

**THE EFFECT OF CREDIT REFERENCE BUREAUS
INFORMATION SHARING ON NON PERFORMING LOANS IN
COMMERCIAL BANKS**

BY

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DECLARATION

I Ng'ang'a Moses Karong'a, hereby declare that this research project is my original work and to the best of my knowledge has not been submitted for the award of a degree in any other university.

Signature..... Date.....

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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 study is dedicated to my parents, My Father George Ng'ang'a, my mother Catherine Ng'ang'a and my entire family, for their unwavering support, encouragement and prayers throughout the research period.

ABSTRACT

The study sought to establish the effects of credit reference bureaus information sharing on non-performing loans in commercial banks. This study adopted descriptive research design. The population for this study was all 44 commercial banks licensed in Kenya by the Central Bank of Kenya. The study used secondary data and was collected from previously collected data, general business publications, reports from and by financial institutions, CBK reports, census data from past record, library information and academic publications. Annual reports of the banks were analyzed for the period between 2010 and 2014, which is the study period of 5 years. The study used both quantitative and qualitative techniques to analyse data from the questionnaire. The quantitative data collected was analyzed by using Statistical Package for Social Sciences (SPSS version 22) and presented through percentages, means, standard deviations and frequencies. Multiple linear regression models were used in measuring each variable and this model. From the findings, the study concludes that CRB reports shared had a negative effect on non-performing loans. This is because Credit Information Sharing allows banks to better manage their credit risk and distinguish between good and bad borrowers. CRB reports has a great effect on non-performing loans since CRB reports enhance credit information sharing which reduces the extent of information asymmetry and reduce the number of the non- performing loans. Information sharing also reduces borrowers' moral hazard. When customers expect that their borrowing delinquencies will be shared, this information pooling will lead to discipline on payment thus lowering delinquency rates and the level of NPLs. The study recommends that since credit reports shared is the main factor that affect non performing ration through credit information sharing the Government of Kenya through the Central Bank needs to publish the credit-information regulations and create awareness for the same so that lenders can submit credit information of their borrowers with the credit bureaus. Commercial Banks in Kenya should make more use of the CRB reports in their credit risk assessment so as to mitigate the extent of non-performing loans.

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LIST OF ABBREVIATIONS

CBK	-	Central Bank of Kenya
CESEE	-	Central and Eastern and South-Eastern Europe
CRB	-	Credit reference Bureau
EU	-	European Union
GDP	-	Gross Domestic Product
IMF	-	International Monetary Fund
MENA	-	Middle East and North Africa
NPL	-	Non Performing Loan
OECD	-	Organization for Economic Co-operation and Development
USA	-	Unites States of America
VAR	-	Value at Risk

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Commercial banks require prudent credit management policies and structure to mitigate the credit risk. Due to the nature of their business, commercial banks expose themselves to the risks of default from borrowers. Default risk is manifested in the non-performing loans. Prudent credit risk assessment and creation of adequate provisions for bad and doubtful debts can cushion the banks risk. However, when the level of non-performing loans (NPLs) is very high, the provisions are not adequate protection. According to Basel Committee on Banking Supervision, credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize a bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters.

Procedures undertaken by commercial banks in their credit risk management will affect their level of non-performing loans. The findings are consistent with those of Fernández, Jorge and Saurina (2000), who found that most banking crises have directly led to the inadequate management of credit risk by institutions. Non-performing loans can be attributed to general factors and specific internal factors of the respective commercial banks. General factors include; high interest rates by commercial banks, General economic factors, and internal factors include; high Risk appetite by commercial banks, Weak Credit risk management procedures, Poor Credit information sharing amongst commercial banks.

According to Study by Waweru and Kalani (2009), it revealed that a majority of the respondents felt that the success achieved in controlling NPLs through information sharing among the banks was poor. The stock of gross non-performing loans (NPLs) increased by 2.0 percent from Ksh. 101.7 billion in June 2014 to Ksh. 103.7 billion in September 2014. The uptake of credit reports by credit providers is expected to increase as use of credit reports increasingly becomes entrenched in the credit appraisal processes. The introduction of the credit information sharing mechanism has further strengthened credit appraisal standards. Banks have now incorporated credit reference reports in the credit risk appraisal process (CBK, 2014). According to the Central Bank of Kenya Annual report (2014), Credit information sharing has evolved from negative information sharing in 2010 to full file information sharing in which includes the positive and negative information. Credit reports requested increased from 728,553 reports as at June 2011 to 5,271,995 reports requested by banks and customers respectively from the two licensed CRBs in 2014.

1.1.1 Credit Reference Bureau Information Sharing

CRB is an institution that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses. They are Credit providing creditors with reliable, relevant and comprehensive data on the repayment habits and current debt of their credit applicants (Sinare, 2008). Credit bureaus obtain data from creditors and other sources, consolidate and package information into individual reports, and distribute it to creditors.

They provide detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments, frauds and forgeries, cheque kiting, false declarations, receiverships, bankruptcies and liquidations, credit default and late payments, false securities use and misapplication of borrowed funds. The borrowers are normally individuals, businesses, companies, sole proprietors and government entities. The provision of information is of great use and importance to lenders in credit worthiness assessment and checking the pay back ability (Sullivan and Sheffrin 2003).

The individual information collected by CRBs is made available on request to customers of the credit bureau for the purposes of credit risk assessment, credit scoring or for other purposes such as employment consideration or leasing an apartment. Lewis (2004) indicated that most banks and most creditors prefer hard collateral-based credit but would extend cash flow- based credits if they can use a reliable and inexpensive system to exchange information on the character and ability to pay of borrowers.

The concept of credit reporting agencies was exercised in the 1860s in the US by merchants who needed to keep track of their customers who were suspected to be poor credit worth. With the advance of technology and growth of commerce, companies that dealt with collecting credit data improved (Sullivan *et al*, 2003).

In Kenya Credit Reference Bureaus concept was given a statutory basis and legal recognition by the Banking Credit Reference Bureau Regulations, 2008 published. The regulations provides for the licensing and supervision of Credit Reference Bureaus by the Central Bank which is a closed user group for credit information sharing for institutions

licensed under the Banking Act. A closed user group refers to clientele institutions licensed under the Banking Act, namely, commercial banks, mortgage finance companies and non-bank financial institutions.

Jappelli and Pagano, (1999) say that credit bureaus assist in making credit accessible to more people, and enable lenders and businesses reduce financial risks. Credit bureaus allow borrowers to take their credit histories from one financial institution to another, thereby making lending markets more competitive and in the end, mitigate credit risks and make credit more affordable.

1.1.2 Non-Performing Loans

A non-performing loan is one in which all agreed payments are not being made and are not expected to continue and the value of any assets backing up the loan remain does not remain adequate to cover the loan. It is the sum of borrowed money upon which the debtor has not made scheduled payments. A non-performing loan can either be in default or close to being in default. Once a loan is nonperforming, the odds that it will be repaid in full are considered to be substantially lower. In this case the banks no longer receive interest and/or installment payments as scheduled (Choudhury *et al*, 2002). Non-performing loans are so crucial to the bank because they can be used to determine the banking industries stability and permanency as a well the profitability of the bank (Sinkey, 2007). This is because non-performing loans can reduce a bank's capital resource rendering the bank unable to grow or develop its business and the result is the insolvency or liquidation of the bank.

