*SCALE*) is expected to be negatively correlated with IRS, as banking sectors in countries with larger markets are more likely to benefit from economies of scale, thereby enabling them to keep their costs and spreads down.

2.3.2 Macroeconomic Determinants of Interest Rate Spreads

The macroeconomic determinants of Interest Rate Spreads included in this paper account for the impacts of macroeconomic instability and the macro-policy environment on banking sector IRS. Inflation (*INFL*) rate which is calculated as the percentage change in the consumer price index (CPI) is an indicator of the cost of doing business in an

economy, and it is expected to be positively correlated with IRS according to Chirwa and Mlachila (2004).

Macroeconomic instability is proxied by the variable exchange rate volatility (*XRATVOL*). This variable reflects the changes in interest and inflation rates in countries with freely-floating exchange rates. Exchange rate volatility for each quarter is calculated as the standard deviation of the percentage change in the real US\$ exchange rate for the three preceding quarters. Because increased macroeconomic instability increases the risk faced by commercial banks, *XRATVOL* is expected to be positively correlated with IRS, as the banking sector increases its spreads to protect against the increased risk (Chirwa and Mlachila, 2004).

The extent of government dependence on the domestic banking sector for the financing of its fiscal deficit captures the macro – policy environment. This variable (*CROWD*) measures for the entire banking sector, public sector borrowing as a percentage of total loans. Robinson (2002) notes that “the level of government borrowing and its influence on money and credit markets is an element of macroeconomic policy that imposes constraints on the flexibility on interest rates.” *CROWD* is therefore expected to be positively correlated with IRS, as governments’ heavy reliance on domestic banking sectors for deficit financing increases competition for funds and causes interest rates to rise.

Another macro-policy indicator, the discount rate (*DISRATE*), is defined as the cost faced by commercial banks when borrowing from the central bank. Although declining in popularity, the discount rate is still used as a monetary policy instrument. Even more importantly, it is expected to be positively correlated with IRS, as it increases the commercial banks’ cost of funds, which may be passed on to customers through higher spreads (Banda, 2010).

The Treasury Bill rate (*TBILL*) is generally regarded as an indicator of the interest rate policy being pursued by the government, and a benchmark for the rates charged by

commercial banks. This variable is therefore also expected to be positively correlated with IRS, because lower Treasury bill rates would lead to lower interest rate spreads and vice versa (Banda, 2010).

2.4 Empirical Literature

In Kenya, few studies exist that examine the interest spread determination. Ndung'u and Ngugi (2000) theoretically derived factors likely to explain the interest rate spread and empirically estimated an interest rate spread equation using monthly time series data for the period April 1993 to June 1999, they found that the spread are positively related with deposits but negatively related to loans. The study ignored macroeconomic indicators such as GDP and inflation.

Ngugi (2000) incorporated excess liquidity and non-performing loans ratio as explanatory variables and finds that arise in non-performing loans ratio leads to a rise in spreads while excess liquidity is negatively related with spreads. The study was undertaken at the macro level, mainly focusing on the macro industry level variables. Nonetheless, he also ignored macroeconomic indicators such as GDP and inflation.

Muguchia (2012) studies the effect of flexible interest rates and the results show a negative relationship between flexible interest rates and mortgage financing. The document argues that if banks charge a fixed rate of interest, it would be possible for investors to plan for a predictable amount of money to be repaid hence stability and increased level of borrowing. Other independent variables in the study include; inflation, non-performing loans, liquidity ratio and negative effects on mortgage financing, while money supply, GDP, customer deposits, bank capitalization and bank size had positive effect on mortgage financing. The study relied on secondary data from annual reports of the banks and regression analysis was mainly used to analyze the data.

Ngugi (2004) brought out that interest rates effect on the amount of credit to the economy is largely minimal. Instead the overall net credit available in Kenya financial industry is influenced more by other factors such as information asymmetry between the borrowers and the lenders, value of the reserve requirements, debit credit controls on the banking

system and perception of risk regarding the solvency of other banks within the banking system.

Matheri (2009) undertook an econometric analysis of macroeconomic and industry specific factors that influence behavior of ex-post interest rate spreads of thirty commercial banks in Kenya. The variables in the model namely exchange rate risk, treasury bill rate, statutory reserve requirements, public sector share of credit, liquidity ratio, operating inefficiency, market power, credit risks and quality of loans are not exhaustive of the market and macro-economic determinants of interest rate spreads.

Beck *et al* (2010) examine developments in Kenya's financial sector with a specific focus on stability, efficiency and outreach, and use interest rate spreads as a proxy for the efficiency of financial intermediation. They based their analysis on exposure constructed spreads and decompose the spreads into different components based on a set of factors such as overhead costs, loan loss provisions and taxes.

Also, Njongoro (2013) carried out a study on the effect of mortgage interest rate on the growth of mortgage financing in Kenya and the research objective was to establish the effect of mortgage interest rates on the growth of mortgage financing. The research findings showed that total mortgage outstanding have been increasing while average interest rate generally increased in the period of study. A strong negative relationship was realized between mortgage interest rate and growth of mortgage financing. In overall the results indicate that mortgage interest rate and non-performing loans are not adequate predictors of growth of mortgage market as indicated by the coefficients.

