

**THE EFFECT OF CREDIT INFORMATION SHARING ON THE COST OF  
CREDIT OF COMMERCIAL BANKS IN KENYA.**

**BY**

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# DECLARATION

## Student's Declaration

This research project is my original work and has not been presented in any other university or institution of higher learning for any academic award.

Signed..... Date .....

**Joshua O. Ochola**

**D61/79312/2012**

## Supervisor's Declaration

This research project has been submitted for examination with my approval as the University Supervisor.

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## **DEDICATION**

I dedicate this project to my family and friends. A special feeling of gratitude to my wife, Anne and sons, Jeremy and Justin for their unyielding support and understanding and for creating the 'ideal' environment to get the work accomplished.

## ABSTRACT

The purpose of credit ratings and credit information sharing is to attempt to reduce information asymmetry, reduce non-performing loans, build information capital and generally enhance access to affordable credit in the economy. This study sought to establish the effect of credit information sharing on the cost of credit of commercial banks in Kenya. The research adopted a descriptive research design and used secondary data to analyze all 43 licensed commercial banks operating in Kenya as per the CBK list of commercial banks as at end of December 2013. The  $f$  – tests at 95% confidence level was used to determine the statistical significance of the constant term,  $\alpha$ , and the coefficient terms of the regression model.

The study found that cost of funds and operating costs as factors contribute positively to the cost of credit of commercial banks while credit information sharing and credit default risk made relatively insignificant contribution to determining the cost of credit. The model shows that for every one unit increase in credit report shared, cost of credit decreased by 0.0073 (insignificant). The study further concluded that in the Kenyan banking industry, credit information sharing is undertaken not with an aim of reducing cost of lending but for other reasons such as avoiding bad customers and reducing risk exposure. The study recommends that cost of funds and operating costs being major determining factors in cost of loans by commercial banks in Kenya be actively scaled down so as to make credit in the country more affordable to the customer base at large. This will have a positive impact on the total loans advanced and thus subsequent higher returns in terms of wider customer base. Concerted efforts, including policy shift is also required to encourage use of credit information sharing in assessing credit history of customers and hence reduce cost of credit by banks.

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## **LIST OF ABBREVIATIONS**

CBK	Central Bank of Kenya
CIS	Credit information sharing
CRB	Credit reference bureau
DEA	Data Envelope Analysis
FSD	Financial Sector Deepening Trust
GDP	Gross Domestic Product
HELB	Higher Education Loans Board
KCB	Kenya Commercial Bank
MFI	Micro Finance Institutions
NPL	Non-Performing Loans
SACCO	Savings and Credit Cooperative Organization
SME	Small and Medium Enterprises

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The institutionalization of credit rating by regulatory agencies in Kenya arose out of the need to reduce the Non-Performing Loan (NPL) problem, reduce information asymmetry, build information capital and generally enhance affordable credit within the economy. Credit Reference Bureau (CRB) Regulations in Kenya were originally issued in 2008 by the regulator, Central Bank of Kenya (and operationalized effective 2 February 2009). Credit Reference Bureaus complement the central role played by banks and other financial institutions in extending financial services within an economy.

The CRB Regulations were revised in 2013, among other reasons, to enhance integrity of credit information sharing (CIS) framework; to provide for a more enriched database – negative and positive information; and to provide a formal framework for third parties to share information with CRBs. The consequence of these amendments now required mandatory sharing of both positive and negative information by both banks and microfinance institutions. Consumers of credit (customers) could now actively campaign to have their positive information reported to credit reference bureaus. If banks are aware of good payment history the consumer would benefit by lower priced offers and easier terms (less collateral).

The banking industry in Kenya has realized tremendous growth in the last few years and is at its most competitive position ever. It is however plagued by credit information problems which lead to increased transaction costs, increasing bad debt rates and high impairment rates often to such an extent that potential borrowers are denied access to credit in the formal sector (Tumusiime-Mutebile, 2011). Kenyan commercial banks in particular, have not been quick to adopt the use of positive credit information sharing as a tool for assessing quality of lending and to lower their cost of credit.

In spite of the fast growth of the banking industry, Kenya has experienced a relatively high interest rate regime over the past few years and commercial banks in particular, have continued to charge high lending rates on facilities taken with them. This has been attributed to high cost of credit arising from information asymmetry problems. Lack of credit information has in the past

led to banks factoring a risk premium in the pricing of credit. It is well known in banking literature that banks are exposed to problems of information asymmetry (adverse selection and moral hazard), which can prevent the efficient allocation of credit (Leland and Pyle 1977; Stiglitz and Weiss, 1981 & 1988).

This study is concerned with the use of credit information sharing by various commercial banks to lower the cost of credit in the context of a regulatory environment. In particular, the study looks at the effectiveness of positive credit information sharing, since its regulatory inception, in facilitating availability of affordable credit by commercial banks.

### **1.1.1 Credit Information Sharing**

According to FSD Trust Kenya (2012), a credit reference bureau is an organization that compiles credit information, public record data, and identity information, and makes them available to lenders in the form of a credit report of individuals and organizations. Since the commencement of the Credit Information Sharing (CIS) mechanism in July 2010, all the 43 licensed commercial banks in Kenya and institutions under the Deposit Protection Fund Board continued to submit negative credit information of its customers to the licensed CRBs within the required timeframes.

The CBK has since inception licensed CRB Africa and Metropol East Africa as Credit information service providers. The Credit Reference Bureau Act was enacted to enable financial institutions to share credit information and build information that will enable them adequately price their loans. It was also enacted to enable financial institutions to enhance access to credit by the lower tier clientele base and indirectly reduce the cost of doing business. When a bank evaluates a request for credit, it can either collect information on the applicant first-hand or source this information from other lenders who already dealt with the applicant. Information exchange between lenders can occur voluntarily via “private credit bureaus” or be enforced by regulation via “public credit registries,” and is arguably an important determinant of credit market performance.

Houston, Lin & Ma (2010) show that information sharing mechanisms reduce adverse selection by improving the pool of borrowers and the knowledge of the applicants’ characteristics therefore improving bank efficiency in the allocation of credit. Based on some case studies, Olweny and Shipho (2011) points out that CIS plays a key role in improving the efficiency of

financial institutions by reducing loan processing costs as well as time required to process loan applications.

Lin, Ma & Song (2012) show that information sharing institutions; through their incentive effects on curtailing imprudent behavior of borrowers are also valuable in addressing moral hazard problems. Besides, they show that information sharing helps to reduce average interest rates and information rent that banks can otherwise extract from their clients, reduce or even eliminate the information advantage of larger size banks and therefore should enhance credit market competition (Kusa & Okoth, 2013). It is therefore envisioned that credit information sharing will continue to be instrumental in the decision making process of credit providers in Kenya as they seek to mitigate risks associated with information asymmetry and enable access to credit by the wider population.

### **1.1.2 Cost of Credit**

Kenyan, particularly those in the informal and small and medium enterprises have faced challenges in obtaining credit over the years. This has in part been attributable to lack of physical collateral that banks have requested for to guarantee loans. The information to be collated by bureaus will in this regards, act as “information capital” for these market niches. This will over time, change the demands for physical collateral and enhance the bank/client or lender/borrower relationship. Access to credit will therefore be considerably enhanced with the attendant positive impact on the economy.

Bank credit is among the most useful sources of finance for business in Kenya, the provision of credit has increasingly been regarded as an important tool for raising the incomes, mainly by mobilizing resources to more productive uses. As development takes place, one question that arises is the extent to which credit can be offered by commercial banks. Although Commercial banks have a primary role of providing credit, there is historical evidence of credit rationing even to creditworthy borrowers by commercial banks all over the world. Only 1.5 percent of Small and Medium Enterprises (SMEs) receive loans from commercial banks in Kenya according to International Centre for Economic Growth. It is unclear, how the rest, who form the majority, meet their working and investment needs (Kimuyu and Omiti, 2000).