1.1.3 Effects of Credit Bureaus on Non-Performing Loans

A bank with high level of non-performing loans is forced to incur carrying costs on non-income yielding assets that not only strike at profitability but also at the capital adequacy of a bank, and in consequence, the bank faces difficulties in augmenting capital resources (Muniappan, 2002). The probability of banking crises increases if financial risk is not eliminated quickly. Non-performing loans crises not only lower living standards but can also eliminate many of the achievements of economic reform drastically (Bonin and Huang, 2001).

Cases of non-performing loans various in different countries and in most cases leads to Loss of current revenue, high loan loss provision, erosion of banks capital, financial crisis, high risk premium, high loan price, low rate of investment and low economic growth. The situation and experience various and can be unequivocal result of economic slowdown an example of Japan's high level of nonperforming loan as an outcome of prolonged economic stagnation and deflation in the economy 1990s. Some of the factors responsible for the prolonged fragility of the Japanese banking are stock market volatility, virtual blanket guarantee of bank debts and the system of relationship banking, a system where banks maintain intimate relationships with their client firms and as a result it gives bank managers substantial room for manipulating accounting figures on NPLs and capital bases if not strongly verified by law enforcing agencies (Fukui, 2003).

The nonperforming loan problem is not a new phenomenon. In Bangladesh it dates back to early days of liberation around 1972 a period which involved disbursement of credit on relatively easier terms. A situation which did actually expand credit in the economy on nominal terms, it however also generated a large number of willful defaulters in the

background who, later on, diminished the financial health of banks through the sick industry syndrome. In India the causes of nonperforming loans are usually attributed to the lack of effective monitoring and supervision on the part of banks, lack of effective lenders recourse, weaknesses of legal infrastructure, and lack of effective debt recovery strategies (Moral *et al*, 2000).

1.1.4 Credit Bureaus in Kenya

Credit Reference Bureaus complement the central role played by banks and other financial institutions in extending financial services within an economy. CRBs help lenders make faster and more accurate credit decisions. They collect, manage and disseminate customer information to lenders within a provided regulatory framework – in Kenya, the Banking (Credit Reference Bureau) Regulations, 2008 which was operationalized in the year 2009. Credit histories not only provide necessary input for credit underwriting, but also allow borrowers to take their credit history from one financial institution to another, thereby making lending markets more competitive and, in the end, more affordable. Credit bureaus assist in making credit accessible to more people, and enabling lenders and businesses reduce risk and fraud. Sharing of information between financial institutions in respect of customer credit behavior, therefore, has a positive economic impact.

In 2006 through the Banking Act gave out a provision for credit bureaus through amendment to make it compulsory for Commercial Banks licensed under the Banking Act to share information on Non-Performing Loans through CRBs licensed by the Central Bank of Kenya. In 2007, the Banking (Credit Reference Bureau) Regulations, 2008 were gazetted. It requires that any customer's information regarding non-

performing loans and any other adverse information must be shared among banks through the CRBs. Following the Finance Bill amendments Deposit Taking Micro Finance Institutions must also subscribe to a CRB.

The Central Bank of Kenya has currently licensed three CRBs. These are Credit Reference Bureau Africa Ltd, which is the largest of its kind in Africa, Metropol Credit Reference Bureau and Compuscan Kenya Limited. In Kenya, subscribers of CRBs only give negative information about a borrower. The defaulter is listed for seven years starting from the date of the clearance of the loan. In the case of bankruptcy the information stays for ten years.

1.2 Research Problem

The Kenyan banking sector has faced major crisis since independence leading to the collapse of several commercial banks. Between 1984 and 1989 Kenya experienced high cases of bank collapse, a further collapse of banks were felt in the banking industry between 1993 and 1995, 1998 saw the collapse of 6 banks and the period between 2000 to 2005 saw the collapse of a several banks and non-banking institutions (Gichimu, 2013).

From various studies one of the reasons for the banking crisis and failures is the non-performing loans (Alloyo, 2013). Deborah and April Wright in International Journal of Bank Marketing (2003) argued that there is need to have appropriate risks management mitigation strategy in order to reduce risk of loan default because a financial institutions' viability is weakened by the loss of principal and interest.

Eagles and Bosworth (1998) argues that if mitigation of credit risk are not addressed, the institution will incur financial losses, incur costs taken to recover the capital at risk and fail in its social role of providing loans to members of society to improve their living standards.

According to CRB, 2015, the Kenyan banking sector was in the 80's and 90's saddled with a momentous Non-Performing Loans (NPLs) portfolio. This invariably led to the collapse of some banks and the major catalysts in this scenario was serial defaulters, who borrowed from various banks with no intention of repaying the loans. These defaulters thrived in the information asymmetry environment that prevailed due to lack of a credit information sharing mechanism.

Loan advance being a good and a promising venture to banks, are risky ventures that do not always provided the returns that are expected and the risks are normally defaulted by very customers. The risk comes in the form of loan delinquency or bad loans, which essentially refers to the failure by creditors to settle the loan that had been given to them.

Non-performing loans pose the greatest risk to banks since it is the most important source of banks revenue sources and profits (Karim, *et al.*, 2013). Example of world crises in the banking sector in includes US great depressions in 1930s and recent credit crunch in 2010 are linked to bad or non-performing loans (Hardy, 2006).

Kenyan economy has experienced a gradual decline over for a long time and the economic decline has affected the major sectors of the economy including the banking institutions. The level of NPLs in 1998 stood at Ksh 80 billion and in 2001, it was estimated at 81.3 billion showing a steady upsurge (Onsarigo, *et al.*, 2013)This trends in

Kenya are indicative of the importance of the management of loans which ensures that there possibility of NPLs is reduced to the minimum and permanent solution to this made.

Recently in Europe there has been an experienced case of financial crisis which has left a legacy of extremely high levels of NPLs in. In 2008, countries that had based their economic growth on the booming banking sector found themselves faced with a sudden credit growth halt (Sirtaine and Skamnelos, 2007). This is attributable to both the reduced demand for financing and reduced willingness to lend on the part of the European banks. The high levels of NPLs are becoming a growing issue, given that experiences from past financial crises show that a lasting recovery requires a clean-up of the financial sector.

Financial Sector Assessment Programs (FSAP) conducted in several countries from the MENA region by the World Bank jointly with the IMF, report high levels of unproductive debts in these countries. Tunisia and Egypt exhibit the highest levels of NPL, with 21% and 24% of gross loans over the period 2002–2006 respectively. Problem loans are also problematic in United Arab Emirates (12% of gross loans) despite recent financial system reforms. At the opposite end, other countries such as Kuwait and Saudi Arabia do not seem to suffer from problem loans (4% and 5% respectively). There is thus need for the development of a sustainable credit information sharing industry as a key component of financial sector reforms in almost all developing and emerging economies. This study therefore seeks to fill the gap by focus much and in detail the effects of credit bureaus information sharing on non-performing loans in commercial banks. The research reflects this focus by addressing the following question; what are the effects of Credit reference bureaus information sharing on non-performing loans in commercial banks?

