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EFFECT OF CREDIT INFORMATION SHARING ON NON-PERFORMING LOANS OF COMMERCIAL BANKS IN KENYA

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Abstract: *Credit information sharing schemes help financiers in identifying defaulters through accessing the clients' credit status as the information concerning a client is readily available through the credit bureau (CB). Thus, this study aimed at determining the effect of credit information sharing on non-performing loans in commercial banks in Kenya. A descriptive design was the preferred method and the study's population comprised the 43 commercial banks in Kenya. The study used secondary data and an event study methodology was applied for data analysis. The study compared credit information sharing with non-performing loans ratio 7 years before and f 7 years after adoption credit information sharing in Kenya. The findings established that the t statistics for NPLs before CIS and NPLs after CIS was significant hence an indication that there was a significant positive variation in the level of nonperforming loans before and after credit information sharing. Additionally, the results revealed that t statistics value for ROA before CIS and ROA after CIS was insignificant hence, an indication of no significant variation linking credit information sharing and ROA. The results also revealed the t statistics value for ROE before CIS and ROE was insignificant hence an indication that there is no significant variation between credit information sharing and ROE. The study concluded that information sharing significantly influences non-performing loans among commercial banks in Kenya but credit information sharing does not significantly influence the profitability of commercial banks in terms of ROA and ROE. The study recommended that management of commercial banks to continue sharing credit information in order to reduce the level of nonperforming loans.*

Keywords: *Credit Information Sharing, Commercial Banks, Non Performing Loans*

INTRODUCTION

Credit References Bureaus (CRBs) are institutions that serve as a complement to commercial banks' lending activity. Credit bureaus are information brokers, who provide lenders with repayment practices and current in-debtness of credit applicants (Sinare, 2008). Non-performing loans (NPLs) arise when, for lack of information, un-creditworthy borrowers are given loans. Often this threatens the survival of banks. Schreiner (2001) notes that most financial institutions are affected by non-performing loans. Consequently, banks globally have adopted the need to screen prospective borrowers by independent agencies, to establish their credit-worthiness before advancing funds to them. Such agencies facilitate credit information sharing. Through credit information sharing, financial institutions and related bodies share credit worthiness of an individual seeking to secure a loan, through principal entities, called Credit reference bureaus.

Various theories and scholars have reiterated that sharing credit information helps in separating risky borrowers from safe ones and at the same time lower the lending rates (Artigas, 2004). There may exist information asymmetry where one party has more information pertaining the market than other competing parties while adverse selection is the inability of the lender to separate the safe borrowers from the risky ones (Curak, Pepur

& Poposki, 2013). On the other hand, moral hazard arises where the borrower does not honor the pledge of repaying the loan (McIntosh & Wydick, 2007). Thus, CIS solves the moral hazard and adverse selection problems through credit reference bureaus, which act to bridge the gap on the information pertaining to a particular borrower which they avail to the lenders (Maina et al., 2016).

The Kenyan scenario has seen banks lend money to serial defaulters. This arises from the fact that these institutions have different credit information about their borrowers. Borrowers have continuously taken advantage of the inadequate information by the lenders hence the increased number of defaulters in many financial institutions. This has consequently led to rise in level of NPA's. Kenyan banks continuously face problems dealing with asymmetric information, which is due to borrowers' informational blurriness, and moral hazard that exists in credit markets. Thus, the challenge of non-performing loans prompted the CBK and other stakeholders like KBA, to amend the Banking Act (Cap 488 Laws of Kenya) to allow for sharing of information regarding non-performing loans. As matter of fact, section 31 (4) of the Banking Act provides for creation of credit reference bureaus (CRBs) as a vehicle for information sharing for purposes of addressing NPLs problem in Kenya's commercial banks.

Credit Information Sharing

Credit information sharing refers to the procedure whereby financiers present the information concerning the credit status of their clients to CRB so other credit providers can share (Jappelli & Pagano, 2005). They help assign the information concerning the clients' creditworthiness, which helps in reducing the number of NPLs among the financial institutions (Peria & Singh, 2014). The report produced by CRBs include client's particulars such as; information on loan repayment, debtor's character, bankruptcy, delay in loan repayment settlement (Wasseja, Oseso & Ochieng, 2016).

Credit information sharing schemes help financiers to avoid excessive losses suffered when they lend to the risky borrowers, which increases the amount of NPLs, and this information is availed by the credit bureaus which are publicly or privately owned (Peria & Singh, 2014). This is a common and vital factor in the current banking system as each and every client has to be screened before accessing funds from any financial institution since MFI's provides for both their institution clients and those of other banks. Moreover, information sharing allows creditors make a proper assessment of potential customer risk profile and hence the institutions are able to separate the safe from risky borrowers (Turner & Varghese, 2010). This is vital especially among the developing nations whereby majority of the citizens are low-income earners and default rate is high (Brown et al., 2007). CIS enables banks to distinguish between bad and good borrowers. Therefore, defaulters will not be able to walk into a bank and get credit. Lenders who provide their personal information to credit bureaus are able to access the information presented on time (Jappelli & Pagano, 2005). The number of reports generated by credit bureaus and requested by lenders and clients is frequently used to proxy the level of credit information sharing.