Were and Wambua (2012) investigated the determinants of interest rate spreads in Kenya's banking sector based on panel data analysis. The empirical results showed that bank-specific factors play a significant role in the determination of interest rate spreads. These include bank size based on bank assets, credit risk as measured by non-performing loans to total loans ratio, liquidity risk, return on average assets and operating costs. The impact of macroeconomic factors such as real economic growth and inflation is not significant.

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 liberalized 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.

Beck and Hesse (2006) uses bank-level dataset on the Ugandan banking system to examine the factors behind the consistently high interest rate spreads and margins. While foreign banks have lower interest rate spreads, there is no robust and economically significant relationship between interest spread and privatization, foreign bank entry, market structure and banking efficiency. Similarly, macro-economic variables explain little of the over-time variation in bank spreads. Bank-level characteristics, on the other hand, such as bank size, operating costs, and composition of loan portfolio, explain a large proportion of cross bank, cross-time variation in spreads and margins. However, time-invariant bank-level fixed effects explain the largest part of bank variation in spreads and margins. Further, the study finds evidence that banks targeting the low end of the market incurred higher costs and therefore had higher margins.

Aboagye, *et al* (2008) studies the response of net interest margin of banks to changes in factors that are bank-specific, banking industry specific and Ghanaian economy macroeconomic factors. It finds that an increase in the following factors increases the net interest margin of banks: bank market power (or concentration), bank size, staff costs, administrative costs, extent to which a bank is risk averse and inflation. On the other hand, an increase in excess reserves of banks, central bank lending rate and management efficiency decreases the net interest margin of banks.

Nampewo (2013) studies the determinants of the interest rate spread of the banking sector in Uganda using time series data for the period 1995 – 2010. The study applies the Engle and Granger two-step procedure to test for co integration between the bank rate, treasury bill rate, exchange rate volatilities, the ratio of money supply to gross domestic product (M2/GDP) and the proportion of non-performing loans to total private sector credit. Results show that the interest rate spread in Uganda is positively affected by the bank rate, the Treasury bill rate and non performing loans. On the other hand, M2/GDP ratio

and real GDP have a negative influence on the spread. However the analysis is undertaken at macro level hence concealing micro and bank-specific characteristics.

Demirgüç-Kunt and Huizinga (1999) examined interest spreads in a cross-country set up using data covering commercial banks from 80 countries across the world. The study finds that differences in interest margins and bank profitability are explained by several factors such as bank characteristics, macroeconomic variables, explicit and implicit bank taxation and deposit insurance regulation.

Afanasieff *et al* (2002) applied the two-step approach of Ho and Saunders (1981) to study the interest rate spread in Brazil by estimating an unbalanced panel data model of 142 commercial banks using monthly data from February 1997 to November 2000. In the first step, it estimated a panel model with time dummy coefficients which are then used in the second step as the dependent variable on which a measure of interest rate risk and selected macroeconomic variables are used as regressors. Unlike most studies that define the interest rate margin based on interest income and interest expense, Afanasieff *et al* (2002) defines the spread on the basis of lending and deposit rates as posted by banks. They find that the spread is higher than the larger a bank is, the larger the operating costs, bank leverage, ratio of service revenues to operational revenues and ratio of non-interest bearing deposits to total operating assets. However, the spread is found to be negatively related to the ratio of interest-bearing funds to earning assets and foreign-ownership of banks.

Gambacorta (2004) studied factors explaining cross-sectional differences in bank interest rates of Italian banks by considering both micro and macroeconomic factors. The variables considered included: (i) loan and deposit demand (ii) operating cost, credit risk and interest rate volatility (iii) impact of monetary policy through changes in policy rates and reserve requirements and (iv) the structure of the industry. Results showed that interest rates on short term lending of liquid and well capitalized banks react less to monetary policy shocks. In addition, banks that predominantly lend for long term do not change their interest rates more frequently as those whose lending is largely for short term. Bank size was found to be irrelevant in influencing interest rate margins. According

to Gambacorta (2004), lending rates have a positive relationship with real GDP and inflation.

Maudos *et al* (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.

Grenade (2007) estimated the determinants of commercial banks interest rate spreads in the Eastern Caribbean Currency Union using annual panel data of commercial banks. 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.

Siddiqui (2012) estimated the interest rate spread in Pakistan based on individual bank specific factors using annual panel data of 22 banks. The variables included market share measured as a bank's deposits as a percentage of total deposits of the banking sector, liquidity risk variable, administrative expenses as a percentage of total assets, non performing loans as a percentage of net advances, net interest income as a percent of total income and return on assets after payment of tax as a percent of average assets. The spread is found to be significantly affected by administrative costs, non-performing loans and return on assets in all the regressions (pooled, fixed and random effects regressions).

2.5 Summary of Empirical Review

While a number of studies have investigated the effect of interest rate spreads, 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 Kenya found that commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans.