1.3 Research Objective

To establish the effects of credit reference bureaus information sharing on non-performing loans in commercial banks

1.4 Value of the Study

The study will be of great value to the management of the banks in management of loans and in proper evaluation of customers before advancing loans. Adequate credit information can help lenders in screening and monitoring borrowers as well as avoiding giving loans to high risk individuals. Such credit information institutions reduce the effect of asymmetric information between borrowers and lenders, and will be of great value in alleviation of adverse selection and moral hazard problems which is important in assessment of credit worthiness and ability to pay.

Credit bureaus will also benefit from findings of this study since it will help in improving the areas that needs attention so as to improve in the eradication of loan defaulters. It will be of importance to the government in planning and formulating policies for improvement of protection of financial institutions and general public so as to ensure health loan activities are conducted in the country.

The findings of the study will be of great importance to the general public in understanding the effects of loan defaults their credit rating, on the economy and in making personal evaluation and prediction based on previous loan performance. Finally it will form a basis of good reference and study for the upcoming researchers and students who will need information relating to credit bureaus and commercial banks. The study will be a very important source of literature and guide to new researchers.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the related literature on the subject under study presented by various researchers, scholars, analysts and authors. The researcher derived materials from several sources which are closely related to the theme and the objectives of the study. It highlights the trends in this study relating to the research topic. It includes research areas, theoretical approaches and summary of literature review. It shows sources of where the information is coming from such as countries or other areas. The review also outlines some of the gaps identified; it deals with the historic and current state of research in the field.

2.2 Theoretical Review

This section discusses and articulates the relevant theories and concepts on how credit reference bureaus information sharing affects non-performing loans in commercial. Under this approach prediction models are constructed based on some theoretic arguments. These theories include moral hazard theory, adverse selection theory, asymmetric information theory and bank risk management theory. Each of these theories makes assumptions regarding the behavioral aspects of the economy and focuses on credit reference bureau and its effects on commercial banks none performing loans.

2.2.1 Moral Hazard Theory

The risk that a party to a transaction has not entered into the contract in good faith, has provided misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. The moral hazard theory explains the concept of how a borrower can develop the incentive to default. The theory explains that unless there are consequences for borrows future applications for loans there is high possibility of default.

The default normally arises from the number of difficulties lenders have in assessing the level of wealth borrowers will have accumulated by the date on which the debt must be repaid, and not at the moment of application and also wrong decision based on asymmetric information. If lenders cannot assess the borrower's wealth, the latter will be tempted to default on the borrowing. Forestalling this, lenders will increase rates, leading eventually to the breakdown of the market Alary and Goller (2001).

2.2.2 Adverse Selection Theory

Pagano and Jappelli (1993) explained that information sharing reduces adverse selection by improving banks information on credit applicants. Each banking institution in their mode of doing business, keeps private information about local credit applicants, but have limited or no information about foreign applicants. If banks exchange information about their client's credit worth, they can assess also the quality of foreign credit applicants and lend to them as carefully as they lend to local customers. By reducing information asymmetry between lenders and borrowers, credit registries allow loans to be extended to safe borrowers who had previously been priced out of the market, resulting in higher

aggregate lending. The effect of information sharing on aggregate lending in this model is vague.

When banks exchange credit information about borrowers' kinds, the increase in lending to good credit borrowers may fail to compensate for an eventual reduction in lending to risky types. The Adverse selection problem signals that when lenders cannot distinguish well between good from wicked borrowers, all borrowers are charged a normal interest rate that reflects their pooled experience. If this rate is higher than worthy borrowers deserve, it will push some good borrowers out of the borrowing market, forcing in turn to banks charging even higher rates to the remaining borrowers.

Through sharing of the credit information, the lender is able to distinguish bad borrowers from good borrowers in the market. Better access to information helps lenders measure borrower risk more accurately and to set loan terms and conditions accordingly. Good borrowers with low risk would be given more attractive prices, stimulating credit demand, and fewer higher-risk borrowers would be rationed out of the market because of lenders inability to offer these borrowers accommodating rates (Barron and Staten, 2008). Padilla and Pagano (2000), show that if banks exchange credit information on defaults, borrowers are encouraged to apply more energy in their projects. In both models non-payment is a sign of bad quality for outside banks and carries the penalty of higher interest rates, or no future access to credit facility.

2.2.2 Asymmetric Information Theory

Asymmetric information theory indicates that it may be complex to distinguish between good and bad borrowers (Auronen, 2003) in Richard (2011), which may result into adverse selection and moral hazards problems. The theory expounds that in the market, the person that possesses more information on a particular item to be transacted (in this case the borrower) is in a position to negotiate optimal terms for the transaction than the other party (in this case, the lender) (Auronen, 2003) and Richard (2011).

The party that knows less about the same specific item to be transacted is therefore in a position of making either right or wrong decision concerning the transaction. Adverse selection and moral hazards have led to significant accumulation of nonperforming loans in banks (Bester, 1994; Bofondi and Gobbi, 2003).

2.2.3 Bank Risk Management Theory

The theory was advanced by David Pyle, it emphasizes on the need for credit risk management for the survival of the financial institution (Otwori, 2013). The theory is based on the fact that credit risk management influences the bank's profitability because due to the fact that lack of effective and efficient credit risk management, banks profitability, liquidity and solvency are unthinkable (Mwiya, 2010). The theory argues that the bank must minimize the credit risk using all means at its disposal including the use of CRB reports. The main sources of credit risk include inappropriate credit policies, poor management and poor credit assessment (Otwori, 2013).

2.3 Determinants of Non-performing Loans

Globally there are a number of determinants of NPLs which have almost the same characteristics in the manner in which they happen and experienced in different countries. According to (IMF, 2013) NPLs are affected by both macroeconomic and bank-level factors. Among the determinants are employment rate, exchange rate depreciation and higher inflation.

2.3.1 Credit Reference Bureau Information Sharing

To help maintain good repayment behavior, Credit reference bureaus capitalize on credit history which is an official record of repayment by customer over time. This history is used by banker in loan risk assessment. In future, other credit providers like the SACCOs, microfinance institutions, telecoms and utility companies may provide and access this information as well (Otwiri 2013)

Credit Information Sharing allows banks to better distinguish between good and bad borrowers. Someone who has failed to pay their loan at one bank will not simply be able to walk to another bank to get another loan without the banks knowing about it. Over time, potential borrowers with a Good Credit Report able to access loans more cheaply and easily than high risk defaulters. The level of information sharing therefore determines whether the defaulters can be able to obtain another loan due to poor information sharing and loopholes in the process. Such cases arise from poor credit analysis and assessment (CRB 2015).