Non-Performing Loans

The Basel Committee (2001) and the International Monetary Fund (IMF) assert that anon-performing loan is one whose both interest on the loan, and the relevant portion of the principal has not been paid for a period of over 90 days. Similarly, any loan whose outstanding interest is capitalized, financed again, or on agreement, the payment of such interest has been deferred; and /or where there are sufficient reasons to believe that recovery of such outstanding interest in full is questionable.

Nonperforming loans have negative effect on economic and financial costs. Their presence hampers investment, increases deposit liabilities, shrinks the operations margin and limits bank liquidity. This in turn, constrains the availability of credit. When left to compound, an economic credit crunch will result from the erosion of the bank's assets therefore banks continually incur costs to manage NPLs using reference bureaus, allocating provisions and outsourcing debt recovery services (Sultana, 2002). Leyland and Pyle (1977) found banks with more NPLs incurring carrying costs on non-income generating assets, which reduce profitability and adequacy of the bank's capital. They also stated that quality assets are dependent on credit information. According to Nelson, Vasanthi and Selvaraju (2006), if the banks are not keen to ensure that their loans do not go into default then the banks will go tumbling down and the entire economy will be threatened. Portfolio management strategies are key objectives observed by banks so as to reduce NPLs are important objectives of the banks. Since unsecured personal loan policies change rapidly, stringent measures such as adherence to credit information sharing have been instated to reduce non-performing loans.

Commercial Banks in Kenya

The banking sector in Kenya comprises of 43 banks with 42 being commercial banks and 1as a mortgage finance company (MFC). Commercial banks in Kenya are classified into large bank, medium banks and small banks. Since independence, Kenya financial sector grew from five banks to 83 bank in 1980, then closed 43 banks between 1980-2005. This is besides the recent banking stress of 2015-16. Putting the current number at 43 banks (Misati, Njoroge, Kamau & Ouma, 2010). Since the Commercial banks has expanded its branch network giving it a growth of 530 to 1,102 branches as from the beginning of 1999 to the end of June 2011, deposit accounts rose from one million ranging 20,000- 30,000 staff whereas ATMs registered an increase from 262 to 2,021, (CBK, 2011). The contribution of the banking industry is critical in achieving vision 2030 aspiration. Banks are faced with the task of developing a safe and reliable payment system amongst business people and organization (GoK, 2008).

Research Problem

Credit bureaus have emerged as essential information centers for probable lender in any economy. All lenders who do not want the risk of incurring bad and non-recoverable loans arising from loan defaulters have appreciated their services. For banks, nonperforming loans have been a major source of banking stress. This is based on the fact that the business of a bank is lending money for interest income, and loan recovery. Consequently, loan defaulting simply brings down the entire business of a bank. In support of the recommendations by Basel 11, globally, banks should adopt practices of credit risk management that are most suitable to keep off falling into problems of non-performing loans which influence its performance. Identification of poor creditors before issuing loans to tem is all what CBRs should do.

In Kenya, most of the financial institutions have suffered from information asymmetry, which has raised the adverse selection and moral hazard problem. Over the years, customers have been enjoying the regulatory protection of confidentiality. Banks were prohibited from sharing customer banking information and this led to increasing information asymmetry and non-performing loans, since defaulters could move from one bank to another without detection. According to CBK banking supervision report of 2016, commercial banks and other institutions under the deposit protection fund board have progressively submitted credit information about their borrowers to the licensed CRBs within the laid-out timelines as per the requirements of the credit Information Sharing (CIS) mechanism. The banking sector has resorted into integrating the CIS reports before considering advancing loans.

Several international empirical studies have been undertaken on credit information sharing. Peria and Singh (2014) analyzed the effect of credit bureaus on accessing loans in the financial institutions where the results revealed that they have tremendously improved the ease at which loans can be accessed especially among the nations whereby contract execution is weaker but the study did not focus on nonperforming loans. Grajzl and Laptieva (2011) also studied the effect of sharing credit information and profitability of banks in Ukraine where a direct correlation linking the two variables was established but the study focused on lending and not on NPLs. Locally, a few studies have been carried out around credit information sharing and how it impacts on profitability of banking sector in Kenya. They include Aloyo (2013) who examined the effects of credit reference bureaus on profitability in Kenyan banking sector but used different independent variables from those of this study; Chakazamba, Ndialo and Ntililwe (2013) who have also studied the same idea but from the Zimbabwean perspective. However, little studies have been done on the effect of credit information sharing on NPLs using an event study methodology. In addition, credit information sharing is a recent issue in the Kenyan market hence much has not been studied regarding its effects on the Kenyan banking sector with the available studies documenting conflicting findings. Thus, the study aimed at finding out; what is the effect of credit information sharing on non-performing loans of commercial banks in Kenya?

Research Objective

To determine the effect of credit information sharing on non-performing loans of commercial banks in Kenya.