Commercial banks are the most dominant of financial institutions and function as financial intermediaries to fulfill a number of important roles. One of the functions is the brokerage role whereby through this role they tend to reduce cost to all the parties involved. They also undertake funds transformation role by attracting funds from government, businesses and repackaging them as financial products such as loans to suit the needs of different borrowers. They also lend to large numbers of other intermediaries and clients, banks are thus made able to create sophisticated port of diversified, which reduce risks to the banks and their clients.

In assessing cost of credit, banks charge a price for the intermediation services offered under uncertainty and set the interest rate levels for deposits and loans. The disparity between the gross costs of borrowing and the net return on lending defines the intermediary costs which include information costs, transaction costs, administration, default and operational costs (Ngugi, 2001).

### **1.1.3 Credit Information Sharing and Cost of Credit**

In lending, the problem of asymmetric information stems from the fact that a lender's knowledge of a borrower's likelihood to repay (their 'risk profile') is imprecise and must be inferred based upon available information. The lender cannot solely rely on information provided by the applicant but must verify this information. Pagano and Japelli (1993) show that CIS reduces adverse selection by improving bank's information on credit applicants. Padilla and Pagano (1997) show that CIS can also mitigate hold-up problems in lending relationships by eliciting more competition for borrowers thereby reducing the informational rents that banks can extract. The reduced hold-up problems can elicit higher effort by borrowers and thereby make banks willing to lower lending rates and extend more credit.

In a theoretical model of information sharing, Miller (2003) shows that exchange of information on borrower type reduces average interest rates. In a related paper, Powell (2004) shows that information sharing among borrowers would lead to lower interest rates. When information is shared, the ability and cost of screening out riskier borrowers improves the portfolio's performance and allows lenders to offer lower rates to less-risky borrowers who would not have borrowed otherwise.

#### **1.1.4 Commercial Banks in Kenya**

The Kenyan financial system is dominated by commercial banks as financial intermediaries that act as conduits between the surplus economic units and the deficit economic units. Commercial Banks are licensed and regulated pursuant to the provisions of the Banking Act and the Regulations and Prudential Guidelines issued thereunder. They are the dominant players in the Kenyan Banking system and closer attention is paid to them while conducting off-site and on-site surveillance to ensure that they are in compliance with the laws and regulations.

As at December 2013 there were 43 licensed commercial banks. Out of the 43 institutions, 30 were locally owned and 13 were foreign owned. The banking sector plays a significant role in the implementation of government monetary policies. One of the key services rendered by banks is offering credit to the members of public. The rate at which members of the public are able to access loans, and the amounts available for banks to lend are highly guided by the CBK regulations.

According to Central Bank Supervision Report for 2013, Kenyan commercial banks are classified into three peer groups using a weighted composite index that comprises assets, deposits, capital, number of deposit accounts and loan accounts. A bank with a weighted composite index of 5 percent and above is classified as a large bank, a medium bank has a weighted composite index of between 1 percent and 5 percent while a small bank has a weighted composite index of less than 1 percent. For the period ended 31st December 2013, there were 6 large banks with a market share of 52.39 percent, 15 medium banks with a market share of 37.95 percent and 22 small banks.

The commercial banks' average lending rate declined marginally from 18.13 percent in January 2013 to 16.99 percent in December 2013 and the average interest rate paid by banks on deposits increased to 6.65 percent from 6.51 percent over the same period. Consequently, the interest rate spread narrowed from 11.62 percent in January 2013 to 10.34 percent in December 2013 reflecting a larger decline in the lending rate. These lending rates are still considered high hence low uptake of loan products by majority of the population.

Credit information sharing (CIS) mechanism was rolled out in July 2010, with the objective of promoting access to affordable credit to members of the public. The year ended 31st December

2013 marked three and half years since inception of the CIS mechanism. The revised Credit Reference Bureau Regulations, 2013 enabled the roll-out of full file credit information sharing, hence onset of reporting both positive and negative credit information to credit reference bureaus by banks which would support efforts towards inculcating financial discipline and bringing the benefits of lower interests on loans to good borrowers closer to realization.

## **1.2 Research Problem**

The purpose of credit ratings and credit information sharing is to attempt to reduce information asymmetry, reduce non-performing loans, build information capital and generally enhance access to affordable credit in the economy. This research proposal explores the extent to which CIS usage is growing within commercial banks in Kenya. Several studies have demonstrated that information sharing is beneficial to credit market performance and helps lenders to select good borrowers (Pagano and Japelli, 1993) and reduce non-performing loans and the costs of firm financing (Brown, Japelli and Pagano, 2009). Based on some case studies, Miller (2003) points out that credit information sharing plays a key role in improving the efficiency of financial institutions by reducing loan processing costs as well as the time required to process loan applications.

Despite all these developments, banks do not lend to everybody who can afford the price of credit, but apply some degree of credit rationing using non-price mechanisms (Okurut and Bothole, 2005). Given the fact that the financial sector in Kenya is liberalized, the existence of imperfect information in the credit market may explain the credit rationing behaviour of banks to maximize their profits. Credit rationing occurs when loan demand exceeds supply, and some borrowers receive no loans or less than the amount applied for at the prevailing market interest rates (Hoff and Stiglitz, 1990). The constrained access to bank credit has the negative implication of stifling growth, with serious implications for poverty and unemployment.

Positive credit information sharing is a relatively new concept in the Kenyan context and is still transforming. Credit information sharing mechanism was only rolled out in July 2010, and a revision of the guidelines done in 2013 to allow for positive information sharing. Admittedly, few aspects relating to Credit Reference Bureau have been reviewed in Kenya. In spite of this, according to the banking survey by Central Bank of Kenya (2012), the high interest regime witnessed in the first half of 2012 impacted negatively on the quality of loans and advances.

There was only a marginal decline in 2013 (from 18.13% in 2012 to 16.99% in 2013). The rates are a reflection of information asymmetries in the market and are regarded as too high for sustainable economic growth.

Empirical research on the effect of credit information sharing in the banking sector of Kenya is very limited and do not include analysis of the effect of positive credit information sharing on affordable finance within banks. A number of studies have been carried out about many aspects of information sharing in other parts of the world outside Africa and little focus has been laid to African and more so Kenya. The local studies have also tended to focus more on negative information sharing. For instance Ngugi (2012) studied the impact of credit information sharing on credit risk for commercial banks in Kenya, Bonaya (2012) study measured loan performance using default rate while Gitahi (2013) studied the effect of credit reference bureaus on level of non-performing loans in Kenyan commercial banks.

This study seeks to fill this knowledge gap and justifies further research on the expected relationship between positive CIS and the benefits that accrue with the use of credit reports including reduction of cost of credit. A relevant issue for empirical investigation therefore is what effect does positive credit information sharing have on cost of credit, and indeed, borrowing rates in Kenyan commercial banks?

### **1.3 Research Objective**

#### **1.3.1 General objective**

The study sought to establish the effect of credit information sharing on the cost of credit of commercial banks in Kenya.

#### **1.3.2 Specific objectives**

The objectives of the study were to;

- i. Establish the level of use of credit information sharing among commercial banks.
- ii. Determine the relationship between usage of credit information sharing, transactional cost of borrowing and lending rate within banks.

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

The findings of this study will be of benefit to the management of commercial banks to develop credit risk management policies that will enable them achieve their long-term goals by enabling them to identify customers with ability to pay on time and thus can be granted credit. Additionally, the banks may lower the cost of credit for better paying borrowers. The study would also be useful to microfinance institutions as it would be insightful how microcredit institutions can increase and control credit distribution to their clients.