A situation that has been caused by CRBs failure to properly incorporate credit investigation and background checks as part of their credit process to reduce loan delinquencies. Also limited borrowers research that has lead to limited provision of information about borrower's income, employment, living costs and existing loan repayments to help the creditor decide whether the borrower can afford to repay a loan and therefore reduce chances of loan delinquencies and through provision of up to date borrower credit information. Further, CRB limited extend to enhancement of microcredit extension in Kenya to a great extent (Kimasar 2014)

2.3.2 Employment Rate

There is significant empirical evidence regarding the anti-cyclical behavior of the NPLs. GDP growth usually translates into more income which improves the debt servicing capacity of borrowers. On the other hand when there is a slowdown in the economy the level of NPLs is likely to increase as unemployment rises and borrowers face greater difficulties to repay their debt (Dhal, 2003). Other studies also found that NPLs are affected by stock prices with the argument that a drop in shares prices might lead to more default via wealth effects and decline in the value of collaterals.

2.3.3 Exchange Rate

Several studies have found out that there is positive correlation analysis between exchange rate and non-performing loans (Khemraj and Pasha 2009). According to (Brownbride 2007) an appreciation or a depreciation of exchange rates influences the revenue earnings for export-oriented companies. Exchange rates may impact the prospects of growth for the firms which are export oriented and this result in the contraction of the economy which causes a direct influence on the performance of loans.

Furthermore, a depreciation of the local currency leads to an increase in the exchange rate and this has an effect on the local economy by causing a surge in the cost of production by local firms and makes their products expensive in the foreign markets (Farhan, Sattar, Chaudhry and Khalil, 2012). As the exported-oriented firms earn little foreign exchange, the economy slumps as the GDP also goes down which results in reduction in household earnings and the result is people will find it difficult to service the loans that they had borrowed and the final result of an appreciation of the local exchange rate is a growth in the NPLs (Beck, *et al.* 2013).

2.4 Empirical Review

Credit Reference Bureaus concept is enforced through Private Bureaus and Public credit registers where lenders remit information about borrower. Timeline and truthfulness of the data reported by lenders to credit bureaus is enforced invariably by threatening deviants that they will be excluded from access to the common data base (Smith, 1998). Credit reference agencies such as such as Duns & Bradstreet in the US, can be regarded as voluntary information sharing mechanisms, insofar as they draw a large portion of their data from lenders and suppliers, who in return obtain preferential access to their data (Alvarado, 1999).

The type of information shared in bureaus is mainly black information such negative information is defaults. The use of Credit Reference Bureaus extends to sharing information merged from other sources such as criminal records, tax records and the data of information is compiled together and used to assign credit scores of borrowers based on statistical risk analysis (Carolina, 1999).

2.4.1 International Evidence

Keaton and Morris (1987) introduced one of the earliest empirical studies on NPLs investigating the causes of loan loss diversity on a sample of 2,500 banks in the USA. Their study showed that a substantial part of the variation in loan losses was due to differences in local economic conditions and to unusually poor performance in particular industries like agriculture and energy. They also found out that a minor part of the remaining variation in losses can be attributed to bank-level factors, such as banks deliberately taking greater risks and granting loans that they knew had a high probability of default.

Trivelli, (1999) concluded that challenges to effective use of credit reference bureau have high negative effects on banks' profits. He argues that giving out private information hands over potentially valuable asset to the competitors. He also says the liabilities of trans-border borrowing which account for debt owed to foreign lenders may not be captured by the local credit reference systems bureau hence posing huge barrier to credit bureau application. Pagano and Jappelli (1993) suggest that default problem can be mitigated if banks share information across borders. The design of credit information system can mitigate adverse effect of handing over private information to competitors and issues such as increase in lending to safe borrowers may fail to compensate for reduction in lending to risky types of borrowers (Trivelli, 1999).

Gambera (2000) also analyzed quarterly data on US loans to prove the link between macroeconomic dynamics and bank asset quality. The empirical results suggest that a limited number of regional and national macroeconomic variables are often good predictors of problem loan ratios, and that simple, bivariate VAR system of one bank

variable, one macroeconomic variable, and seasonal dummies can be quite effective. These variables include bankruptcy filings, farm income, state annual product, housing permits, and unemployment.

A study carried out by Barron and Staten (2003) showed that lenders could significantly reduce their default rate by including more comprehensive borrower information in their default prediction models. The trade balance indicates the redistribution of wealth among countries and is a major channel through which the macro-economic policies of a country may affect another country.

2.4.2 Local Evidence

Kwambai and Wandera,(2013) found that the main factors that lead to bad loans in most cases are; lending to borrowers with questionable characters, serial loan defaulters, high interest rates that make it hard for some to pay, diversion of funds by borrowers from what they had intended to work on not being disclosed before the bank, lack of commitment by the borrower to pay the loan, poor planning by the borrowers of what and how they will use the loan for which exercise and lack of collateral for the bank. These causes make many borrowers not to pay their loans hence leading to many bad loans and the trend keeps on increasing due to lack of commitment from the Central bank of Kenya and financial institutions to erase and address some of the these problems that lead to the increase in these cases.

Waweru and Kalani (2009) in their study on Commercial Banking Crisis in Kenya concluded that many of the financial institutions that collapsed in 90s were due to nonperforming loans, they found out that one major cause was due to lack of regulated

credit reference bureaus in the country. Earlier studies done in the very area limited themselves in credit risk management within the individual financial institutions and lacked the concept of information sharing found in CRB concept. Ndegwa, (2001) on Systematic and Business risks, Mwirigi, (2006) on Assessment of Credit Risk Management Techniques adopted by Microfinance in touched on credit risk mitigation through CRBs.

Banks face the credit risk due to the fact that they don't have comprehensive borrower's information from a historical perspective, the borrower's characteristics and the intention of the borrower thus creating a moral hazard (Mwiya, 2010). The removal of the information asymmetry between commercial banks through the use of the Credit Reference Bureau (CRB) assists the bank to make better credit risk assessment of potential borrowers. Information collected by the CRBs in a historical context had powerful default predictive power. The more information was included in the CRB report the better the default predictive models. According (Njungiri, 2013) the studies done in Brazil and Argentina there is decreasing default rate based on comprehensive information in CRB.

The presence of CRB has seen prevention of serial defaulters cases .The serial defaulters move from one lender to another in search of a loan, the movement is normally a means to evade the previous loan repayment with current lending financial institution and again they can't access credit facilities with their current lenders and they thus opt for another lender (Mwiya, 2010). This has the effect of increasing the average risk of lending and the corresponding interest rates. This may also have the effect of providing the low risk customers with a higher interest rate that doesn't reflect the low risk situation (Siwela,

2011). One of the features that banks deliberate when deciding on a loan credit application is asserted to be the estimated chances of recovery and to arrive at this, credit information is required on how well the applicant has honored past loan obligations (Omari, 2012).

According to (Kimasar, 2014) whenever a borrower has credit information that the lender cannot access, this is officially referred to as information asymmetry. Multiple sources improve the precision of the signal about the quality of the credit seeker and as a result, the default rate reduces. (Kago 2014) concluded that Information is the lifeblood of the modern economy and credit information sharing helps correct credit track and high rate imbalance by allowing banks and other lending institutions to collect and share data on millions of potential borrowers, thus allowing lenders to gather information on the creditworthiness of each.