LITERATURE REVIEW

Theoretical Literature Review

Information Asymmetry Theory

Akerlof (1970) advanced the theory of information asymmetry. Using an automobile market, Akerlof observed that buyers have knowledge of the entire set of goods available on the market. However, sellers have intimate knowledge of specific goods they want to sell. This results in imbalance of knowledge between the sellers and the buyers. The sellers were observed to use this knowledge gap to sell goods of lower quality to buyers, thus taking advantage and hence reaping from buyers with limited information. The contract and economic theories define the information asymmetry theory as the study of transaction decisions where one party exhibits more market information than the other does. This scenario brings about varying transactional capabilities among market participants, which result in awry transactions, which is an indication of market failure (Yun, 2009). This theory argues that information asymmetry among the various market players influence all external financing methods through limiting availability or by increasing costs. Therefore, the acquisition and use of bank lines is influenced by information asymmetry since short-term bank credit is the main external source for firm liquidity. Studies done by other authors however state that the capital market frictions are mitigated by the use of short-term credits through reduced information asymmetry and increased monitoring (Faulkender & Petersen, 2006).

According to the theory, if reduction of information asymmetry can be achieved through information sharing, then firms with information access will experience little information asymmetry compared to firms without little information access. The available empirical evidence indicates that information asymmetry greatly influences the lending capability of a bank (Hardin & Hill, 2010). Information asymmetry directly influences the willingness of the lenders to lend. More risk is as a result of the uncertainty due to greater variability in investment opportunities and the level of performance. Banks use operation of cash flow measures in the evaluation of debt service and determination of repayment capacity. Most bank borrowings are brought about

byte need to access to equity markets and public debt (Faulkender & Petersen, 2006). Those firms that are affected by adverse information asymmetry have limited ability to pay-off or reduce their credit line as expected. The fact that the monitoring cost by lenders is increased by information asymmetry problems limits the less transparent firms from obtaining and using the lines of credit as an alternative liquidity source.

Moral Hazard Theory

The term moral hazard is used to describe the problem of asymmetric information which comes after each transaction. The fact that the lender is not certain whether the borrower will pay back the loan due to some undesirable behavior subjects the lender to a hazard about the borrower (Pagano & Jappelli, 1993). It could also be that banks engage in high risk investment activities or charges higher interest rates that makes it difficult for borrowers to repay. Moral hazard arises out of information asymmetries since the flow of information between the borrowers and lenders do not make any economic sense. Moral hazards may be ex-post or ex-ante. Ex-ante moral hazard is more favorable for borrowers not to pass negative information to potential lenders. The Ex-post moral hazard situation asserts that borrower clients who can repay their debt can choose to default payment or enter into more risky activities than those being offered to the lender. Government intervention is needed. Moral hazard model shows that, the existence of credit bureaus increases the incentives of the borrowers to repay and it results in a welfare gain when designed appropriately.

A study by Freixas and Rochet (1997) concluded that modern microeconomic banking models are determined by improvements in information economics that were missing when the monetarist and traditional Keynesian theories were developed. Economists are still trying to find out the factors which bring about macroeconomic instability thus we should expect new the microeconomic theory models of banking to the business cycles macroeconomic theory. The rate of economic growth mainly depends on the financial institutions' efficiency in modern microeconomics. The financial systems are also dependent on accurate information regarding borrowers and the project being funded (Chakraborty & Play, 2001).

Adverse Selection Theory

The scenario where one individual has more market information than the other in a trading relationship is referred to as adverse selection Akerlof (1970) and Spence (1973). The problem of adverse selection arises when the client is not able to gain information pertaining to the characteristics of the vendor or the rule of thumb of the seller (Nayyar, 2010). When it comes to financial matters in the bank industry, the theory is because of potential bad credit risks arising for loans (Mishkin, 2011). The lenders are in most cases not able to separate the bad and good borrowers hence end up charging high rates to cover up for the amount that may be lost during the process (Jappelli & Pagano, 1999). High risk takers are however always not scared by high interest loans when they decide borrow loans (Mishkin, 2011). Ultimately, in capital market instances, the lenders who are partially informed are afraid of high interest loans due to the fear that those high interest rate borrowers are most likely to be defaulters. This form of screening helps identify the bad debtors from good ones**.** This leads to the decrease of amount of loans given to the lender.

According to Pagano and Jappelli (1993), information pertaining to the borrowers, helps eliminate the problem through availing more information to banks which is then used on credit applicants. The asymmetric information theory argues that it is more difficult to distinguish bad borrowers from good borrowers, which lead to problems of adverse selection and moral hazard (Auronen, 2003). This theory explains that the party with more information regarding the item being traded in the market is in a better position to negotiate for better terms concerning a transaction as compared to the one with little information (Auronen, 2003). In addition, the party with little information about the item being traded is capable of making either right or wrong

decisions regarding the transaction. Both moral hazards and adverse selection and have significantly increased nonperforming loans in the banking sector (Bofondi & Gobbi, 2003).

Empirical Review

Khemraj and Pasha (2010) studied the factors influencing NPLs in among banks in India. The empirical results showed a negative correlation linking economic growth to NPLs implying that as economy grows, the number of NPLs reduces and vice versa. Additionally, banks which lend to risky borrowers by charging high rates have high number of NPLs. Their study however revealed weak correlation exists that large banks are able to separate the risky borrowers from safe one with ease compared to small ones. Kargi (2011) carried out a study to determine the impact of NPLs on ROA of Nigerian banks. The study applied ROA ratio as indicators of banks profitability which was obtained from annual records of inspected banks 2005-2009 utilizing descriptive statistics model. The results indicated that credit risk management significantly affects the performance of Nigerian banks. The study inferred that banks' benefit is contrarily impacted by nonperforming loans, in this way presenting them to incredible danger of illiquidity and loss.