The approach used in much of the literature is to classify determinants of commercial banks interest rate spreads according to whether they are bank-specific, industry (market) specific or macroeconomic in nature. Moore and Craigwell (2000), Brock and Rojas-

Suarez (2000), Gelos (2006), Sologoub (2006), and Crowley (2007) note that the specific characteristics of commercial banks that are usually theorized to have an impact on their spreads include the size of the bank, ownership pattern, the quality of the loan portfolio, capital adequacy, overhead costs, operating expenses, and shares of liquid and fixed assets. Robinson (2002) further notes that the incidence of fraud, the ease with which bad credit risks survive due diligence, and the state of corporate governance within banks all lead to higher operating costs, asset deterioration and ultimately wider interest rate spreads. These studies all show that such bank-specific factors impact significantly on commercial banks' net interest margins. Notwithstanding this, Brock and Franken (2002) note that the results of many other studies suggest that individual bank characteristics are often not tightly correlated with interest rate spreads. It is asserted that this may be because spreads are largely determined at the industry level, thus making individual bank characteristics more relevant to other variables, such as bank profitability.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and the theoretical framework adopted in the study. It also highlights the econometric model that guides the study alongside the methodology of gathering data, operationalization of study variables and estimation of results.

3.2 Research Design

Research design refers to the way a study is planned and conducted, the procedures and techniques employed to answer the research problem or question. Accordingly, a research design entails choosing the subjects who participate in the study, the techniques and approaches for collecting data from the subjects, and the procedures for collecting the information. This study adopted a causal research design as it focuses on establishing the causal relationships between the dependent variable (interest rate spreads) and the various dependent variables namely the market determinants and the macro-economic determinants.

3.3 Population and Sample

In every research, the population refers to the entire group of people, events or things of interest that a researcher wishes to investigate. The target population refers to the complete group of specific population elements relevant to the research project. The target population for this study included all the commercial banks involved in holding of deposits and lending in Kenya. The central bank of Kenya has licensed 44 commercial banks. Because of the small number of the population, no sampling was conducted. The study was a census survey of all the banks.

3.4 Data Collection

This study used quarterly time series data for the period 2008 to 2013. The period chosen had been necessitated by the availability of data. The study made use of secondary data retrieved from the Central Bank of Kenya's published economic reviews and website.

3.5 Data Analysis

This study made use of ordinary least squares (OLS) method of estimation and the statistical package used is SPSS. The time series characteristics of the data are examined before actual estimation of the model. The data is tested for unit root using the ADF tests. Cointegration tests are carried out using the Johansen Maximum Likelihood Cointegration methodology. Cointegration analysis is essential in determining if the variables possess a long run relationship.

The determinants of banking sector interest rate spreads in Kenya are analyzed by the model derived from Tennant and Folawewo (2007) as:

$$IRS = f(BNKDEV, GDP_{pc}, RES, SCALE, INFL, XRATVOL, CROWD, DISRATE, TBILL) \quad (1)$$

The relationship between the banking sector IRS and its market and macroeconomic determinants is therefore specified as follows:

$$IRSt = \alpha_0 + \beta_1 BNKDEV_t + \beta_2 GDP_{pc,t} + \beta_3 RES_t + \beta_4 SCALE_t + \beta_5 INFL_t + \beta_6 XRATVOL_t + \beta_7 CROWD_t + \beta_8 DISRATE_t + \beta_9 TBILL_t + \epsilon_t \dots \dots \dots (2)$$

Where:

IRS (Interest Rate Spread) which is the difference between weighted average lending rate (WALR) and weighted average deposit Rate (WADR WALR) for commercial banks.

BNKDEV (Bank Development) - Total assets of commercial banks divided by current GDP.

GDP_{pc} - Annual Real per capita GDP

RES (Statutory reserve requirements) – CBK prescribed reserve requirements.

INFL (Inflation) -The inflation rate for Kenya calculated as the percentage change in the consumer price index (CPI).

XRATVOL (Exchange Rate Volatility) - Exchange rate volatility for each quarter is calculated as the standard deviation of the percentage change in the real US\$ exchange rate for the three preceding quarters.

CROWD (Government Borrowing from the Banking Sector) - public sector borrowing as a percentage of total loans.

DISRATE (Discount Rate) - cost to banks when borrowing from the central bank.

TBILL (Treasury Bill Rate) - 91 day Treasury bill rate.

N/B: Interest rate spread is the difference between the weighted average lending rate (WALR) and the weighted average deposit Rate (WADR) (Barajas et al., 1998; Central Bank of Solomon Islands, 2007; Crowley, 2007). In this study, data on interest rate spreads include the WALR and WADR from the research department of the Central Bank of Kenya.

3.6 Test of significance

In equation- 2, the researcher regress (Y) IRS (Interest Rate Spread indices on its determinants the Xs i.e. BNKDEV, GDPpc, RES, INFL, XRATVOL, CROWD, DISRATE and TBILL.

T-tests are used to test the significance of the relationship between interest rate spreads and its determinant variables. Tests are conducted on the data to establish the significance of the relationships between the variables.

Hypothesis test;

H0 – there is no relationship between interest rate spreads and its determinant variables.

H1- there is a relationship between interest rate spreads and its determinant variables.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter discusses the results of the analysis and findings of the study with reference to the study objectives. The first section of the chapter discusses a description of the data used in the analysis. The second section discusses the findings of the study as presented in tables and figures that help to explain the results of the data analysis. The third section of the chapter is a summary of findings and interpretation of the results of the study.

4.2 Descriptive Statistics

The objective of the study was to analyze the level and trends in interest rates spreads and to document the key macroeconomic and market determinants of interest rate spreads in Kenya. Secondary data obtained from the World Bank data portal, EAC statistics portal and KNBS database was compiled and analyzed in the Statistical Package for Social Sciences (SPSS). Table one below presents a summary of the description of the data used in the analysis.