The results of this study were aimed at making lenders, borrowers, policy makers and legislators to appreciate the role of CRBs in reducing information asymmetry. More so, the central bank on its supervisory role will be challenged to make sound policies to ensure stability in credit market to foster growth of the economy. The results challenged the policy makers and legislators to come up with policies and legal framework that would create an environment that attracts investors to form more CRBs or invest in the existing ones, encourage borrowers to embrace them in order to build their reputational collateral and the lenders to rely on their data for risk evaluation and management. The study will also contribute considerably to a body of knowledge as it will provide a basis for further research on empirical assessment of CIS and NPLs in other financial sectors like SACCOs and Micro Finance Institutions (MFIs) in Kenya.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section draws on literature in the area of credit information sharing and cost of credit. The review is divided into two focus themes; first theoretical overview of key theories underpinning the study and secondly empirical studies on relevant research undertaken previously. There is also an effort to evaluate the contributions made and pertinent knowledge gaps identified.

#### **2.2 Theory Review**

The theoretical framework of a research project relates to the philosophical basis on which the research takes place, and forms the link between the theoretical aspects and practical components of the investigation undertaken. The theoretical framework helps to make logical sense of the relationship of the variables and factors that have been deemed important to the problem. It provides definitions of relationships between all the variables so that the theorized relationship between them can be understood. The theoretical framework will therefore guide the research, determining what factors will be measured and what statistical relationship the research will look for. This section critically reviews theoretical models including; Information asymmetry theory, credit rationing theory, adverse selection theory, credit market theory and Interest rates theory.

##### **2.2.1 Information Asymmetry Theory**

Information asymmetry describes the condition in which relevant information is not known to all parties involved in an undertaking (Ekumah & Essel, 2003). Information asymmetry causes market to become inefficient and forces market participants to take risk because it is assumed that information which is provided is always inadequate, inaccurate, incomplete and untimely. The asymmetric information literature which looks at the impact of financial structure on economic activity focuses on the differences in information available to different parties in a financial contract. Borrowers have an informational advantage over lenders because borrowers know more about the investment projects they want to undertake than do lenders (Akerlof, 1970).

This informational advantage leads to adverse selection and a classic "lemons" problem first described by Akerlof (1970). A lemons problem occurs in the debt market because lenders have trouble determining whether a lender is a good risk (he has good investment opportunities with low risk) or, alternatively is a bad risk (he has poorer investment projects with high risk), if the lender cannot distinguish between the borrowers of good quality and bad quality (the lemons) he will only make the loan at an interest rate that reflects the average quality of the good and bad borrowers. The result is that high quality borrowers will be paying a higher interest rate than they should because low-quality borrowers pay a lower interest rate than they should. One result of this lemons problem is that some high-quality borrowers may drop out of the market and so profitable investment projects that should be undertaken will not be.

Stiglitz and Weiss (1981), argues that information asymmetry can lead to credit rationing in which some borrowers are arbitrarily denied loans. This occurs because a higher interest rate leads to even greater adverse selection: the borrowers with the riskiest investment projects will now be the likeliest to want to take out loans at the higher interest rate. if the lender cannot discriminate who are the borrowers with the riskier investment projects, he may want to cut down the number of loans he makes, which causes the supply of loans to decrease with the higher interest rate rather than decrease.' Thus, even if there is an excess demand for loans, a higher interest rate will not be able to equilibrate the market because additional increases in the interest rate with only decrease the supply of loans and make the excess demand for loans increase even further.

Since the seminal works of Akerlof (1970) and Stiglitz & Weiss (1981), it is evident that asymmetric information problems may seriously undermine efficient allocation of credit. One way to overcome this informational rigidity is to share credit information among lenders. Some countries adopt a formal information sharing mechanism in which public credit registries collect and share data compulsorily reported by lenders. Other countries have developed more voluntary systems in which private credit bureaus act as information brokers. According to He and Wang (2007) a reasonable bank would try to eliminate asymmetric information by incurring search costs to acquire reliable information on the borrower requesting a loan.

Lummer and McConnell (1989) in their extensive examination of loan agreements observed that loan revisions transmitted both positive and negative signals to the market. They found that new

agreements did not convey information to the market as such. Revisions in already established agreements transmitted either positive or negative signals dependent upon whether the revision could be viewed as good or bad news.

### **2.2.2 Credit Rationing Theory**

This theory was introduced by Freimer and Gordon (1965) and comprehensively by Stiglitz and Weiss (1981). According to the seminal Stiglitz and Weiss (1981) paper, unsatisfied agents are borrowers. Asymmetric information leads to credit rationing, as lenders cannot distinguish between high quality and low quality borrowers. However, this dominate view is not without criticism. In particular, De Meza & Webb (1987) vigorously contest this result. They show that asymmetric information in credit markets can lead to the inverse result, which is excess of credit (over lending).

Banks exist because they screen and monitor borrowers more efficiently than other investors can (Allen and Santomero, 1998). They are specialized in gathering private information and treating it (Freixas and Rochet, 1999). Managing money and deposit accounts, banks own highly strategic information on firms' receipts and expenditures as well as the way that firms develop (Diamond and Rajan, 2001). Despite this plethora of information, relationships between bankers and firms are not perfect. Banks suffer from informational asymmetries (Freixas and Rochet, 1999) such that evolution of prices (interest rates) cannot clear the credit market. Finally, non-walrassian equilibrium arises with a fringe of unsatisfied agents.

The more interesting form of credit rationing is equilibrium rationing, where the market had fully adjusted to all publicly, i.e. why banks ration credit free, available information and where demand for loans for a certain market interest rate is greater than supply. Stiglitz and Weiss (1981) proved that credit rationing occurs if banks charge the same interest rate to all borrowers, because they cannot distinguish between borrowers and screening borrowers perfectly is too expensive. Both assumptions are very simplifying and do not occur in this manner in the real world. Banks are usually able to distinguish their borrowers up to a certain degree. Moreover, banks face more than only two types of borrowers. Banks usually charge more than just one interest rate to all customers. High-risk borrowers pay higher interest rate and credit rationing is

less likely. However, banks cannot distinguish borrowers perfectly and screening them perfectly is impossible. Thus, credit rationing may occur.

According to Stiglitz and Weiss (1981) adverse selection and thus credit rationing still occurs if banks require collateral. They argue that low-risk borrowers expect a lower rate of return on average. Thus, they are less wealthy than high-risk borrowers on average after some periods. Low-risk borrowers are therefore not able to provide more collateral. Increasing collateral requirements may have the same adverse selection effect as a higher interest rate. Instead Bester (1985) argues that banks only offer contracts in which they simultaneously adjust interest rates and collateral requirements. He proved that there is always a combination of interest rate and collateral requirements so that credit rationing does not occur.

### **2.2.3 Adverse Selection Theory**

Stiglitz and Weiss (1981) originate the paper of adverse selection theory of credit markets. The theory rests on two main assumptions: that lenders cannot distinguish between borrowers of different degrees of risk, and that loan contracts are subjects to limited (i.e. if project returns are less than debt obligations, the borrower bears no responsibility to pay out of pocket). This analysis is restricted to involuntary default, i.e., it assumes that borrowers repay loans when they have the means to do so. In a world with simple debt contracts between risk-neutral borrowers and lenders, the presence of limited liability of borrowers imparts a preference for risk among borrowers, and a corresponding aversion to risk among lenders. This is because limited liability of borrowers implies that lenders bear all the downside risk.

On the other hand, all returns above the loan repayment obligation accrue to borrowers. Raising interest rates then affects the profitability of low risk borrowers disproportionately, causing them to drop out of the application pool. This leads to an adverse compositional effect—higher interest rates increase the riskiness of the average riskiness of the applicant pool. At very high interest rates, the only applicants are borrowers who could potentially generate very high return (but presumably with small probability). Since lenders' preference over project risk run counter to those of borrowers, they may hold interest rates at levels below market-clearing and ration borrowers in order to achieve a better composition and lower risk in their portfolio. Excess

demand in the credit market may persist even in the face of competition and flexible interest rates.