Chernykh and Theodossiou (2011) carried out a study to analyze the factors influencing the performance of loans in developing nations using bank-level information from 881 banks in Russia. The variables of concern included size, capitalization, liability, managerial expertise and location of individual banks. The findings reveal that size which was determined by banks assets is the major aspect influencing not only loans expended but also long-term loans. This is attributed to the fact that large banks due to the number of assets they own are able to overcome the risks associated with lending to risky borrowers. The study thus demonstrates that there are supply-side constraints to credit expansion, although it did not consider the role of collateral on bank lending levels. Magnifique (2013) examined the impact of management of credit risk and profitability banks in Rwanda. The study aimed at determining how credit risk impacts on the returns of commercial banks in the country and risk monitoring mechanism influenced commercial banks' profitability in Rwanda. The descriptive research design was utilized to assess the impact of legislation on financial performance of commercial banks. Data was collected from primary sources using questionnaires, which were then analyzed with the help of SPSS. The study concluded that all the measures of credit risk management have a direct correlation to commercial banks' profitability in Rwanda with an exception of risk monitoring.

Locally, Shisia (2014) analyzed the significance of (CRB) in managing NPLs in Kenyan banking sector. The study used secondary sources from the existing literature which covered a 6-year period (2009-2014). The study findings established a strong and positive relationship between CRB and NPLs in the banking sector. Regression results revealed factors such as the person's reputation as well as guarantors have a direct correlation to the performance of NPLs among the commercial banks in the Kenya. The study recommended the Kenyan CRB firms should incorporate other bureaus in the East African community to determine the credit ratings of an individual**.**

Kusi and Ansah-Adu (2015) investigated the impact of sharing credit information on accessing loans across different wage categories. The study used secondary sources of data for a 10-year period (2002-2012). Study findings revealed access to bank loans has a significant influence to the ease of accessing bank loans with people earning high wages can access loans with ease compared to those with low income who have to overcome numerous challenges before accessing bank loans. It further revealed that sharing information could help ease the challenge faced in accessing loans especially among the low-income earners. Further, the study found that growth of GDP is directly correlated to NPLs.

Kiage, Musyoka and Muturi (2015) investigated the effect of information sharing in commercial banks in the Western part of Kenya. It sampled 30 credit officers from 20 commercial banks and collected data using a questionnaire. The study findings established that costs of information sharing had an adverse relationship to the profitability of banks in the region. The study recommended that financial institutions and credit bureaus should safeguard private information which they hold.

Toroitich and Omwono (2015) assessed the association linking NPLs to profitability of Equity Bank (K) ltd, Eldoret Town. The study adopted a correlation research design from secondary sources covering the year 2008-2014. The findings of the study established that when the non-performing loans increased, the performances of equity bank branches were affected negatively. The study recommended that the credit department staff should have higher loan targets as this contributes significantly to the profits of the bank. The study also recommended that the non-performing loans should be kept at the minimum. Mugwe and Oliweny (2015) examined the impact of credit information sharing on profitability of Kenyan banks. The study collected data from all 40 commercial banks in Kenya covering 10 years (2004-2015). Descriptive study was employed in analyzing data. The study results indicated an increase in ROA, ROE among the commercial banks after the establishment of CRB (2010 to 2014).

Conceptual Framework

The conceptual framework gives a portrayal of how the factors identified are related to each other. The factors characterized here are credit information sharing and non-performing loans. The independent variable was Credit Reference Bureaus Information Sharing as measured by the number of credit requested by commercial banks from credit reference bureaus reports shared. Non-performing loans was the dependent variable which the study seeks to explain and it will be measured by nonperforming loans ratio.

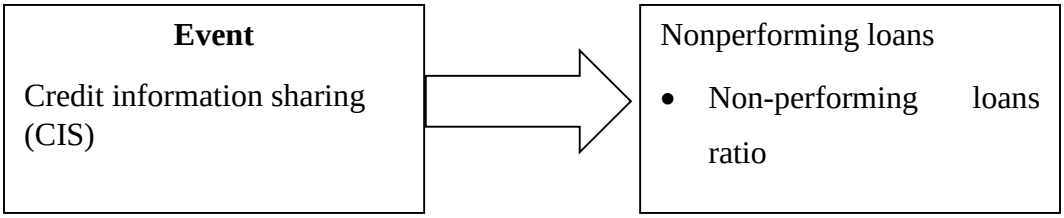

Figure 1: Conceptual Model

RESEARCH METHODOLOGY

Descriptive cross sectional research design was adopted for the study and the study's population comprised all the 42 commercial banks that were in operation in Kenya in the years 2002 to 2016. Since the study's population was small, a census study was undertaken. The data used in the study was obtained from secondary sources which included the amount of NPLs in commercial banks covering 2002 to 2016 as well as credit reports accessed by banks and individuals from CRBs annually. The quarterly reports were obtained from CBK from2002 to 2016. In addition, thus study collected data on the banks' loans and advances for the same period, banks total assets as well as net NPLs. The study adopted an event study methodology and used descriptive statistics like the mean, standard deviation to summarize the analyze data. Event study methodology was used to compare credit information sharing with non-performing loans ratio 7 years before and 7 years after adoption of credit information sharing.