2.5 Summary of the Literature Review

The theories described are related and guides the argument of this study and also have. These theories are based on various assumptions which are necessary to understand on the diverse aspects of the effects of credit reference bureaus information sharing on non-performing loans in commercial banks. The most inclusive of these theories are moral hazard theory, adverse selection theory, asymmetric information theory and bank management theory.

Moral hazard theory focuses on how a borrower can develop the incentive to default. The theory explains that unless there are consequences for borrows future applications for loans there is high possibility of default. Adverse Selection Theory focus much on the

need to exchange information both at the local and foreign cases, the theory advocates and explains how sharing of such information by financial institutions can reduce or eradicate cases of default. Asymmetric information theory focuses on the need for banks and other financial institutions to be careful in evaluating customers so as to avoid cases of advancing loan to non-credit worth customers rather than credit worth due to poor evaluation which leads to trust of most likely to default customers and mistrust of trust worth customers with opposite treatment due to asymmetric information on banks side.

Bank management theory argues that profitability of the banks and other financial institutions is based on efficiency and effectiveness of risk management mechanism, and the major risk being default among customers, and then there is need for proper risk management mechanism. The empirical studies clearly depicts that the increasing number of default rates by borrowers has led to the need for better means of reducing and dealing with the problem of defaults that has led to collapse of banks and economic problem in the society. The need for information sharing mechanism gap has therefore necessitated the formation of credit reference bureaus. This study will further narrow its research undertakings to the gaps with an aim of gathering data that would help to come up with effective recommendations on effects of credit reference bureaus on nonperforming loans.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter articulates the methodology used in the study to find answers to the research question. In this chapter, the research methodology will be presented in the following order, research design, target population, sampling procedure, data collection methods, instruments of data collection and finally the data analysis.

3.2 Research Design

Kothari (2004) defines research design as the arrangement of conditions for collection and analysis of data; in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the conceptual structure in which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. This study adopted descriptive research design which is concerned with determining the frequency with which something occurs or the relationship between variables (Bryman & Bell, 2003). The approach was appropriate for this study; since the study intended to collect detailed information through descriptions and was useful to establish the effects of credit reference bureaus information sharing on non-performing loans in commercial banks.

3.3 Population of the Study

Population is a complete set of individual's area of objects with some common characteristics to which the researcher wants to generalize the result of the study (Schindler, 2003). The population for this study was all 44 commercial banks licensed in

Kenya by the Central Bank of Kenya. Mugenda and Mugenda (2003) explained that the target population should have observable characteristics to which the study intends to generalize the result of the study and therefore the population census was conducted of all 44 commercial banks.

3.4 Data Collection

Data collection is the process of gathering relevant information on the study problem (Kothari, 2003). The study used secondary data. Secondary data was collected from previously collected data, general business publications, reports from and by financial institutions, federal reports from the government institutions, census data from past record, library information and academic publications. Annual reports of the banks were analyzed for the period between 2010 and 2014, which is the study period of 5 years.

3.5 Data Analysis

According to Bryman and Bell (2003) data analysis refers to a technique used to make inferences from data collected by means of a systematic and objective identification of specific characteristics. The study used both quantitative and qualitative techniques to analyse data from the questionnaire. Quantitative and qualitative data was analysed using descriptive statistics. The data was then coded and cross tabulated to enable the response. The quantitative data collected was analyzed by the use of descriptive statistics using Statistical Package for Social Sciences (SPSS version 22) and presented through percentages, means, standard deviations and frequencies.

This was done by tallying, computing percentages as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS or any other appropriate software. The information was displayed by use of tables and graphs. Tables and other graphical presentations as appropriate was used to present the data collected for ease of understanding and analysis.

3.5.1 Analytical Model

Multiple linear regression model was used in measuring each variable and this model was of great importance in bringing out the effects of credit reference bureau information sharing on non-performing loans in commercial banks. The regression model was of the form:

$$Y = \alpha + \beta_1 X_1 + e$$

Where,

Y = Non-performing loans as measured by non-performing loan ratio; ratio of the amount of non-performing in a bank's portfolio to the total amount of outstanding loans.

α = Constant Term

β_1 = Regression coefficient

X_1 = Credit Reference Bureaus Information Sharing as measured by logarithm form of credit reference bureaus reports shared

e = Error term

3.5.2 Test of Significance

F test statistic was used where the null hypothesis is that there is not a general relationship between the response (dependent) variable and the predictor (independent) variables, and the alternative hypothesis is that there is one. The p-values of the F-test statistic were used to measure statistical significance. If p-values are very small (<0.05), there is strong statistical evidence in support of the alternative hypothesis.

This study sought to find out the effects of credit reference bureaus on non-performing loans and since the equation is a population regression function, regression model was best test for these relationships of credit reference bureaus and non-performing loans. The researcher in this case carried out a census survey.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter presents the data findings to determine the effects of credit reference bureaus information sharing on non-performing loans in commercial banks. These data was collected from the Central bank of Kenya banks' supervision reports and Kenya National Bureau of Standards (KNBS) reports. Information was collected from the published financial statements of 43 banks. This was out of an initial target of 43 banks, one bank, Charter House Bank is under statutory management and financial statements were not available. The study covered a period of 5 years from years 2010 to 2014.

4.2 Descriptive Statistics

In section 4.2 the study present the research finding on the descriptive statistic in the data collected.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NPL ratio	215	.00	.065	.018	.0236
CRB reports shared	215	8.73	11.83	10.0337	.70591

Source: Research findings

From the findings, the study found that there was mean of 0.018 for non-performing loans ratio and 10.0337 for CRB reports shared, the standard deviation was 0.0236 for NPL ratio and 0.70591 for CRB reports shared.

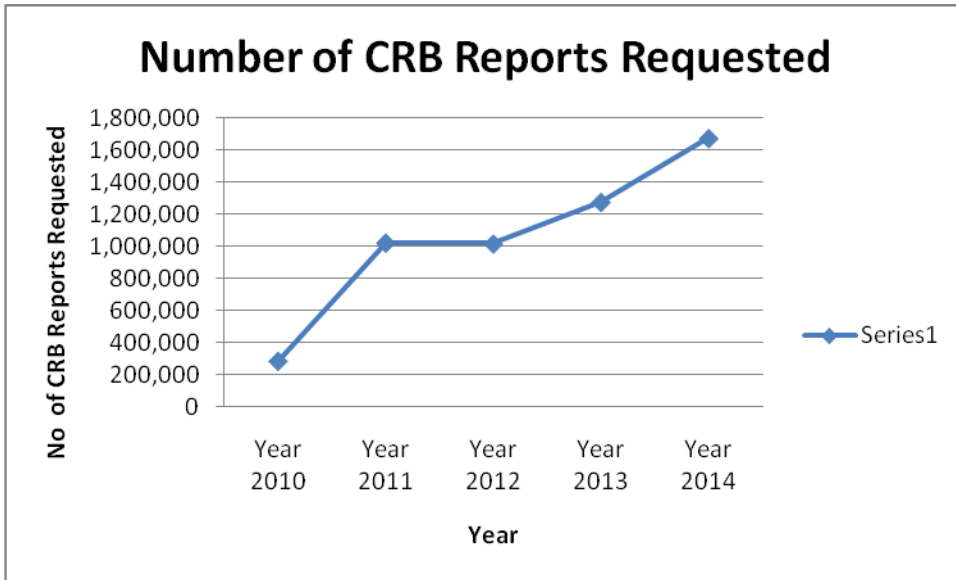


Figure 4.1: Number of CRB Reports Requested

Source: Research findings

The numbers of CRB Reports requested have been increasing since the year 2010 from 282,722 to 1,021,717 in 2011. In the year 2012 they increased to 1,015,327, In the year 2013 they increased to 1,275,522 and in the year 2014 to 1,674,707.