In the adverse selection theory, the interest rate may not raise enough to guarantee that all loan applicants secure credit, in times when loanable funds are limited. In general, the volume of credit and level of effort is less than the first-best. Borrowers who have greater wealth to put as collateral obtain cheaper credit, have incentives to work harder, and earn more income as a result. Existing asset inequalities within the borrowing class are projected and possibly magnified into the future by operation of the credit market, a phenomenon that may cause the persistence of poverty.

By exchange of information about their customers, banks can improve their knowledge of applicants' characteristics and behavior. In principle, this reduction of informational asymmetries can reduce adverse selection problems in the lending, as well as change borrowers' incentives to repay, both directly and by changing the competitiveness of the credit market borrowers to repay loans, when the legal environment makes it difficult for banks to enforce credit contracts. In this model borrowers repay their loans because they know that defaulters will be blacklisted, reducing external finance in future.

#### **2.2.4 Credit Market Theory**

A model of the neoclassical credit market postulates that the terms of credits clear the market. The theory postulates that if collateral and other pertinent restrictions remain given, then it is only the lending rate that determines the amount of credit that is dispensed by the banking sector. Therefore with an increasing demand for credit and a fixed supply of the same, interest rates will have to rise. Any additional risk to a project being funded by the bank should be reflected through a risk premium that is added to lending rate to match the increasing risk of default. Subsequently, there exist a positive relationship between the default probability of a borrower and the interest rate charged on the advance. It is thus believed that the higher the failure risks of the borrower, the higher the interest premium (Ewert et al, 2000).

Although this theory does not explicitly discuss how collateral would effect on the risk premium, it creates the impression that collateral has no effect on lending rate, and if a risky borrower would wish to face the same lending rate as a borrower with a lower risk, then all that is required

is to pledge more collateral to lower his risk profile and therefore enjoy a lower risk premium. This brings about the ‘moral hazard’ and ‘adverse selection’ phenomena, firstly because of information asymmetry existing between the lender and borrowers. The borrower has a more accurate assessment of the risk profile of this investment that is not known by the lender and thus may perform secret actions to increase risk of his investment without the realization of the lender. The adverse selection problem appears as lenders raise their interest rates to shield themselves from default and on the other hand attract only high risk borrowers and eliminate low risk borrowers.

### **2.2.5 Interest Rates Theory**

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 one year. Interest rate as a price of money indicates market information concerning probable change in the purchasing power of money or future inflation (Ngugi, 2001). Financial institutions facilitate mobilization of savings, diversification and pooling of risks and allocation of resources (Collins NJ, et al, 2011).

However, since the receipts for deposits and loans are not harmonized, intermediaries like banks incur certain costs (Ngugi, 2001). They charge a price for the intermediation services offered under uncertainty and set the interest rate levels for deposits and loans. The disparity between the gross costs of borrowing and the net return on lending defines the intermediary costs which include information costs, transaction costs, administration, default costs and operational costs. Interest rate spread is well-defined by market microstructure characteristics of the banking sector and the policy environment (Ngugi, 2001).

Further, Chand (2002) singles out issues of governance which encompasses maintenance of law and order and provision of basic transport and communications, all imposing 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.

### **2.3 Determinants of Cost of Credit**

In assessing cost of credit, banks charge a price for the intermediation services offered under uncertainty and set the interest rate levels for deposits and loans. The disparity between the gross costs of borrowing and the net return on lending defines the intermediary costs which include information costs, transaction costs, administration, default and operational costs (Ngugi, 2001). 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 (Were and Wambua, 2013).

There are hardly empirical studies on optimal interest rate spreads since that would arguably depend on several factors and may not be static over time. The few studies available with respect to optimality of spreads focus on theoretical mathematical derivations of the conditions under which an optimal spread is achieved, typically focusing on profit maximization behavior of commercial banks, based on the relevant variables which include those listed above (bank-specific factors). The benchmark work in this approach is Ho and Saunders (1981). Others following similar approach include Zarruk and Madura (1992), and Mannasoo (2012).

In contrast, there is an extensive literature on the efficiency of financial institutions (e.g., see a survey by Berger and Humphrey (1997) on more than 130 empirical studies on efficiency). The bank efficiency literature mainly performs two tasks. The first task is to evaluate performance of banks and separate better performed banks from worse ones. This is done by applying the non-parametric data envelope analysis (DEA) or parametric frontier analysis to banks or to branches within a bank. The second task is to use the efficiency measures to inform government policies, to improve managerial performance by identifying 'best practices' and 'worst practices', and to address other research issues. This study will address bank efficiency in as far as exploring the impact of market institutions such as information sharing mechanisms and other regulatory institutions such as CBK on bank operation efficiency within Commercial banks in Kenya. Definitely, cost of credit will encompass loan default cost (loan impairment), informational cost, administration cost and other overhead costs for the purposes of this study.

### **2.3.1 Credit Information Sharing**

Refers to an information exchange process between banks and other credit providers which facilitates obtaining information bearing on an individual's credit worthiness, credit standing, character, general reputation and history and/or profile of an individual or entity with regard to credit, assets and any financial obligations. A situation where there is increased and seamless credit information sharing reduces operating costs and hence likely to result in lower cost of credit.

### **2.3.2 Credit Default Cost**

Default cost represents costs associated with collection of debts and amounts owed by defaulting borrowers and is often reflected as loan impairment or provision amounts based on non-performing loans. Klein (1992), shows that information sharing can motivate borrowers to repay loans; borrowers are more likely to repay their debts because information about their defaults becomes available to all lenders through CRBs.

### **2.3.3 Administration & Transaction Cost**

Relates to bank credit intermediary costs which include loan processing costs, administration, and operational costs. The heart of a credit report is the record it provides of an individual's or a firm's payment history, which enables lenders to evaluate credit risk more accurately and lower loan processing time and costs i.e there is less paperwork, resource personnel, time etc.

### **2.3.4 Liquidity risk**

This is computed as the ratio of bank's liquid assets to total assets (LQDR). The degree to which banks are exposed to liquidity risk varies across banks.

A bank with higher liquidity faces lower liquidity risk hence is likely to be associated with lower spreads due to a lower liquidity premium charged on loans. Banks with high risk tend to borrow emergency funds at high costs and thus charge liquidity premium leading to higher spreads (Ahokpossi 2013).

### **2.3.5 Macroeconomic variables**

The variables used to capture the impact of the macroeconomic factors are real GDP growth and inflation rate. Increased economic activity can heighten demand for loans leading to higher

lending rates. On the other hand, increased economic activity can make projects more profitable, reduce defaults, and increase deposits, all of which reduce the spreads. For both variables, negative as well as positive parameters have been observed. Additionally, the policy rate which is the Central Bank rate (CBR) is included as a monetary indicator to capture the effect of monetary policy.

## **2.4 Empirical Review**

A growing body of empirical evidence supports the hypothesis that information sharing enhances successful credit risk management. Analyses of credit bureau data confirm that credit reporting reduces the selection costs of lenders by allowing them to more accurately predict individual loan defaults (Barron & Staten, 2003; Kallberg and Udell, 2003; Powell et al., 2004; Luoto et al., 2007).