DATA ANALYSIS, RESULTS AND INTERPRETATION

Descriptive Statistics

Descriptive statistics entailed the paired samples test which comprised of the mean, standard deviation, standard error of the mean as well as the graphical presentations of the considered variables.

Paired Samples Statistics

Table 1: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	NPLs before CIS	.12471	7	.045243	.017100
	NPLs after CIS	.05043	7	.014752	.005576
Pair 2	ROA before CIS	.03014	7	.011437	.004323
	ROA after CIS	.03129	7	.002812	.001063
Pair 3	ROE before CIS	.23800	7	.089547	.033846
	ROE after CIS	.20114	7	.018739	.007083
Credit reports requested		2310992.57	7	2205695.87	833674.67

Table 1 shows the paired samples descriptive statistics. The table indicates that the average value of nonperforming loans before credit information sharing was 0.12471 while the mean value of nonperforming loans after CIS was 0.05043. This indicates that non-performing loans were high before CIS than after CIS. The table also shows that the average ROA and ROE before CIS were 0.03014 and 0.23800 while the average ROA and ROE after CIS were 0.03129 and 0.20114 respectively. The table shows the mean value credit reports requested by commercial banks in Kenya was 2310992.57.

Graphical Presentations

NPLR Trend

Figure 2 shows that nonperforming loans sharply decreased between 2002 and 2003 but a sharp increase was witnessed in 2004 and 2005 then a gradual fall in nonperforming loans from 2006 although to 2011 and then a gradual increase from 2012 to 2016.

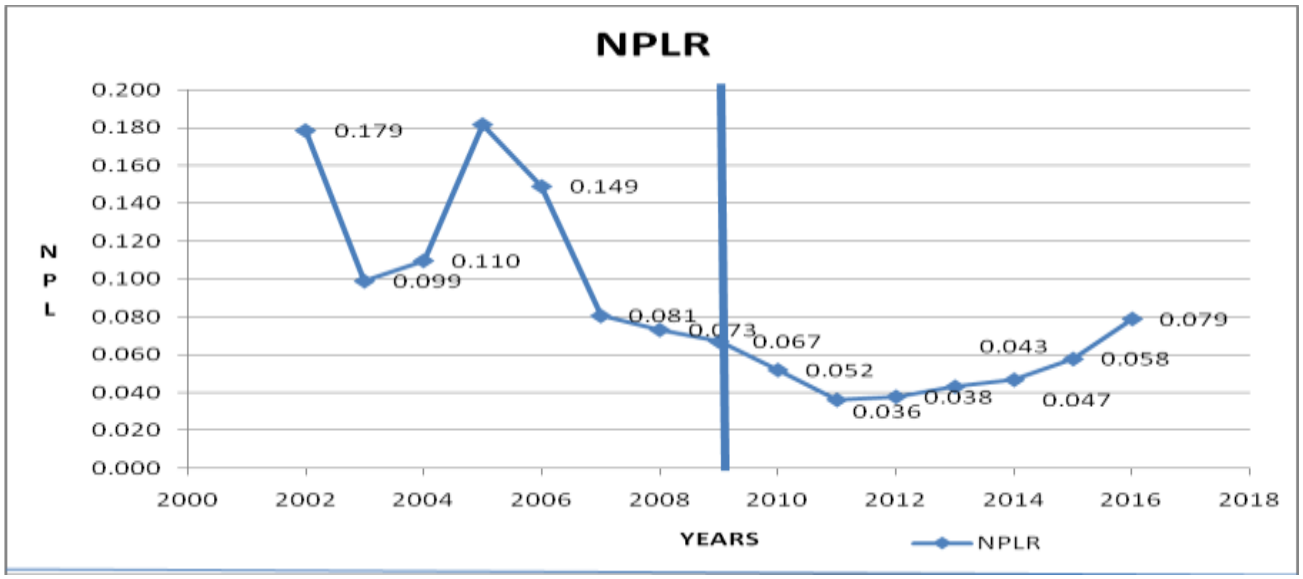

Figure 2: NPLR Trend

CIS Trend

Figure 3 shows the trend of credit reports requested by banks in Kenya. According to the figure, credit reports requested by commercial banks increased gradually from 2010 although to 2014 but a steady increase was witnessed in 2015 and a fall in 2016, which may indicate that lending, might have dropped in 2016 but in the previous year lending was increasing.