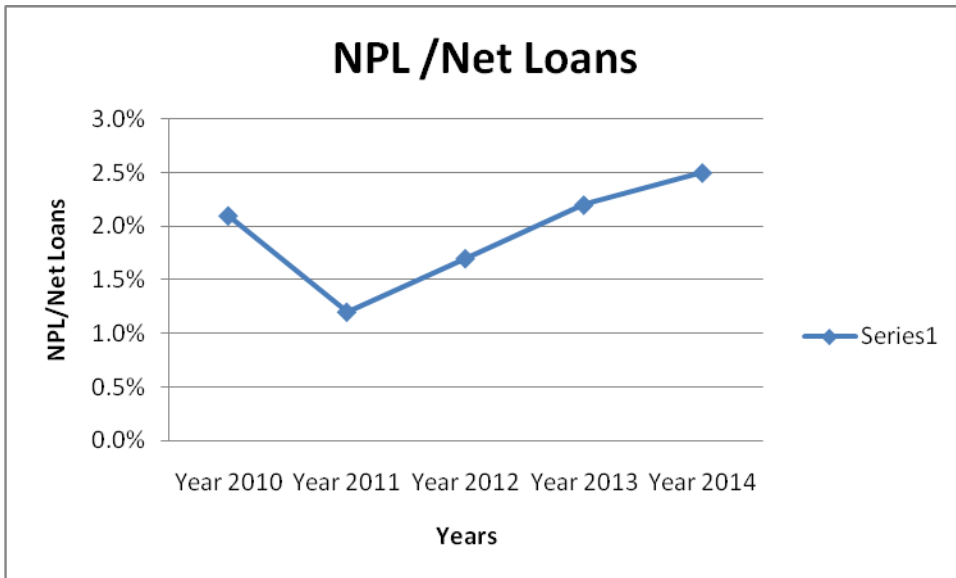


Figure 4.2: Number of CRB Reports Requested

Source: Research findings

From the trend above, the non-performing/ gross loans were at 2.1% in the year 2010, which reduced to 1.2% in year 2011. The non-performing loans/gross loans increased to 1.7% in year 2012, 2.20% in year 2013 and 2.50% in year 2014.

4.3 Inferential Statistics

In this section, the study presents the research finding on the Pearson correlation. Pearson correlation was conducted to determine the strength of relationship between the study variables.

4.3.1 Correlation Analysis

Table 4.2: Correlations Analysis

		NPL Ratio	CRB Report Shared
NPL Ratio	Pearson Correlation	1	-.786**
	Sig. (2-tailed)		.002
	N	215	215
CRB Report Shared	Pearson Correlation	-.786**	1
	Sig. (2-tailed)	.002	
	N	215	215

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

Source: Research findings

On the correlation of the study variables, the researcher conducted a Pearson correlation. From the findings on the correlation analysis between non-performing loans and CRB reports shared, the study found that there was a strong negative correlation coefficient as

shown by correlation factor of - 0.786. Hence the two derivatives CRB report shared and non-performing loans had a strong negative relationship.

4.3.2 Regression Analysis

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The researcher used statistical package for social sciences (SPSS V 22) to code, enter and compute the measurements of the multiple regressions.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 ^a	0.617	0.586	2.014

a. Predictors: (Constant), CRB Reports shared

Source: Research findings

From the table above, R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong relationship between the study variables as shown by R 0.786 at 5% significance level. The Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable (Non performing loans) due to changes in the independent variable (CRB reports shared) from the findings in the table above the value of adjusted R squared was 0.617 an indication that there was variation of 62% on non performing loans due to changes in CRB reports shared.

Table 4.4: Regression Model Coefficients

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.242	.057		4.263	.000
	CRB reports shared	-.170	.060	-.206	-2.833	.002

a. Dependent Variable: Non performing loans

Source: Research findings

The established regression equation was

$$Y = 0.242 - 0.17 X_1$$

From the above regression equation, it was revealed that holding CRB reports shared, to a constant zero, non-performing loans would stand at would stand at 0.242, a unit increase in CRB reports shared would lead to a decrease in nonperforming loan by a factors of 0.17 units. At 5% level of significance and 95% level of confidence CRB reports shared showed 0.002 level of significance; hence it was significant since ($p < 0.05$).

4.3.3 Analysis of Variance

Table 4.5: Analysis of Variance

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.032	1	.032	9.455	.002 ^b
Residual	.722	213	.003		
Total	.754	214			

a. Dependent Variable: Non performing loans

b. Predictors: (Constant), CRB Reports shared

Source: Research findings

From the ANOVA statistics table above, the processed data, which is the population parameters, had a significance level of 1.8% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The F critical at 5% level of significance, 1 d.f, 213 d.f was 3.89, while F computed was 9.455, since F calculated is greater than the F critical (value = 3.89), this shows that the overall model was significant hence CRB reports shared affect non-performing loans.

4.4 Interpretation of Findings

On the correlation analysis between non-performing loans and CRB reports shared there was a strong negative correlation coefficient. On regression there was a strong relationship between the study variables at 5% significance level. A unit increase in CRB reports shared would lead to a decrease in nonperforming loan. The F critical at 5% level

of significance, was less than F computed, since F calculated is greater than the F critical, this shows that the overall model was significant hence CRB reports shared affect non-performing loans. This is because Credit Information Sharing allows banks to better distinguish credit worth of the customers. A borrower who has defaulted in their loan repayments at one commercial bank will not simply be able to walk to another bank to get another loan without the banks having information of the same. The level of information sharing therefore determines whether the loan defaulters can be able to obtain additional loan due to poor information sharing and loopholes in the process (CRB 2015).

The findings above are in line with the findings of Padilla and Pagano (2000) and Madrid and Minetti (2009) that information sharing reduces borrowers moral hazard .When customers expect that their borrowing delinquencies will be shared, this information pooling will lead to discipline on payment thus lowering delinquency rates and the level of NPLs. From the regression equation, it was revealed that holding CRB reports shared to a constant zero, there would be non-performing loans, this is because other external factors like interest rates affect loan default hence non-performing of the loans.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study. The researcher had intended to determine the effects of credit reference bureaus information sharing on non-performing loans in commercial banks.