Gallindo and Miller (2001) find a positive relation between access to finance (debt) and an index of information sharing in the Worldscope database, using the firm-level sensitivity of investment to cash flow as a proxy of credit constraints. The paper analyzes whether credit information registries affect the ability of firms to access credit, using both an aggregate measure of firm access to credit as well as firm-level financial data. Using on-line surveys, the project collected data on public credit registries in 34 countries and on private registries in more than 30 countries. The survey for public registers was sent to 81 countries and 59 responded, including 34 with public credit registries. The survey documented the growth in public credit registries in recent years, especially in Latin America. While previous research had suggested that public registries were more likely to be established in the absence of private registries, the World Bank survey found that private registries were operating in most nations and often predated their public counterparts. Surveys were sent to 138 private registries worldwide and 51 firms in more than 30 countries completed the survey. Approximately 30 private registries in 15 Latin American countries responded to the survey, including the dominant registries in all the largest markets (Argentina, Brazil, Chile, Mexico). Examining balance sheet data of large companies in 23 countries they find a positive correlation between credit access and an index of information sharing. They also find that well-performing credit reporting systems reduce the sensitivity of investment to cash flows. The empirical results in both cases confirm that credit registries

contribute to more effective financial intermediation as evidenced by greater access to credit. In particular, the average debt/capital ratio for firms in a country is shown to be positively correlated with quality of its credit registries, and on the firm level, better quality registries are shown to reduce financial constraints.

Experimental evidence by Brown and Zehnder (2006) shows that a public credit reference bureaus can motivate borrowers to repay loans, when they would otherwise default. The impact of information sharing on the level of non-performing loans has been tested by two cross-country studies. Based on their own survey of credit reporting in 43 countries, Jappelli and Pagano (2002) show that bank lending to the private sector is larger and default rates are lower in countries where information sharing is more solidly established and extensive. These cross-sectional relations persist also controlling for other economic and institutional determinants of bank lending, such as country size, GDP, growth rate, and variables capturing respect for the law and protection of creditor rights. Djankov et al. (2007) confirm that private sector credit relative to GDP is positively correlated with information sharing in their study of credit market performance and institutional arrangements in 129 countries for the period 1978–2003. Firm-level data suggest that information sharing may indeed have a differential impact on credit availability for different firm types. Love and Mylenko (2003) combine cross-sectional firm-level data from the 1999 World Business Environment Survey with aggregate data on private and public registries collected in Miller (2003). They find that private credit bureaus are associated with lower perceived financing constraints and a higher share of bank financing (while public credit registries are not), and that these correlations are particularly strong for small and young firms.

Hahm and Lee (2008) did a case study on economic effects of positive information sharing in South Korea between March and August 2008 and established that when banks compete in consumer credit markets, differing level of credit information sharing leads to economically significant variations in market share, borrower quality, and profit across banks. Employing optimal credit decision models of profit maximizing banks, and utilizing a unique dataset of 2 million consumer loan obligors in Korea, they investigated the economic effects of sharing positive credit information in addition to negative credit information already exchanged. They found that the discriminatory power of the credit scoring model improves significantly. They

proceeded to investigate the economic effects of the information gap in a competitive credit market by assuming two groups of banks that differ only in the level of credit information sharing. Banks with negative information only suffer from reduced profit as high credit risk borrowers are more concentrated on this group. The adverse selection problem and the endogenous deterioration of the borrower pool become even more profound in the pricing regime in which banks with inferior information charge insufficient risk premiums and offer relatively lower lending rates to high risk borrowers due to the information gap. Moreover, the higher the loss given default, the wider the profit gap becomes; this implies that banks with informational disadvantage may suffer more severely in an economic downturn due to worsening adverse selection problems. Overall the findings suggest that banks have strong incentives to voluntarily participate in the positive information sharing mechanism even in the presence of a public credit registry, since even a small difference in discriminatory power stemming from information gap may lead to a significant fall in profitability as the distribution of borrower quality changes endogenously due to adverse selection problems.

Pagano and Jappeli (2009) research on information sharing and credit; firm level evidence from transition countries in 27 Eastern Europe countries and Soviet, conducted between 1991-2005, used a large sample of firm level data. It entailed correlation analysis between information sharing and credit performance as cross sectioned between opaque and transparent firms as well as between countries with weak legal environments and strong legal environments. The study suggests a threefold effect of lenders' exchanging information on the credit history of borrowers. First, credit bureaus improve banks "knowledge about applicants" characteristics and permit more accurate prediction of repayment probability. This allows lenders to target and price their loans better, easing adverse selection problems. In this respect the benefit of establishing a credit bureau is greatest where each bank is confronted by a large number of customers on which it has no previous information, i.e. where borrowers are very mobile. Secondly, credit bureaus reduce the informational rents that banks could otherwise extract from their customers. They tend to level the informational playing field within the credit market and force lenders to price loans more competitively. Lower interest rates increase borrowers "net return" and augment their incentive to perform. Third, credit bureaus work as a borrower discipline device: every borrower knows that if he defaults his reputation with all other potential lenders is ruined, cutting him off

from credit or making it much more expensive. This mechanism also heightens borrowers' incentive to repay, reducing moral hazard.

In the local context, the presence of CRBs reduces the information monopoly of a lender on its borrowers, thus reducing the extra rents that lenders can charge their clients. Beck, Getenga et al. (2010) assessed the stability, efficiency, and outreach of Kenya's banking system, using aggregate, bank-level, and survey data. Using secondary data, the study examined Central Bank data on Commercial banks over a period of ten years to 2009, specifically data on average lending rates, deposit rates, loan provisions, tax rates and operating costs. In assessing efficiency, the study examined how interest rate spread levels and their determinants differed by bank size and ownership type. The study offered regressions that better enabled test whether the determinants of spreads differ by bank ownership type and if such differences could be explained by the types of activities that different owners pursue. To calculate the weighted average interest rate charged on loans, they added the interest income earned to interest in suspense, and divide that sum by total loans. The interest spread was then calculated as the difference between that figure and the interest expense paid on deposits (divided by total deposits). They decomposed the spreads into its different components; loan loss provisions, overhead costs, taxes, and required reserves. Operating costs were taken as those attributable to lending, and thus equal to the share of income from lending multiplied by total costs. The study concluded among others, that Banks' interest rate spreads had declined, in part due to reduction in the overhead costs of foreign banks.

Kipyegon (2011) studied credit information sharing and bank performance in Kenya. A case study of Kenya Commercial Bank was done whereby a sample population of 4 branches was used. The study focused on four selected KCB branches, and a sample of 69 employees in all the branches was randomly selected. Data was collected both from primary source and secondary source. The researcher used the Spearman's Correlation Coefficient to analyze quantitative data. Other data was subjected to content analysis. The study established that complete information about the borrowers' payment characteristic helps the banks to estimate their chance of recovering the loans is 50% , those who strongly agreed is 36.4%, those who were uncertain are 13.6%. This was therefore interpreted to mean that when bank have information concerning the payment of a borrower, then they can use such past information to calculate on their chances of recovering such loans from them. Therefore it is vital that the bank have at least some

information about borrowers' past borrowing and repayment habits. The study also established that when the banks get quality information about the borrowers' credit history, it will help the bank to assess its risk precisely and also reduce on the otherwise search cost history of the borrower since it will be readily available from credit bureaus. The study further established that as banks share information about the loan applicants, they will be able to predict the chance of the borrower to repay the loans since the one who have good credit report will certainly continue to keep the good record and the one who have bad report might have the high chance of still defaulting on the payment. It also showed that good and timely report of the borrower will surely enable him or her to get loan at ease and at a lower rate of interest. This is because bank is certain about the repayment of the borrower and therefore charges low rate due to the fact that the rate of default is minimal.

Ngugi (2012) studied the impact of credit information sharing on credit risk for commercial banks in Kenya. The population of the study consisted of all 44 banking institutions registered and operational in Kenya under the banking Act. The study utilized both secondary and primary data. Quantitative data on credit risk for commercial banks was extracted from annual reports, profit and loss accounts, balance sheets and cash flow statements. Data on credit information sharing was obtained through the use of questionnaires that were directed to commercial banks in Kenya. The study recommended that other institutions to be listed in the CRB data base e.g Savings and Credit Co-operative Societies, Higher Education Loans Board among others. In addition the study recommended both "Black" and "White" information be made mandatory to be shared in order to make the information sharing beneficial to all stakeholders. The study established that there is a significant difference on the reports requested by banks from credit reference bureaus. The volumes in terms of information shared of nonperforming loans before and after information sharing shows an increase in the period after although when tested by Chi-square shows no significant difference. The comparison of nonperforming loans before and after the roll out of credit information sharing showed a decrease in non-performing loans. The study concluded that credit information sharing had positive impact on credit risk although is not statistically significant.