Table 4.1: Descriptive Statistics

	N		Mean	Std. Deviation	Minimum	Maximum
	Valid	Missing				
Interest rate spreads	33	0	.08	.043	0	0
Bank development	33	0	.46	.056	0	1
Inflation	33	0	.10	.076	0	0
Reserve	33	0	3.08E8	1.980E8	133167412	882022295
Discount rate	33	0	.12	.052	0	0
Tbill rate	33	0	.16	.090	0	0
Exchange rate	33	0	.02	.017	0	0
Volatility						
Gdp	33	0	1.62E10	1.031E10	7127350265	44101114724
Crowd	33	0	.11	.027	0	0

As indicated in table 4.1 above, the mean interest rate spread for the 33 years period is 8%, the mean bank development indicator measured as domestic credit as a proportion of

GDP is 46%, mean inflation rate is 10%, mean discount rate is 12%, mean treasury bill rate is 16% and mean government borrowing from the domestic financial system (Crowd) is 11%. The mean central bank reserve requirement is Shs.308,000,000 and the man GDP is Kshs. 16,200,000,000. The movement in interest spreads over the years is presented in figure 4.1 below.

Figure 4.1: Interest rate spreads in Kenya

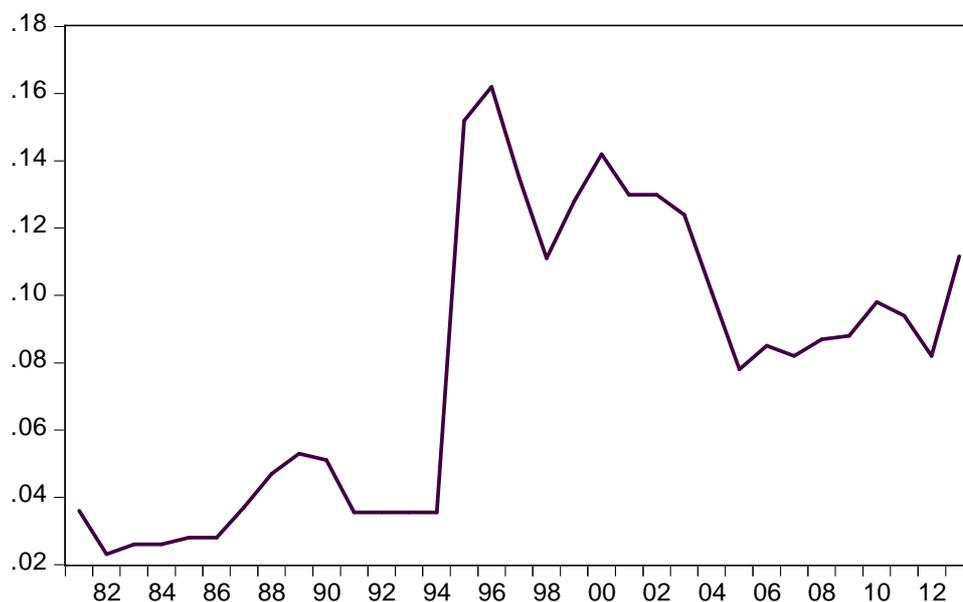


Figure 4.1: Interest rate Spreads in Kenya

As inferred from figure 4.1 above, the interest rate spreads in Kenya have not had a consistent growth or decline pattern over the years. In the early 1980s, the rates were below 3%, after which it gradually rose to 5% towards the end of the decade. The rates sharply increased after 1994 to a high of 16%. In 2002 to 2005, the rates gradually declined but have taken an increase trend thereafter.

Table 4.3: Relationship between Interest rate spreads and its determinants

Correlations

		Interest rate spreads	Bank development	Inflation	Crowd	Gdp	Exchange rate Volatility	Tbill rate	Discount rate	Reserve
Interest rate spreads	Pearson Correlation	1	-.483**	-.041	-.615**	.419*	-.010	-.395*	-.316	.424*
	Sig. (2-tailed)		.004	.819	.000	.015	.955	.023	.074	.014
	N	33	33	33	33	33	33	33	33	33
Bank development	Pearson Correlation	-.483**	1	.095	.381*	-.085	.082	.330	.154	-.091
	Sig. (2-tailed)	.004		.600	.029	.638	.652	.060	.393	.615
	N	33	33	33	33	33	33	33	33	33
Inflation	Pearson Correlation	-.041	.095	1	.034	-.179	.014	.494**	.318	-.178
	Sig. (2-tailed)	.819	.600		.852	.320	.938	.003	.072	.320
	N	33	33	33	33	33	33	33	33	33
Crowd	Pearson Correlation	-.615**	.381*	.034	1	-.713**	-.087	.458**	.565**	-.718**
	Sig. (2-tailed)	.000	.029	.852		.000	.630	.007	.001	.000
	N	33	33	33	33	33	33	33	33	33
Gdp	Pearson Correlation	.419*	-.085	-.179	-.713**	1	.185	-.634**	-.853**	1.000**
	Sig. (2-tailed)	.015	.638	.320	.000		.301	.000	.000	.000
	N	33	33	33	33	33	33	33	33	33