5.2 Summary

On descriptive statistics the study found that there was mean of 0.065 for non-performing loans ratio and 11.83 for CRB reports shared. On the correlation analysis between non-performing loans and CRB reports shared, the study found that there was a strong negative correlation coefficient represented by correlation factor of - 0.786. There was a strong relationship between the study variables represented by R 0.786 at 5% significance level. The value of adjusted R squared was 0.617 an indication that there was variation of 62% on non performing loans due to changes in CRB reports shared, employment rate and exchange rate at 95% confidence interval. The F computed was 9.455 and was greater than the F critical (value = 3.89), this shows that the overall model was significant hence CRB reports shared had an effect on non-performing loans.

On the regression equation, it was revealed that holding CRB reports shared to a constant zero , non performing loans would stand at would stand at 0.242, a unit increase in CRB reports shared would lead to a decrease in nonperforming loan by a factors of 0.17 and was significant at ($p < 0.05$).

5.3 Conclusion

From the findings, the study concludes that CRB reports shared had a negative effect on non-performing loans. The Credit Information Sharing allows commercial banks to better distinguish the credit worth of their customers and mitigate their credit risk. CRB reports has a significant effect on non-performing loans since CRB reports enhance credit information sharing which reduce the number of the non- performing loans. Credit Information sharing also reduces borrowers' moral hazard. When customers expect that their borrowing delinquencies will be shared, this information pooling will lead to discipline on payment thus lowering delinquency rates and the level of NPLs. Over time, potential borrowers with a Positive Credit Report will be able to access loans at a favorable price and easily than high risk defaulters. The level of information sharing therefore determines whether the defaulters can be able to obtain additional loan due to poor information sharing and loopholes in the process.

5.4 Policy Recommendations

The study recommends that since credit reports shared is the main factor that affect non performing ration through credit information sharing the Government of Kenya through the Central Bank needs to publish the credit-information regulations and create awareness for the same so that lenders can submit credit information of their borrowers with the credit bureaus.

Commercial Banks in Kenya should make more use of the CRB reports so that they control their greatest problem of non-performing loans. This will enable commercial banks reduce risks to loan defaults and hence reduce their losses.

5.5 Limitation of the Study

In attaining its objective, the study was limited to the Commercial banks for a period of 5 years from 2010 to 2014. The study was also limited to the degree of precision of the data obtained from the secondary source. . A longer duration of the study would have captured periods of various economic significances. This may have probably given a longer time focus hence given a broader dimension to the problem.

The target population used for this study was small compared to the population of all lending institutions in Kenya such as microfinance institutions and Saccos. Whereas all lending institutions may require the services of CRBs, only banks have access to this service thus limiting the study of the effect commercial banks in Kenya only.

The study was limited to secondary data collected from the Kenya National Bureau of Standards and the Central banks of Kenya. While the data was verifiable since it came from the Central Banks' bank supervision report, it nonetheless could still be prone to these shortcomings.

5.6 Suggestions for Further Research

The study recommends that a study should be done on factors affecting non-performing loans in other institutions apart from the Commercial banks such as Savings and Credit Cooperative Societies and Microfinance institutions and compares the results.

This study focused on credit information sharing as a variable that only had an effect on proportion of the non-performing loans to Gross loans in Kenyan commercial banks. A further research using a robust multivariate model considering other factors affecting

NPLs. For example to investigate the effects of exchange rate depreciation and credit information sharing on NPLs among Kenyan commercial banks.

The study can be widened by collecting secondary data covering a wider period of time, for instance 10 years which may result in different findings.

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APPENDICES

Appendix I: List of Commercial Banks licensed in Kenya as at 31 December 2014

1. Kenya Commercial Bank Ltd
2. Standard Chartered Bank Ltd
3. Barclays Bank of Kenya Ltd
4. Co-operative Bank of Kenya Ltd
5. CfC Stanbic Bank Ltd
6. Equity Bank Ltd
7. Bank of India Ltd
8. Bank of Baroda Ltd
9. Commercial Bank of Africa Ltd
10. Prime Bank Ltd
11. National Bank of Kenya Ltd
12. Citibank N.A.
13. Bank of Africa Ltd
14. Chase Bank Ltd
15. Imperial Bank Ltd
16. NIC Bank Ltd
17. Ecobank Ltd
18. I & M Bank Ltd
19. Diamond Trust Bank Ltd
20. Family Bank Ltd
21. Housing Finance Co. of Kenya Ltd
22. Habib Bank Ltd

23. Oriental Commercial Bank Ltd
24. Habib Bank A.G. Zurich
25. Middle East Bank Ltd
26. Dubai Bank Ltd
27. Consolidated Bank of Kenya Ltd
28. Credit Bank Ltd
29. Trans-National Bank Ltd
30. African Banking Corporation Ltd
31. Giro Commercial Bank Ltd
32. Equatorial Bank Ltd
33. Paramount Universal Bank Ltd
34. Jamii Bora Bank Ltd
35. Guaranty Trust Bank Ltd
36. Victoria Commercial Bank Ltd
37. Guardian Bank Ltd
38. Development Bank of Kenya Ltd
39. Fidelity Commercial Bank Ltd
40. Charterhouse Bank Ltd
41. K-Rep Bank Ltd
42. Gulf African Bank Ltd
43. First Community Bank Ltd
44. UBA Kenya Bank Ltd

Source: Central Bank of Kenya, 2014

Appendix II: Non – Performing Loans Ratio

NON PERFORMING LOANS RATIO						
		2014	2013	2012	2011	2010
1	Kenya Commercial Bank Ltd	0.051935	0.048746	0.05112	0.041285	0.089361
2	Equity Bank Ltd	0.038705	0.039015	0.038097	0.04304	0.043314
3	Co-operative Bank of Kenya Ltd	0.044009	0.044362	0.043319	0.048939	0.04925
4	Standard Chartered Bank Ltd	0.083499	0.084167	0.082188	0.092851	0.093442
5	Barclays Bank of Kenya Ltd	0.035522	0.035806	0.034964	0.0395	0.039751
6	NIC Bank Ltd	0.060918	0.061405	0.059962	0.067741	0.068172
7	Diamond Trust Bank Ltd	0.012587	0.012688	0.012389	0.013997	0.014086
8	Commercial Bank of Africa Ltd	0.040683	0.041009	0.040045	0.04524	0.045528
9	I & M Bank Ltd	0.020984	0.021152	0.020655	0.023335	0.023483
10	CfC Stanbic Bank Ltd	0.037529	0.037829	0.03694	0.041732	0.041998
11	National Bank of Kenya Ltd	0.00281	0.07131	0.04613	0.018185	0.018937
12	Chase Bank Ltd	0.057238	0.057696	0.056339	0.063649	0.064054
13	Housing Finance Co. of Kenya Ltd	0.089991	0.090711	0.088578	0.10007	0.100708
14	Family Bank Ltd	0.071747	0.072321	0.070621	0.079783	0.080291
15	Bank of Africa Ltd	0.061474	0.061966	0.060509	0.068359	0.068795
16	Prime Bank Ltd	0.018996	0.019148	0.018698	0.021124	0.021258
17	Imperial Bank Ltd	0.063468	0.063976	0.062472	0.070577	0.071026
18	Bank of Baroda Ltd	0.036722	0.037015	0.036145	0.040834	0.041094
19	Citibank N.A.	0.035899	0.036186	0.035335	0.03992	0.040174
20	Ecobank Ltd	0.02048	0.02865	0.00446	0.113478	0.114201
21	Gulf African Bank Ltd	0.073429	0.074016	0.072276	0.081653	0.082173
22	African Banking Corporation	0.065492	0.066016	0.064464	0.072828	0.073291
23	Guaranty Trust Bank Ltd.	0.036729	0.037022	0.036152	0.040842	0.041102