Aduda et al. (2012), on the other hand performed an interesting study to establish the relationship between credit scoring by Kenyan banks and access to credit by SMEs in Kenya. This was an

explanatory study where the research sought to establish a relationship between the use of credit scoring and access to credit for SME loans by Kenyan banks. A census survey was conducted involving all 43 Commercial Banks in Kenya registered and licensed under the banking act as at 31st December 2009 as per the Central Bank of Kenya. This study used primary data that was collected from the respondents of the survey. Data was captured and analyzed using Statistical Package for the Social Sciences (SPSS). Regression analysis was used to determine the relationship between credit scoring and approval rates for SME's. The study concluded that there is a relationship between credit scoring by Kenyan banks and access to credit by SMEs in Kenya and recommended that banks need to use various credit assessment methods before availing loans to SME applicants which in turn improves the credit scoring of banks.

Nyangweso (2013), in his study, investigated the effect of credit information sharing on loan performance of commercial banks in Kenya. The researcher analyzed time series empirical data to examine the relationship between credit information sharing and loan performance by establishing correlation coefficients between the aggregate numbers of credit reports requested by forty commercial banks and their aggregate loan performance as measured as measured by level of non-performing loans. The study employed descriptive as well as correlation research design from August 2010, the period of inception of credit information sharing to April 2013. The study concluded that loan performance as measured by loan default rate is negatively related to credit information sharing (credit reports), lending rate and total loans. These conclusions are reinforced by Kipchumba (2013), Gitahi (2013) and Otworu (2013).

## **2.5 Summary of the Literature Review**

Evidence suggests that information sharing increases access to credit. The impact on credit risk or lending rates, however, maybe not so clear due to the noisy proxies used as instruments. Positive information sharing increases prediction precision, moreover, restrictions on individual significant variables reduces the efficiency of credit allocation. Theoretical models show that information sharing may increase lending and reduce defaults.

Studies also show that the management of default risk and ultimate reduction of NPLs has become essential for the survival of banks. The focus of good risk management is the identification and treatment of these risks and objective is to add value to all the activities of the commercial banks. The effect of such management from the studies shows that it increases the

probability of success, and reduces the probability of NPLs and hence the profitability of the banks.

The presence of CRBs from the studies carried out depicts that there is a reduction the information monopoly of a lender on its borrowers, thus reducing the extra rents that lenders can charge their clients. A number of studies have been carried out about many aspects of information sharing in other parts of the world outside Africa and little focus has been laid to African and more so Kenya. The local studies have also tended to focus more on negative information sharing. For instance Ngugi (2012) studied the impact of credit information sharing on credit risk for commercial banks in Kenya, Bonaya (2012) study measured loan performance using default rate while Gitahi (2013) studied the effect of credit reference bureaus on level of non-performing loans in Kenyan banks.

This study was therefore undertaken to fill this knowledge gap by establishing the effects of positive credit information sharing on reducing level of lending rates within commercial banks in Kenya.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines three major elements of the study. First it gives the methodology that was adopted for this study. In this segment, the researcher sought to define the research design, the target population and the sampling strategy of the study. Secondly, it outlines the data collection tools. The main tools of data collection proposed were Central bank of Kenya policy and supervisory documents. The chapter further presents data analysis and inference approaches upon the findings.

#### **3.2 Research Design**

The research adopted a descriptive research design. Cooper and Schindler (2003), describes a descriptive study as one that is concerned with finding out what, where and how of a phenomenon. The research design for this study was an exploratory descriptive survey of the levels of usage of credit information sharing in Kenya and its effects in reducing lending rates in Kenya commercial banks.

#### **3.3 Population**

The population comprised of the all 43 registered and licensed commercial banks operating in Kenya as per the CBK list of commercial banks as at end of December 2013 (Appendix 1). The study used a census method which has been adapted due to the small population.

#### **3.4 Data Collection**

The study utilized secondary data. This data was useful for generating information for the study from already documented data or available reports. Cooper and Schindler (2003) explain that secondary data is a useful quantitative technique for evaluating historical or contemporary confidential or public records, reports, government documents and opinions. The study made use of secondary data that was obtained from June 2013 to June 2014 (when positive credit information sharing began) on the cumulative number of credit reports sought by commercial banks and customers in Kenya, cumulative loan balances, cost of funds and the total non-performing loans for the period between Jan 2011 to December 2013. The credit reports and the

information on the forty two commercial banks were obtained from published reports and Credit Sharing Centre at the Central Bank of Kenya.

A review and analysis of secondary data sources was instrumental in obtaining information that had been collected by organizations that are stakeholders in the industry, including the Central Bank of Kenya (CBK). Quantitative data on average bank overhead cost, average cost of funds and average lending rates for commercial banks were extracted from Central bank, annual reports, financial statements and CBK supervision reports.

### **3.5 Data Analysis**

Key to the research was to establish the linkage between credit information sharing, loan transaction (overhead) cost and interest rates on loans for the banks that utilize positive information sharing. This study used regression analysis model in which the dependent variable was the lending rate of interest and positive information sharing i.e credit reports as the independent variable (and credit risk, average loan operating cost and cost of funds as the intervening variables) that impact lending rate of interest.

#### **3.5.1 Analytical Model**

Regression analysis was used to determine how the dependent variable (lending interest rate) relates to credit information sharing.

The regression analysis will take the form below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

$Y$  = Cost of Credit as represented by interest income earned + interest in suspense/ Total advances or loans by commercial banks.

$X_1$  = Credit Information Sharing as represented by average number of credit reports (monthly) requested by commercial banks/ total number of loans.

$X_2$ = Operating costs as represented by share of income from lending\* Total operating expenses/Total loans and advances by commercial banks.

$X_3$ = Average Cost of funds as represented by Total Interest expense/ Total deposits and borrowed funds by commercial banks.

$X_4$ = Credit default risk as represented by Total value of Non-performing loans / Cumulative value of loans and advances by commercial banks

$\alpha$ = The constant of regression

### **3.5.2 Test of Significance**

The f – tests at 95% confidence level was used to determine the statistical significance of the constant term,  $\alpha$ , and the coefficient terms. The two tailed significance values were compared with the preset significance of 0.05 to test the overall significance of the study variables.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter presents the analysis, results and the discussions arising from the study on the effects of credit information sharing on cost of credit of commercial banks in Kenya. The researcher collected secondary data from annual reports on individual banks financial performance to extract financial performance indicators. CBK<sup>s</sup> annual reports and supervisory reports were also used to gather the relevant data necessary for the study. Descriptive statistics, Correlation and regression of the variables of the study are presented below.

#### 4.2 Descriptive Statistics

Descriptive statistics of the variables of the study is presented in the Table 4.1 below:

**Table 4. 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Cost of credit	43	.08	.37	.1561	.04731
Number of credit reports	43	.00	897000.00	72000.0000	192588.26053
Average cost of funds	43	-.08	.17	.0576	.03303
Average operating costs	43	.01	.38	.0670	.04813
Credit risk	43	.00	.64	.1119	.14376

**Source, Researcher (2014)**

From the findings, cost of credit measured by interest income earned over total advances or loans by commercial banks, registered a minimum of 0.08 with a maximum of 0.37, the mean was 0.1561 (15.61%) and a standard deviation of 0.04731 (4.73%). For credit information sharing, the minimum was 0.0 (0%) with a maximum of 897000.00, the mean was 72000 with a standard deviation of 192588.2605. The average cost of funds posted a minimum of -0.08 (-0.88%) , a maximum of 0.17, a mean of 0.0576 (5.76%) with a standard deviation of 0.03303 (3.3%). The

average operational costs recorded a minimum of 0.01 (1%), a maximum of 0.38 (38%), mean of 0.0670 (6.7%) with a standard deviation of 0.04813 (1.78%). Credit default risk recorded a minimum of 0 (0%), a maximum of 0.64 (6.4%), mean of 0.1119 (11.2%) with a standard deviation of 0.14378 (4.4%). The reason for the minimum value of credit information sharing being zero was because a number of commercial banks had not implemented full file credit information sharing over the study period and were still conducting only negative information sharing.