Exchange rate Volatility	Pearson Correlation	-.010	.082	.014	-.087	.185	1	-.143	-.082	.187
	Sig. (2-tailed)	.955	.652	.938	.630	.301		.428	.649	.299
	N	33	33	33	33	33	33	33	33	33
Tbill rate	Pearson Correlation	-.395*	.330	.494**	.458**	-.634**	-.143	1	.702**	-.636**
	Sig. (2-tailed)	.023	.060	.003	.007	.000	.428		.000	.000
	N	33	33	33	33	33	33	33	33	33
Discount rate	Pearson Correlation	-.316	.154	.318	.565**	-.853**	-.082	.702**	1	-.852**
	Sig. (2-tailed)	.074	.393	.072	.001	.000	.649	.000		.000
	N	33	33	33	33	33	33	33	33	33
Reserve	Pearson Correlation	.424*	-.091	-.178	-.718**	1.000**	.187	-.636**	-.852**	1
	Sig. (2-tailed)	.014	.615	.320	.000	.000	.299	.000	.000	
	N	33	33	33	33	33	33	33	33	33

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

As summarized in table 4.3 above, there are statistically significant weak negative relationships between the Treasury bill rate ($r=-0.395$) and interest rate spreads. There are also weak statistically significant negative relationships between bank development ($r=-0.483$) and interest rate spreads. The table shows that there are statistically significant strong negative relationships between interest rate spreads and crowding ($r = -0.615$), between crowding and reserves ($r=- 0.718$), GDP and crowding ($r=- 0.713$), GDP and Treasury bill rate ($r=- 0.634$), discount rate and GDP ($r=-0.853$), reserves and discount rate ($r=- 0.852$) and reserves and Treasury bill rate ($r=- 0.636$).

Statistically significant weak positive relationships between GDP and interest rate spreads ($r=0.419$), Reserves and interest rate spreads ($r=0.424$), bank development and crowding ($r=0.381$), Treasury bill rates and inflation ($r=0.494$), Treasury bill rate and crowding ($r=0.458$). There are statistically significant strong positive relationships between discount rate and Treasury bill rate ($r=0.702$).

Table 4.4: Relationship between Interest rate spreads and its determinants

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691 ^a	.478	.332	.03534984

a. Predictors: (Constant), Reserve, Bank development, Inflation, Exchange rate Volatility, Tbill rate, Crowd, Discount rate

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.029	7	.004	3.268	.013 ^a
	Residual	.031	25	.001		
	Total	.060	32			

a. Predictors: (Constant), Reserve, Bank development, Inflation, Exchange rate Volatility, Tbill rate, Crowd, Discount rate

b. Dependent Variable: Interest rate spreads

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.182	2.220		-.532	.599
Bank development	-.218	.138	-.284	-1.582	.126
Inflation	.028	.099	.049	.279	.783
Crowd	-.658	.387	-.412	-1.700	.102
Exchange rate Volatility	-.180	.375	-.072	-.479	.636
Tbill rate	-.091	.118	-.188	-.770	.048
Discount rate	.230	.262	.275	.879	.028
Reserve	.452	.696	.239	.649	.022

a. Dependent Variable: Interest rate spreads

The results of the regression model as presented in table 4.4 above shows that 47.8% variations in interest rate spreads are explained by variations in its determinants. The model shows a statistically significant negative relationship between Treasury bill rates ($\beta = -0.091$, $t = -0.770$, $p < 0.05$) and interest rates. There are also statistically significant positive relationship between discount rate ($\beta = 0.230$, $t = 0.879$, $p < 0.05$), Reserves ($\beta = 0.452$, $t = 0.649$, $p < 0.05$).

There are also statistically insignificant negative relationships between bank development ($\beta = -0.218$, $t = -1.582$, $p > 0.05$), crowding ($\beta = -0.658$, $t = -1.700$, $p > 0.05$), exchange rate volatility ($\beta = -0.180$, $t = -0.479$, $p > 0.05$) and interest rate spreads. There is also a statistically insignificant positive relationships between inflation ($\beta = 0.028$, $t = 0.279$, $p > 0.05$).

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The main aim of this study was to give more insight on the factors that determine interest rate spreads in Kenya. The study finds that interest rate spreads in Kenya has been on the rise in Kenya though there are periods that they have declined. The study establishes statistically significant weak negative relationships between the Treasury bill rate and interest rate spreads, bank development and interest rate spreads. There also statistically significant strong negative relationships between interest rate spreads and crowding, crowding and reserves, GDP and crowding, GDP and Treasury bill rate, discount rate and GDP, reserves and discount rate and reserves and Treasury bill rate. Statistically significant weak positive relationships are established between GDP and interest rate spreads, Reserves and interest rate spreads, bank development and crowding, Treasury bill rates and inflation, Treasury bill rate and crowding. There are statistically significant strong positive relationships between discount rate and Treasury bill rate.

In general, the study found exchange rate volatility and inflation rate to be statistically insignificant hence the government should not use them in an attempt to influence interest rate spreads as such policies are bound to fail. The insignificance of these variables suggests that they have less of an impact on interest rate spreads than that perceived in much of the literature. The clear implication is that measures by the central bank such as moral suasion, will have little, if any, impact on interest rate spreads in environments where there are persistent factors causing spreads to be high. The variability of exchange rate and inflation was not found to have any significance, a surprising result since such variability would seem likely to lead to higher risk premiums.