24	Bank of India Ltd	0.005708	0.005754	0.005619	0.006348	0.006388
25	Equatorial Commercial Bank Ltd	0.262051	0.264147	0.257937	0.291401	0.293257
26	K-Rep Bank Ltd	0.069199	0.069753	0.068113	0.07695	0.07744
27	Victoria Commercial Bank Ltd	0	0.071278	0.016781	0.167825	0.079133
28	Consolidated Bank of Kenya Ltd	0.0611	0.063189	0.057	0.00343	0.002192
29	Fidelity Commercial Bank Ltd	0.077482	0.078101	0.076265	0.08616	0.086708
30	Guardian Bank Ltd	0.076445	0.077056	0.075245	0.085007	0.085548
31	First Community Bank Ltd	0.001952	0.003168	0.009566	0.008971	0.070047
32	Development Bank of Kenya Ltd	0.141663	0.142796	0.139439	0.157529	0.158533
33	Giro Commercial Bank Ltd	0.032109	0.032366	0.031605	0.035705	0.035932
34	Trans-National Bank Ltd	0.080042	0.080683	0.078786	0.089007	0.089574
35	Jamii Bora Bank Ltd	0.093131	0.093876	0.091669	0.103562	0.104221
36	Credit Bank Ltd	0.009541	0.010338	0.097979	0.01069	0.011395
37	Paramount Universal Bank Ltd	0.017254	0.018832	0.014157	0.019346	0.020743
38	Oriental Commercial Bank Ltd	0.008704	0.009574	0.006998	0.020879	0.021649
39	Habib Bank Ltd	0.072658	0.073239	0.071517	0.080795	0.08131
40	Dubai Bank Ltd	0.049905	0.054304	0.041271	0.011494	0.015389
41	Middle East Bank Ltd	0.01081	0.02481	0.055369	0.03369	0.035815
42	Habib A.G. Zurich	0.024397	0.024593	0.024014	0.02713	0.027303
43	UBA Kenya Bank Ltd	0.066242	0.066772	0.065202	0.073661	0.07413

Source: Central Bank of Kenya

Appendix III: Credit Reference Bureaus Information Sharing logarithm

Credit Reference Bureaus Information Sharing logarithm						
		2014	2013	2012	2011	2010
1	Kenya Commercial Bank Ltd	11.6313	11.6313	11.13088	11.13715	11.08233
2	Equity Bank Ltd	11.82674	11.82674	11.32632	11.33259	11.27777
3	Co-operative Bank of Kenya Ltd	11.57941	11.57941	11.07898	11.08525	11.03043
4	Standard Chartered Bank Ltd	11.37119	11.37119	10.87076	10.87704	10.82222
5	Barclays Bank of Kenya Ltd	11.35965	11.35965	10.85922	10.86549	10.81067
6	NIC Bank Ltd	11.17377	11.17377	10.67334	10.67962	10.62479
7	Diamond Trust Bank Ltd	10.96109	10.96109	10.46066	10.46693	10.41211
8	Commercial Bank of Africa Ltd	10.91321	10.91321	10.41279	10.41906	10.36424
9	I & M Bank Ltd	10.75503	10.75503	10.2546	10.26087	10.20605
10	CfC Stanbic Bank Ltd	10.70972	10.70972	10.20929	10.21557	10.16074
11	National Bank of Kenya Ltd	10.99151	10.99151	10.49108	10.49736	10.44254
12	Chase Bank Ltd	10.73413	10.73413	10.23371	10.23998	10.18516
13	Housing Finance Co. of Kenya Ltd	10.77862	10.77862	10.2782	10.28447	10.22965
14	Family Bank Ltd	11.01879	11.01879	10.51837	10.52464	10.46982
15	Bank of Africa Ltd	10.41265	10.41265	9.912226	9.9185	9.863678
16	Prime Bank Ltd	10.4506	10.4506	9.950171	9.956445	9.901623
17	Imperial Bank Ltd	10.14557	10.14557	9.645145	9.651419	9.596597
18	Bank of Baroda Ltd	10.08151	10.08151	9.581083	9.587356	9.532534
19	Citibank N.A.	10.29803	10.29803	9.797601	9.803875	9.749053
20	Ecobank Ltd	10.27422	10.27422	9.773797	9.780071	9.725249
21	Gulf African Bank Ltd	10.2348	10.2348	9.734378	9.740652	9.68583
22	African Banking Corporation	10.11803	10.11803	9.617609	9.623882	9.56906
23	Guaranty Trust Bank Ltd.	10.27422	10.27422	9.773797	9.780071	9.725249
24	Bank of India Ltd	10.19563	10.19563	9.695209	9.701483	9.646661

25	Equatorial Commercial Bank Ltd	10.07217	10.07217	9.571749	9.578023	9.523201
26	K-Rep Bank Ltd	9.339788	9.339788	8.839363	8.845637	8.790814
27	Victoria Commercial Bank Ltd	9.275941	9.275941	8.775515	8.781789	8.726967
28	Consolidated Bank of Kenya Ltd	9.994014	9.994014	9.493588	9.499862	9.44504
29	Fidelity Commercial Bank Ltd	9.85093	9.85093	9.350505	9.356778	9.301956
30	Guardian Bank Ltd	9.896815	9.896815	9.39639	9.402663	9.347841
31	First Community Bank Ltd	9.734891	9.734891	9.234466	9.240739	9.185917
32	Development Bank of Kenya Ltd	10.0676	10.0676	9.567177	9.573451	9.518629
33	Giro Commercial Bank Ltd	9.829141	9.829141	9.328715	9.334989	9.280167
34	Trans-National Bank Ltd	10.22742	10.22742	9.726991	9.733265	9.678443
35	Jamii Bora Bank Ltd	10.64142	10.64142	10.14099	10.14726	10.09244
36	Credit Bank Ltd	10.30008	10.30008	9.799654	9.805928	9.751106
37	Paramount Universal Bank Ltd	9.994105	9.994105	9.493679	9.499953	9.445131
38	Oriental Commercial Bank Ltd	9.895707	9.895707	9.395282	9.401555	9.346733
39	Habib Bank Ltd	9.753188	9.753188	9.252762	9.259036	9.204214
40	Dubai Bank Ltd	9.601639	9.601639	9.101213	9.107487	9.052665
41	Middle East Bank Ltd	9.328657	9.328657	8.828231	8.834505	8.779683
42	Habib A.G. Zurich	9.304377	9.304377	8.803951	8.810225	8.755403
43	UBA Kenya Bank Ltd	9.324918	9.324918	8.824493	8.830766	8.775944

Source: Research Findings