### 4.3 Regression Analysis

In addition to descriptive statistics and correlation analysis, the study also conducted a cross-sectional multiple regression. These findings are discussed below:

**Table 4. 2: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.834 <sup>a</sup>	.695	.663	.02274

a. Dependent Variable: Cost of credit

b. Predictors: (Constant), credit default risk, credit information sharing, average cost of funds and average operating costs

Table 4.2 above shows a model summary of regression analysis between four independent variables including credit risk, credit information sharing, average cost of funds and average operating costs and a dependent variable namely cost of credit. The table showed that value of R was 0.834, the value of R square was 0.695 and the value of adjusted R square was 0.663. From the findings, 69.5% of changes in cost of credit were attributed to the four independent variables in the study. Positivity and significance of all values of R showed that model summary was significant and therefore gives a logical support to the study model.

**Table 4. 3: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.045	4	.011	21.698	.000 <sup>b</sup>
	Residual	.020	38	.001		
	Total	.065	42			

a. Dependent Variable: Cost of credit

b. Predictors: (Constant), credit default risk, credit information sharing, average cost of funds and average operating costs.

The data findings were analyzed and the SPSS output presented in table 4.3 above. The ANOVA statistics at 5% level of significance showed that the value of calculated F was 21.698 and the value of F critical at 5% level of significance With numerator degrees of freedom 4 and denominator degrees of freedom 38 was 2.62, since F calculated is greater than the F critical (21.698 > 2.62), this showed that the overall model was significant at the 5% significance level.

**Table 4. 4: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.086	.008		11.135	.001
Number of credit reports	-0.0073	.000	-.011	-.116	.0708
Average cost of funds	.146	.099	.137	1.475	.0148
Average operating costs	.584	.084	.852	6.974	.001
Credit risk	-.014	.114	-.015	-.122	.903

a. Dependent Variable: Cost of credit

b. Predictors: (Constant), credit default risk, credit information sharing, average cost of funds and average operating costs

$$C.O.C, Y = 0.868 - 2.173 X_1 + 0.584 X_2 + 0.146 X_3 - 0.014 X_4$$

Where

Y= Cost of Credit

$X_1$  = Credit Information sharing (number of credit reports)

$X_2$  = Operational costs

$X_3$  = Average cost of funds

$X_4$  = Credit risk

From the coefficients Table 4.4, average cost of funds and average operating costs were positively correlated with Cost of Credit. From the table, taking all factors; credit risk, credit information sharing, cost of funds and operating costs constant at zero, Cost of Credit was 0.868. The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in credit information sharing (number of credit reports) lead to 0.0073 decrease in cost of credit, while a unit increase in average cost of funds lead to 0.146 increase in cost of credit, also a unit increase in average operating costs increased cost of credit by 0.584 and a unit increase in credit risk reduced cost of credit by 0.014 average cost of funds and average operating costs contributed positively to the cost of credit of commercial banks. Their significance values were less than 0.05. Effect of credit risk and credit information sharing (number of credit reports shared) were statistically insignificant as their significance values were greater than 0.05.

#### **4.4 Discussions**

The finding that credit default risk and credit information sharing made insignificant contribution to the cost of credit contradicts Djankov et al. (2007) who confirmed that private sector credit relative to GDP is positively correlated with information sharing in their study of credit market performance and institutional arrangements in 129 countries for the period 1978 – 2003.

Kipyegon (2011) found that when banks have information concerning the payment of a borrower, then they can use such past information to calculate on their chances of recovering

such loans from them. The findings contradict our results in that credit risk assessment was observed to be statistically insignificant in influencing the cost of credit. Further, our findings contradict Hahm and Lee (2008) who established that when banks compete in consumer credit markets, differing level of credit information sharing leads to economically significant variations in market share, borrower quality, and profit across banks. Banks with negative credit information only suffered from reduced profit as high credit risk borrowers were more concentrated on this group. In this study, credit information sharing made insignificant contributions towards cost of credit. This could point to the fact that credit information sharing is a relatively new concept in Kenya: revised credit reference bureau regulations 2013 to factor full file sharing have only been operational only since June 2013 (on pilot basis) and February 2014 on full basis. The Kenyan banking industry has therefore not accrued the returns associated with use of credit information sharing as a tool for positive profiling of lenders and subsequent pricing of credit accordingly.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

The study focused on the effects of credit information sharing on the cost of credit of commercial banks in Kenya. This study aimed at comparing the findings with the previous studies and making conclusions based on the research. The study utilized secondary data. This chapter also has suggestions for further research based on questions left unanswered by the research.

#### 5.2 Summary of Findings

The cost of credit measured by interest income over total advances or loans by commercial banks, registered a minimum of 0.8 with a maximum of 0.37, the mean was 0.1561 (15.61%) and a standard deviation of 0.04731 (4.73%). For credit report sharing, the minimum was 0.0 (0%) with a maximum of 897000.00, the mean was 72000 with a standard deviation of 192588.2605. The cost of funds posted a minimum of -0.08 (-0.88%), a maximum of 0.17, a mean of 0.0576 (5.76%) with a standard deviation of 0.033(3.3%). Operating costs recorded a minimum of 0.01 (1%), a maximum of 0.38(38%), mean of 0.0670 (6.7%) with a standard deviation of 0.0481 (4.81%). The Credit risk recorded a minimum of 0 (0%), a maximum of 0.64 (64%), mean of 0.1119 (11.2%) with a standard deviation of 0.1438 (14.4%). The value of R was 0.834, the value of R square was 0.695 and the value of adjusted R square was 0.663. From the findings, 69.5% of changes in cost of credit were attributed to the four independent variables in the study. Positivity and significance of all values of R showed that model summary was significant and therefore gives a logical support to the study model. The value of calculated F was 21.698 and the value of F critical at 5% level of significance was 2.62, since F calculated was greater than the F critical ( $21.698 > 2.62$ ), this showed that the overall model was significant at the 5%

significance level. The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in number of credit reports shared lead to 0.0073 decrease in cost of credit, while a unit increase in average cost of funds lead to 0.146 increase in cost of credit, also a unit increase in average operating costs increased cost of credit by 0.584 and a unit increase in credit risk reduced cost of credit by 0.014. Cost of funds and operating costs contributed positively to the cost of credit of commercial banks. Their significance values were less than 0.05. Credit default risk and credit sharing were statistically insignificant as their significance values were greater than 0.05.

### **5.3 Conclusions**

The study concluded that the cost of funds and operating costs contributed positively to the cost of credit of commercial banks while credit risk and credit information sharing made insignificant contribution to the cost of credit. The study also established that average cost of capital and operating costs should be lowered so as to make credit from banks more affordable to the customers. Monthly data on level of credit information sharing made an insignificant negative contribution to the cost of credit as offered by the commercial banks in Kenya.

### **5.4 Recommendation**

Based on the findings in chapter four and the conclusions above, the study recommends that cost of funds and operating costs in lending loans and advance by the commercial banks in Kenya should actively be scaled down by banks so as to make credit in the country more affordable to the customer base at large, this has a positive impact on the total loans they lend and thus subsequent higher returns in terms of wider customer base. The study concluded that the cost of funds and operating costs contributed positively to the cost of credit of commercial banks while

credit risk and credit information sharing made insignificant negative contributions to the cost of credit. Accordingly, the banking industry has therefore not accrued the returns associated with use of credit information sharing as a tool for positive profiling of lenders and subsequent pricing of credit.