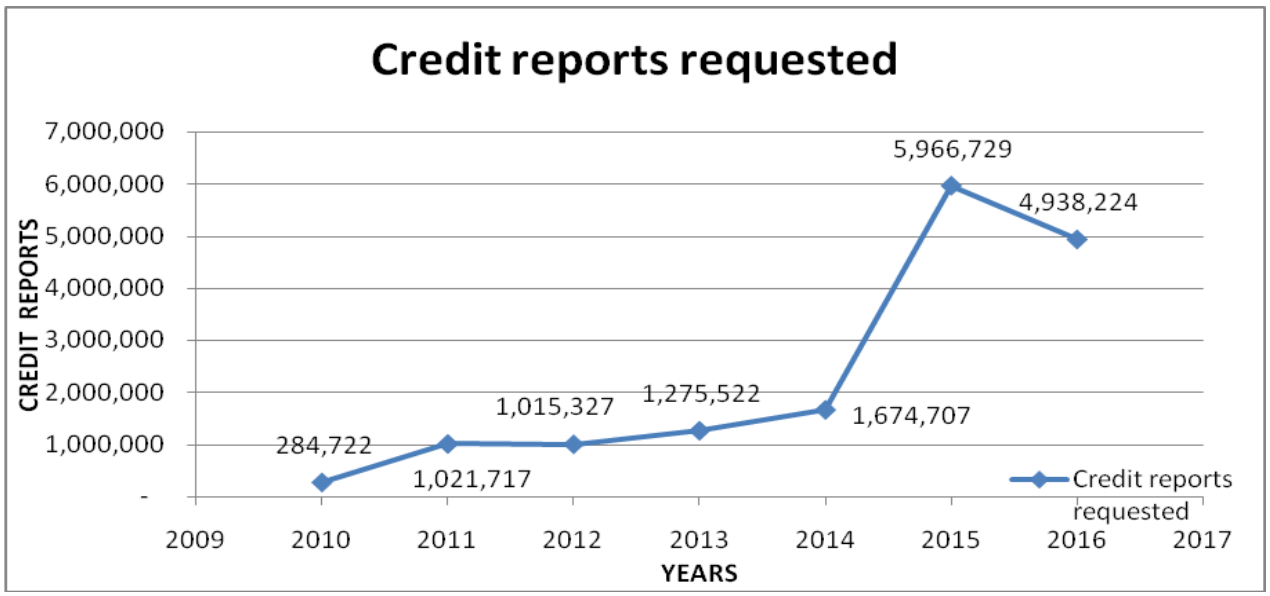

Figure 3: CIS Trend

ROA Trend

Figure 4 shows the ROA of commercial banks from 2002 to 2016. The figure shows that the ROA for banks was steadily increasing from 2002 although to 2006 but ROA steadily declined in 2007, 2008 and 2009 thereafter a rise was witnessed in 2010 and a gradual decline from 2011up to 2016.

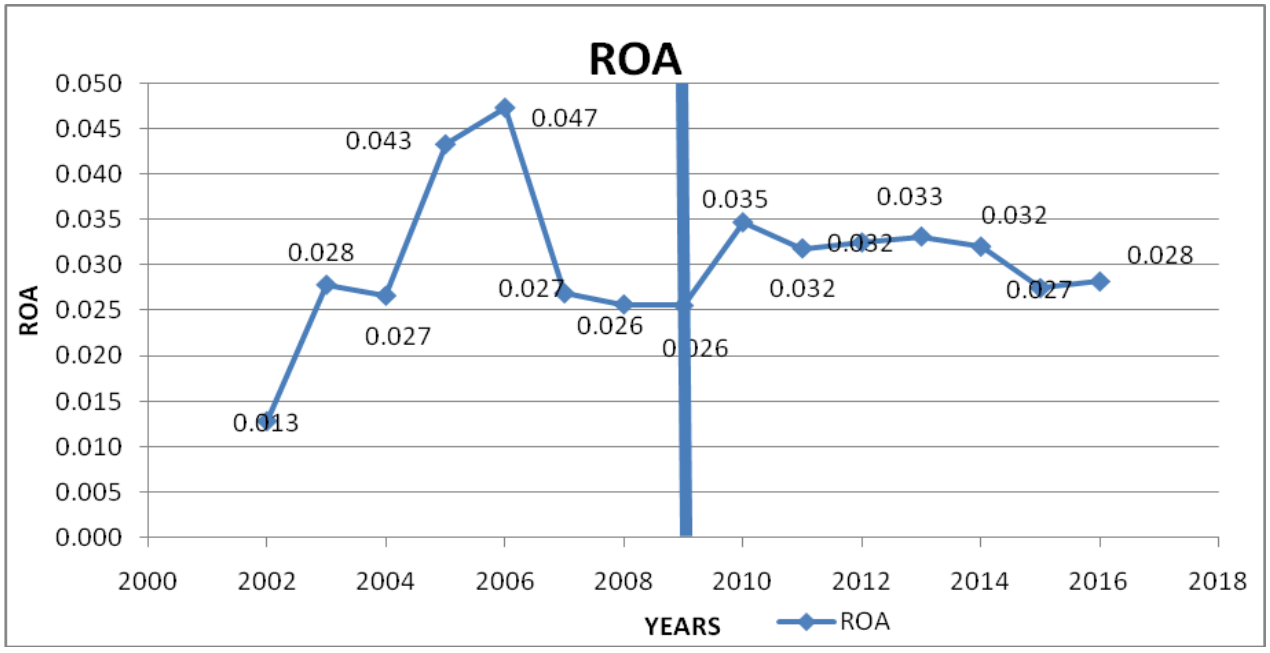

Figure 4: ROA Trend

ROE Trend

The ROE trend on figure 5 show that ROE increase steadily from 2002 to 2007 and the declined in 2007 up to 2010 then increased in 2011 but declined again all through to 2016.