The other implication of our results is the fact that many of the factors commonly believed to be critical determinants of interest rate spreads may not be as relevant as perceived. For example, whilst macroeconomic stability has been long held to be a critical cause of high interest rate spreads, our results have shown that one of the most common indicators of such instability, the volatility of the exchange rate, does not have a

significant impact on the banking sector interest rate spreads in Kenya. This suggests that much of the debate on exchange rate policies and management may not be highly relevant to banking spreads, but exchange rate volatility may impact on a country's exports and balance of payments. There is no evidence of a transmission mechanism by which this effect is translated into a widening of banking sector spreads.

The discount rate plays an important role in determining the interest rate spread in Kenya's Banking Sector. It has a positive and statistically significant coefficient. This points to the need for the Central Bank to endeavour to reduce the discount rate as a way of reducing the spread as commercial Banks tend to transfer the cost of borrowing from the central bank to its customers and hence an increase in the spreads. The commercial banks alternatively borrow amongst themselves at commercial rates to avoid going to the central bank. The rate commercial banks charge for borrowing amongst themselves is called the interbank rate. This is usually short- term borrowing and the rates charged are high and hence commercial banks tend to pass on that cost to customers through high lending rates and low deposit rates and hence leading to high interest rate spreads.

The reserve requirement is a significant determinant of interest rate spread. High reserve requirements act as an implicit financial tax by keeping interest rates high. Though Kenya has a deposit protection fund, Kenyan banks are still subjected to high liquidity reserve requirements even after financial liberalization. While reserve requirements may be designed with the aim of protecting depositors, the opportunity cost of holding reserves at the central bank, where they earn no interest, increases the economic cost of funds above the recorded interest expenses that banks tend to shift to customers. There is therefore need to empower the deposit insurance in Kenya so as to protect depositors instead of using reserve requirements as a mechanism to protect depositors.

5.2 Conclusions

The study establishes that interest rate spreads in Kenya has been on the rise though there are periods that they have declined. In general, the study finds that exchange rate volatility and inflation rate is statistically insignificant in explaining interest rate spreads. The insignificance of these variables thus suggests that they have less of an impact on

interest rate spreads than that perceived in much of the literature. The finding that volatility of the exchange rate does not have a significant impact on the banking sector interest rate spreads in Kenya suggests that much of the debate on exchange rate policies and management may not be highly relevant to banking spreads. The discount rate, the treasury bill rate and the reserves are established to play an important role in determining the interest rate spread in Kenya's Banking Sector.

5.3 Policy Recommendations

The discount rate plays an important role in determining the interest rate spread in Kenya's Banking Sector. The Central Bank should endeavor to reduce the discount rate as a way of reducing the spread as commercial Banks tend to transfer the cost of borrowing from the central bank to its customers and hence an increase in the spreads.

The reserve requirement is a significant determinant of interest rate spread. High reserve requirements by the central bank affect interest rate spreads. There is need for the Central bank to empower the deposit insurance in Kenya so as to protect depositors instead of using reserve requirements as a mechanism to protect depositors.

5.4 Limitations of the Study

This study only focuses on the market and macroeconomic determinants of Banking Sector interest rate spreads. This is just one side of the determinants of interest rate spreads. There are other determinants whose data is not available in the public domain and hence there is need to investigate such determinants. There is need for further investigation of the influence of bank specific characteristics as these can influence interest rate spreads.

The study uses a linear regression model to establish the relationships between interest spreads and its determinants. The study does not address the issue of dual causality amongst the determinants themselves and between interest spreads and the determinants.

The study findings are as accurate as the data used and the regression analysis. This research has not been able to establish the accuracy of the data used beyond the

authenticity of the source. This means it cannot be deduced whether the records are accurate and if so, to what extent.

5.5 Suggestions for further Research

Further investigations could be conducted on this topic in a country specific case but perhaps using a different methodology. VAR methodology could be applied to this topic to establish how the lagged variables influence interest rate spreads.

Impulse response analysis should be carried out on interest rate spreads and its determinants to underscore how a shock in one of the variables affects the other variables. Variance decomposition analysis would estimate the extent of the influence of various variables on interest rate spreads.

REFERENCES

- Abiodun O.F. & Tennant, D (2008) Determinants of Interest Rate Spreads in Sub-Saharan African countries: A Dynamic Panel Analysis.
- Aboagye, A.Q.Q., Akoena, S.K., Antwi-Asare, T.O. & Gockel, A.F. (2008) Explaining Interest Rate Spreads in Ghana, *African Development Review*, 20 (3),378-399.
- Adebisi, M.A. & Babatope-Obasa, M. (2004) Institutional Framework, Interest Rate Policy and the Financing of the Nigerian Manufacturing Sub-Sector.
- Afanasiyev, T. S., Lhacer, P. M. V. & Nakane, M. I. (2002) The Determinants of Bank Interest Spreads in Brazil, Banco Central do Brasil Working Paper No. 46, August.
- Ahokossi, C. (2013) Determinants of Bank Interest Margins in Sub-Saharan Africa, IMF Working Paper WP/13/34. Washington D.C.: International Monetary Fund.
- Asian Development Bank (2001) Financial Sector Development in the Pacific Developing Member Countries. Manila: Asian Development Bank.
- Banda, C.M. (2010) The determinants of banking sector interest rate spreads in Zambia, Unpublished MA in Economics thesis, University of Zambia.
- Barajas, A., Roberto, S., & Natalia, S. (1998). *Interest spreads in Banking: Financial taxes, Market power, and Loan quality in Columbia 1974-1996*.
- Beck, T. & Hesse, H. (2006). Bank Efficiency, Ownership and Market Structure: Why Are Interest Spreads So High in Uganda? World Bank Policy Research Working Paper 4027, October.
- Beck, T., Cull, R., Fuchs, M., Getenga, J., Gatere, P., Randa, J. & Trandafir, M. (2010). Banking Sector Stability, Efficiency and Outreach in Kenya, World Bank Policy Research Working Paper 5442, October. Washington D.C.: The World Bank.