Importantly, credit information sharing is going to become a vital cog for progress in achieving availability of affordable credit to the masses. It is incumbent upon policy makers and legislators to come up with policies and legal framework that would create an environment that attracts investors to form more CRBs or invest in the existing ones, encourage borrowers to embrace them in order to build their reputational collateral and the lenders to rely on their data for risk evaluation and management.

### **5.5 Limitations of the study**

The study used secondary data that was obtained from June 2013 to June 2014 (when positive credit information i.e full file sharing began) on the cumulative number of credit reports sought by commercial banks in Kenya, while cumulative loan balances, cost of funds and the total non-performing loans for the period between Jan 2011 to December 2013. This difference in time frame led to data values being collected not being equal in terms of sample size as full file credit information sharing data was not available for a longer period by virtue of its lifespan.

### **5.6 Suggestions for further research**

This study concentrated on the effects of credit information sharing on the cost of credit of commercial banks in Kenya. In order to facilitate the generalization of findings in the banking and allied sector; this study recommends that further studies be conducted on microfinance

institutions in the country on effects of credit information sharing on their cost of credit, this will enhance generalization of findings.

Further research is needed to explore how various credit costing methods affect the cost of credit and subsequent subscriptions by the members of the public and the impact on interest on loans and advances of finance institutions.

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## APPENDIX

### APPENDIX I: BANKING SECTOR MARKET SHARE REPORT AS AT DEC 2013

#### Large (Market Size index over 5%)

##### INSTITUTION

1. Kenya Commercial Bank Ltd
2. Equity Bank Ltd
3. Cooperative Bank of Kenya Ltd
4. Standard Chartered Bank Ltd
5. Barclays Bank of Kenya Ltd
6. CFC Stanbic Bank Ltd

#### Medium (Market Size index >1% - 5%)

##### INSTITUTION

1. Commercial Bank of Africa Ltd
2. NIC Bank Ltd
3. Diamond Trust Bank Ltd
4. I&M Bank Ltd
5. National Bank of Kenya Ltd
6. Chase Bank Ltd
7. Citibank N
8. Bank of Africa Ltd
9. Bank of Baroda Ltd
10. Prime Bank Ltd
11. Family Bank Ltd
12. Imperial Bank Ltd
13. Bank of India
14. Guaranty Trust Bank Ltd (formerly Fina Bank)

#### Small (Market size index <1%)

##### INSTITUTION

1. Ecobank Ltd
2. African Banking Corporation
3. Consolidated Bank of Kenya Ltd
4. Gulf African Bank Ltd
5. Development Bank of Kenya Ltd
6. Equatorial Commercial Bank Ltd
7. K-Rep Bank Ltd
8. Giro Bank Ltd

9. Guardian Bank Ltd
10. Victoria Commercial Bank Ltd
11. Fidelity Commercial Bank Ltd
12. First Community Bank Ltd
13. Habib AG Zurich
14. Trans-National Bank
15. Charterhouse Bank
16. Paramount Universal Bank Ltd
17. Habib Bank Ltd
18. Credit Bank Ltd
19. Oriental Commercial Bank Ltd
20. Jamii Bora Bank Ltd
21. Middle East Bank Ltd
22. Dubai Bank Ltd
23. UBA Kenya Bank Ltd

(Source: CBK, Bank Supervision Department, December 2013)

## **APPENDIX II: NUMBER OF CREDIT REPORTS REQUESTED BY BANKS**

Month	# Credit Reports
Jun-13	103,231
Jul-13	124,747
Aug-13	126,815
Sep-13	125,304
Oct-13	123,314
Nov-13	137,605
Dec-13	92,220
Jan-14	126,830
Feb-14	110,002
Mar-14	206,388
Apr-14	133,138
May-14	122,729
Jun-14	126,136

### APPENDIX III: DATA COLLECTION FORM

<b>2013</b>	<b>Total Advances (Ksh 000)</b>	<b>Interest income</b>	<b>Share of Operating Costs</b>	<b>Cost of Funds</b>	<b>Credit Risk (NPL ratio)</b>
KCB	198,370,069	29,990,696	13,473,487	2.84	3.75
Barclays Bank	118,361,911	17,765,660	7,826,667	1.56	0.56
Co-op Bank of Kenya Ltd	137,051,537	20,721,516	10,088,569	3.03	2.23
Stanchart Bank	129,672,004	17,037,722	5,651,536	2.51	1.23
Equity Bank	152,028,916	26,436,650	10,761,426	2.33	2.56
CFC Stanbic BankLtd	69,133,486	7,801,754	5,392,434	2.61	1.20
CBA	57,180,199	6,175,212	2,034,711	3.61	0.54
I & M Bank Ltd	73,369,588	9,679,395	2,181,762	5.16	0.47
Citibank N.A.	24,337,983	2,523,886	640,967	2.83	-
National Bank	39,566,678	4,808,428	1,708,066	3.21	6.10
DiamondTrust	75,292,211	10,047,703	3,017,006	4.58	-
NICBank	77,114,087	10,536,011	2,612,851	4.07	1.48
PRIMEBANK	26,751,542	3,562,797	858,304	5.82	0.18
Bank of Baroda	23,578,560	3,827,732	480,966	6.91	0.46
ECO Bank	18,459,837	2,905,820	1,757,234	7.37	3.84
Bank ofAfrica	31,091,347	4,369,068	1,459,417	7.54	3.50
CHASE BANK	39,564,255	9,062,055	3,157,937	5.79	1.37
FamilyBank	27,943,360	4,989,195	2,943,588	2.48	3.81
Bank of India	10,672,752	1,253,998	145,080	6.09	0.29
HFCK	35,215,897	5,122,060	1,398,900	7.11	7.09
ImperialBank Ltd	26,171,720	6,345,240	2,055,201	8.00	3.22

FINABank	10,303,477	1,682,784	653,298	5.10	0.48
DevelopmentBank	8,108,467	1,198,756	226,182	7.74	6.54
ConsolidatedBank	10,855,492	2,219,352	1,159,839	8.37	6.24
EquatorialCom'l Bank	9,029,000	1,793,735	695,718	6.52	9.29
ABCLtd	10,851,417	1,907,175	619,609	7.29	3.19
Giro Comm'l Bank	6,908,548	1,048,376	281,471	6.98	4.14
Gulf African Bank ltd	10,665,498	1,419,938	849,153	2.02	4.67
Fidelity Com'l bank	7,258,702	1,586,559	435,987	8.84	6.97
Habib BankAG ZURICH	3,029,425	356,565	87,911	4.20	(0.02)
GuardianBank Ltd	8,604,312	1,393,461	342,815	7.40	1.32
K-REPBANK	8,892,085	1,784,801	955,954	4.77	2.73
First Community Bank Ltd	7,211,504	947,409	655,279	1.53	5.87
Victoria Comm Bank	8,363,452	992,027	249,422	5.38	-
Habib BankLTD	3,880,753	533,556	124,221	3.29	6.23
Trans-Nat'lBank	5,297,179	893,001	439,832	5.25	5.57
ORIENTALBANK	4,074,515	703,722	210,851	7.97	0.88
Credit BankLtd	4,328,080	829,354	408,842	6.52	3.25
ParamountBank Ltd	3,272,190	1,226,575	141,881	9.90	5.30
Middle EastBank (K) Ltd	3,711,305	557,732	212,635	7.53	14.15
UBA BANK	789,933	101,823	135,753	5.24	0.09
DUBAI BANK	2,214,481	601,591	197,244	4.51	35.86
JAMII BORAA	3,809,603	496,626	315,178	4.06	3.80