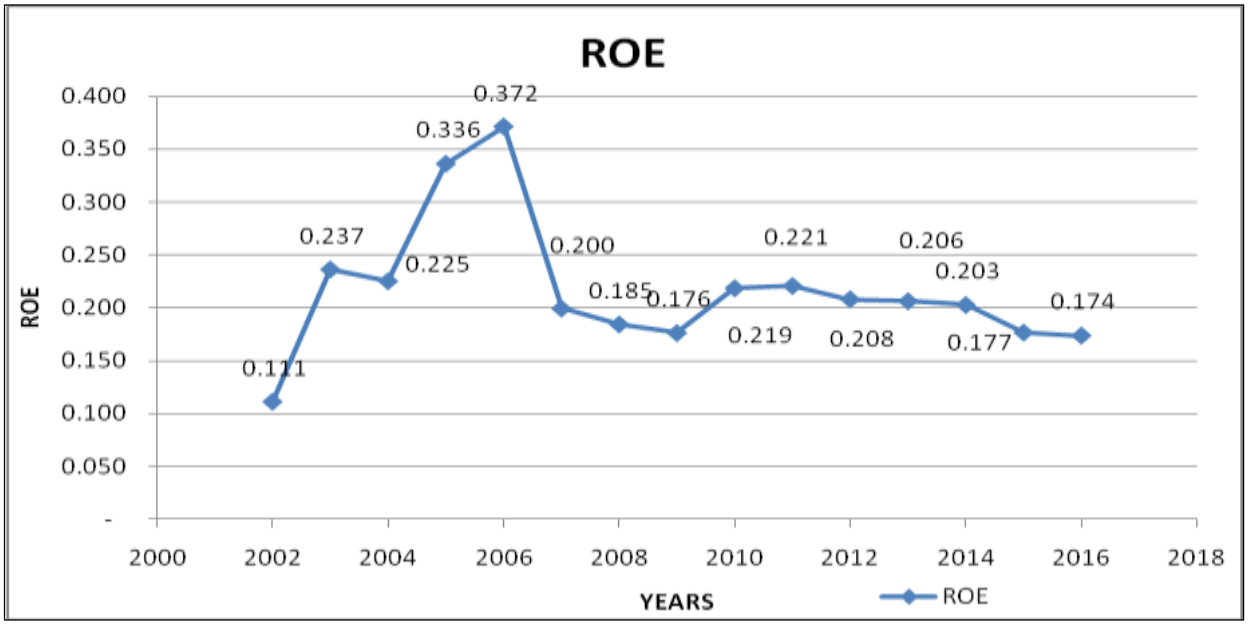

Figure 5: ROE Trend

Correlations

Table 2 indicates the results

Table 2: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	NPLs before CIS & NPLs after CIS	7	-.419	.349
Pair 2	ROA before CIS & ROA after CIS	7	-.033	.945
Pair 3	ROE before CIS & ROE after CIS	7	.070	.882

The correlations on table 2 indicates that there is a weak negative correlation between non-performing loans and before CIS and after CIS, and also between ROA before and after CIS. The table further indicates that there is a weak positive correlation between ROE and CIS and CIS.

Inferential Statistics

The statistical package for social sciences was employed to run the Paired Samples Statistics for NPLs, ROA and ROE before and after credit information sharing. The results were as follows

Table 3: Paired Samples Tests

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	NPLs before CIS – NPLs after CIS	.074286	.053140	.020085	.025139	.123432	3.699	6	.010
Pair 2	ROA before CIS – ROA after CIS	-.001143	.011866	.004485	-.012117	.009832	-.255	6	.807
Pair 3	ROE before CIS – ROE after CIS	.036857	.090195	.034091	-.046559	.120274	1.081	6	.321

Table 3 indicates the paired samples test. The table indicates that the t statistics for NPLs before CIS and NPLs after CIS was 3.699 is significant at 95% confidence level. This indicates that there was a significant positive variation between the level of nonperforming loans before and after credit information sharing. The table also shows that t statistics value for ROA before CIS and ROA after CIS is -0.255, which is insignificant at 95% confidence level hence an indication that there is no significant variation between credit information sharing and ROA. Finally, the table indicates that the t statistics value for ROE before CIS and ROE after CIS is -0.046559, which is insignificant at 95% confidence level hence an indication that there was no significant variation between credit information sharing and ROE.

Interpretation of the Findings

The study established the t statistics for NPLs before CIS and NPLs after CIS was 3.699 significant at 95% confidence interval (CI). This means a significant direct variation in the level of nonperforming loans before

and after credit information sharing hence there is direct relationship between CIS and nonperforming loans among Kenya's banking institutions**.** Shisia (2014) who established that blacklisting has both inverse and positive impact on the performance of NPLs in the financial institutions. Kusi and Ansah-Adu (2015) also revealed credit sharing makes accessing loans easy. Ocharo (2013) also found NPLs tends to reduce with increase in credit information sharing. Kisengese (2014) also revealed it reduces the number of NPLs by lending only to safe borrowers.