- Bergen, S. H. (2010) Performance of Public Sector Banks in 1994-1995. *IBA Bulletin*, 17(8), 46-48.
- Bibow, J. (1995) Some Reflections on Keynes Finance Motive for the Demand for Money. *Cambridge Journal of Economics* 19(5), 647-66.
- Brock, P. & Franken, H. (2003) Measuring the Determinants of Average and Marginal Bank Interest Rate Spreads in Chile, 1994-2001, Working Papers UWEC- 2003-25, University of Washington, Department of Economics.
- Chand, S. (2002) Financial Sector Development and Economic Growth in Pacific Island Countries. *Pacific Economic Bulletin*, 17(1), 117-133.
- Chirwa E. W. & Mlachila, M. (2004) Financial Reforms and Interest Rate Spreads in the Commercial Banking System in Malawi, *IMF Staff Papers*, 51 (1), 96 – 122.
- Coppock, L. & Poitras, M. (2000) Evaluating the fisher effect in long term cross country averages, *International Review of Economics and Finance*, 9, 181-192.
- Crowley, J. (2007) Interest Rate Spreads in English-Speaking Africa. IMF Working Paper. April 2007, 123 -45.
- Crowley, J. (2007). Interest Rate Spreads in English-Speaking African Countries. *IMF Working Paper; Wp/07/101*.
- Demirguc -Kunt, A., & Huizinga, H. (1999). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *World Bank Economic Review*, 13, 379-408.
- Demirguc-Kunt, A. & Huizinga, H. (1998) Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence, *World Bank Economic Review*, 13 (2), 379-408.
- Devereux, M. & Lane, R.(2001) Understanding Bilateral Exchange Rate Volatility, mimeo. New York University.

- Duck, N. (1993) Some international evidence on the quantity theory of money. *Journal of Money, Credit, and Banking* 25, 1–12.
- Emmanuelle, N.Y.S. (2003) A European Study Of Bank Interest Margins: Is Net Fees Revenue A Determinant. Doctoral Thesis. United Kingdom, U.K: University of Birmingham.
- Ercan, E. (2012) The Relationship between Financial Development and Economic Growth in Emerging Markets.
- Feder, G. & Just, R. (1980) A model for Analyzing Lenders Perceived Default Risk, *Applied Economics*, 12, 125-44.
- Fetter, F.A. (1914) Interest theories, old and new, *American Economic Review*, Vol. 4, pp.68-92.
- Fisher, I. (1930) *The Theory of Interest*. New York: Macmillan.
- Folawewo, A.O. and Tennant, D. (2008) Determinants of Interest Rate Spreads in Sub-Saharan African Countries: A Dynamic panel Analysis-A paper prepared for the 13th Annual African Econometrics Society Conference, 9 – 11 July, 2008, Pretoria, Republic of South Africa.
- Friedman, B. and Kuttner, K. (1989) Money, income and prices after the 1980s.NBER working paper no. 2852.
- Gambacorta, L. (2004) How Banks Set Interest Rates? National Bureau of Economic Research Working Paper 10295, Cambridge.
- Grenade, K. H. I. (2007) Determinants of Commercial Banks Interest Rate Spreads: Some Empirical Evidence from the Eastern Caribbean Currency Union, Eastern Caribbean Central Bank Staff Research Paper No. WP/ 07/01.
- Hanson, J.A. & Rocha, R.R. (1986) High Interest Rates, Spreads and the Costs of Intermediation, *Industry and Finance Series*, 8.

- Ho, T.S.Y. & Saunders, A. (1981) The determinants of Bank Interest Rate Margins: Theory and Empirical Evidence, *Journal of Financial and Quantitative Analysis*, 16, November 1981, 581-600.
- <http://www.bcb.gov.br/pec/wps/ingl/wps46.pdf>.
- <http://www.standardmedia.co.ke/business/article/2000099782/new-law-to-cap-high-interest-rates-in-the-offing>.
- Jayaraman, T.K. & Sharma, R. (2003) why is Interest Rate Spread High in Fiji? Results from a preliminary Study. *Fijian Studies*, 1(1), 45-67.
- KBA, (2012). *A Consumer Guide to Banking in Kenya. Standard Banking Practices*. Edited by Nuru Mugambi. Available at www.kba.co.ke.
- Keynes, J.M. (1933) *A Tract on Monetary Reform*, London, Macmillan .
- Kiran, J. (2012) Theories of Rate of Interest. *Economics Exposed Newsletter*.
- Kregel, J.A. (1985) Hamlet without the Prince: Cambridge Macroeconomics without Money. *American Economic Review* 75 (2): 133–139.
- Misati, R.N., Nyamongo. E. M. & Kamau, A.W. (2011) Interest rate pass-through in Kenya, *International Journal of Development Issues*, 10 (2), 2011, 170-182. Emerald Group Publishing Limited 1446-8956.
- Mlachila, M., & Chirwa, E. (2002). *Financial Reforms and Interest rate spreads in the Commercial banking system of Malawi*. IMF working paper, Wp/02/06.
- Mugenda, O. & Mugenda, A. G. (2003) *Research Methods: Quantitative and Qualitative Approaches*. Acts Press, Nairobi.
- Murray, R. (2004) *Man, Economy, and State with Power and Market*. Auburn, Ala.: Ludwig von Mises Institute.