The findings established that the t statistics value for ROA before CIS and ROA after CIS was -0.255, which was insignificant at 95% confidence level. This means that there is no significant variation between credit information sharing and ROA. Finally, the results established that the t statistics value for ROE before CIS and ROE after CIS was -0.046559, which was insignificant at 95% confidence level. This meant that that there was no significant variation between credit information sharing and ROE. Mugwe and Oliweny (2015) however established ROE, ROA and net interest margin had a positive relation after establishment of CRB (2010 to 2014)**.** Kiage, Musyoka and Muturi (2015) also established that costs of information sharing had an adverse impact on the profitability of commercial banks.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The study aimed at establishing the effect of credit information sharing on non-performing loans of commercial banks in Kenya. It explored the information asymmetry theory, moral hazard theory and adverse selection theory. The independent variable was Credit Reference Bureaus Information Sharing as measured by the number of credit requested by commercial banks from credit reference bureaus reports shared. Non-performing loans was the dependent variable which the study seeks to explain and it will be measured by nonperforming loans ratio. The study used a descriptive research design and used secondary data from all commercial banks in Kenya from 2002 and 2016. An event study methodology was adopted where credit information sharing which will be compared with non-performing loans ratio 7 years before and 7 years after adoption of credit information sharing.

The paired samples descriptive statistics established that average value of nonperforming loans before credit information sharing was 0.12471 while the mean value of nonperforming loans after CIS was 0.05043. The findings also revealed that the average ROA and ROE before CIS were 0.03014 and 0.23800 while the average ROA and ROE after CIS were 0.03129 and 0.20114 respectively. The finding revealed that the mean value credit reports requested by commercial banks in Kenya were 2310992.57. The results of graphical trends indicated that nonperforming loans sharply decreased between 2002 and 2003 but a sharp increase was witnessed in 2004 and 2005 then a gradual fall in nonperforming loans from 2006 although to 2011 and then a gradual increase from 2012 to 2016. According to the results the trend of credit reports requested by increased gradually from 2010 although to 2014 but a steady increase was witnessed in 2015 and a fall in 2016. The results established that the ROA and ROE of commercial banks was steadily increasing from 2002 although to 2006 but ROA steadily declined in 2007, 2008 and 2009 thereafter a rise was witnessed in 2010 and a gradual decline from 2016 although to 2016.

The findings on paired samples correlation established a weak inverse relation linking NPLs and before CIS and after CIS, and also between ROA before and after CIS but there is a weak direct association linking ROE and CIS and CIS. The findings established that the t statistics for NPLs before CIS and NPLs after CIS is 3.699 were significant at 95% confidence level hence an indication that there was a significant positive variation in the level of nonperforming loans before and after credit information sharing. Additionally, the results revealed

that t statistics value for ROA before CIS and ROA after CIS is -0.255, which was insignificant at 95% confidence level hence an indication that there is no significant variation between credit information sharing and ROA. The results also revealed the t statistics value for ROE before CIS and ROE after CIS is -0.046559, which was insignificant at 95% confidence level hence an indication that there is no significant variation between credit information sharing and ROE.

Conclusions

The findings of the research established the relationship between NPLs before CIS and NPLs after CIS was positive and significant at 95% confidence level. The study therefore concludes a strong positive variation in the level of NPLs before and after credit information sharing hence there is direct relationship between CIS and Nonperforming loans among commercial banks in Kenya. Study findings also revealed that the correlation linking ROA before CIS and ROA after CIS was insignificant at 95% confidence level. The study therefore concludes that there is no significant variation between credit information sharing and ROA. The research also established that the relationship between ROE before CIS and ROE after CIS was insignificant at 95% confidence level. The study concluded there is no strong variation linking credit information sharing and ROE.

The study made the conclusion of existence of strong positive variation in level of NPLs before and after credit information sharing. Hence recommending that the management of commercial should ensure that they share credit information since credit information sharing reduces non-performing loans among commercial banks. The study also concluded that there was no significant variation between credit information sharing and the measures of profitability of returns on assets and return on equity. The study nonetheless recommends that commercial banks should enhance credit information sharing since a reduction in NPLs.

Limitations of the Study

This study focused on credit information sharing among commercial banks and its influence on NPLs. The findings thus are limited to commercial banks and no other financial institutions like deposit taking micro finance institutions, which are required to share their credit information and savings, and credit cooperative societies, which voluntarily share their clients' credit information. The study also used an event methodology study and the annual credit reports requested by banking institutions. However, there was no investigation on the effect of credit information and its effect of nonperforming of a specific banks or individual banks in Kenya.

Suggestion for Further Research

This study aimed at determining the relationship between non-performing loans and credit information sharing using an event study methodology. However, past studies have used regression to establish the relationship between credit information and sharing and other concepts in the banking sectors. This study therefore recommends a similar study on the effect of credit information sharing on financial performance of commercial banks using the event study methodology. Additionally, the study recommends a similar study on the other types of financial institutions like microfinance banks, which are required by law to share credit information.

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