- Nampewo, D. (2013) What Drives Interest Rate Spreads in Uganda's Banking Sector? *International Journal of Economics and Finance*, 5 (1), 76 – 85.
- Nandwa.B. (2006) On the Fisher effect and inflation dynamics in low income countries.An assessment of Sub-Saharan African economies, *Applied Econometrics and International Development* 6, 1.
- Nathan, A. & Neave, E.H. (1990) Cost and Efficiency of Canadian Banks, Financial Management Association Annual Meeting.
- Naude, W. (1995) Financial Liberalization and Interest Rate Risk Management in Sub Saharan Africa.
- Ndung'u, N. and Ngugi, R.W. (2000). Banking Sector Interest Rate Spreads in Kenya, KIPPRA Discussion Paper No. 5. Nairobi: Kenya Institute for Public Policy Research and Analysis (KIPPRA).
- Ngetich and Wanjau, (2011) The Effects of Interest Rate Spread on the Level of Non Performing Assets. Case of Commercial Banks in Kenya.
- Ngugi, R. (2001) An Empirical Analysis of Interest Rate Spread in Kenya, AERC Research Paper 106. Nairobi: African Economic Research Consortium (AERC).
- Njongoro J.N., (2013). The effect of Mortgage interest rate on the growth of mortgage financing in Kenya . Unpublished MBA project UON, October.
- Odhiambo, N. M. (2009) Interest rate reforms, financial deepening and economic growth in Kenya.An empirical investigation, *The Journal of Developing Areas*, 43 (1).
- Pablo, J. B. R. & Rodríguez C.S., (2011). Determinants of interest rate spread in Costa Rica. Paper Presented at the 5th CMCA Country Members Central Bank's Researchers Forum. Research Document No. 03-2011 Economic Research Department November, 2011. Availableonlineat[http://www.bccr.fi.cr/investigacioneseconomicas/sistemafinanciero/Determinants interest rate spread Costa Rica Panel Estimation.pdf](http://www.bccr.fi.cr/investigacioneseconomicas/sistemafinanciero/Determinants%20interest%20rate%20spread%20Costa%20Rica%20Panel%20Estimation.pdf). Accessed on 11th August, 2014.

- Paroush, J. (1994) The effect of uncertainty, market structure and collateral policy on the interest rate spread. *Bank of Israel Banking Review* 4:79–94.
- Quaden, G. (2004) Efficiency and stability in an evolving financial system. Available at www.bnb.be/Sg/En/Contact/pdf/2004/sp040517en.pdf.
- Radha, U. (2011) Analyzing the Sources and Impact of Segmentation in the Banking Sector: A Case Study of Kenya. Economics PhD Thesis, Department of Economics, School of Oriental and African Studies (SOAS), University of London.
- Randall, R., (1998) "Interest Rate Spreads in the Eastern Carribean", IMF Working Paper, WP/98/59, April 1998.
- Salloum, A. & Hayek, J. (2012) Analyzing the Determinants of Commercial Bank Profitability in Lebanon, *International Research Journal of Finance and Economics*, Issue. 93.
- Seetanah, B., Seetanah, B., Seetaram, N., Ramessur, S., & Sowkut, R. (2009). Interest rate spread determination in an error correction model. Retrieved; 23/09/2008, from www.melbournecentre.com.au.
- Siddiqui M. A. (2012) Towards Determination of Interest Spread of Commercial Banks: Empirical Evidences from Pakistan, *African Journal of Business Management*, 6 (5), 1851 – 1862.
- Stiglitz, J.E. & Weiss, A. (1981) Credit Rationing in Markets with Imperfect Information, *American Economic Review*, 71 (3), 393-410.
- Stock, J.H. & Watson, M.W. (1989) New indexes of leading and coincident economic indicators, *NBER Macroeconomics annual*, 351-394.
- UNCTAD Trade and Development Report (2010) After the Global Crisis: Uneven and Fragile Recovery, UNCTAD/TDR/2010.

- Wendell, S. & Valderrama, L. (2006). The Monetary Policy Regime and Banking Spreads in Barbados, IMF working paper, WP/06/211, International Monetary Fund, Washington DC.
- Were, M. & Wambua, J. (2012) Assessing the determinants of interest rate spread of commercial banks in Kenya: An empirical investigation.
- Yu, H. (1995). The Determinants of Interest Rate Margins: Empirical Evidence on the Canadian Banking Industry, *International Journal of Finance*, 7 (4).
- Zarruk, R.E. (1989) Bank spread with uncertainty deposit level and risk aversion. *Journal of Banking and Finance* 13:797–810.

