

**THE EFFECT OF INTEREST RATE SPREAD ON THE LEVEL OF
NON PERFORMING LOANS OF COMMERCIAL BANKS IN
KENYA**

By;

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DECLARATION

I declare that this research project is my original work and has not been submitted in any other university or college for an award of a degree.

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

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My most profound gratitude goes to my loving mum, friends and relatives for their unconditional love and steadfast support always.

DEDICATION

This work is dedicated to my entire family, especially my dear mum Nancy Kamunge, my grandparents Mr. John Kamunge and Emily Kamunge.

ABSTRACT

The purpose of this study was to investigate the effects of interest rate spread on the level of nonperforming loans by commercial banks in Kenya. The research design used was explanatory because the study intended to establish if there was a causal relationship between interest rate spread and level of nonperforming loans.

The population of the study was all the 43 commercial banks. The study used secondary data sources to gather information relevant in reaching at the research objective. The secondary data were collected from the CBK supervision reports on the macro-economic indicators and Kenya National Bureau of Statistics (KNBS) reports. Data was sorted and input into the statistical package for social sciences (SPSS) for production of tables, and descriptive statistics.

The ANOVA results show that the independent variables were good predictors of level of nonperforming loans. The results indicated that Log interest rate spread and Log debt collection cost were statistically significant in explaining level of nonperforming loans. Results indicate that a unit change in Log interest rate spread variable will lead to a positive change in level of nonperforming loans while a unit change in Log debt collection cost will cause a negative and significant change in level of nonperforming loans and a unit change in log credit appraisal cost will cause a negative and insignificant change in log level of non performing change.

It is recommended that banks should be encouraged to conduct regular training programmes for credit staff. It is recommended that Central Bank which is the Regulatory Authority of commercial banks in Kenya should apply stringent regulations on interest rates charged by commercial banks. Banks should also apply efficient and effective credit risk management. It is recommended that commercial banks should use the services provided by Credit Reference Bureaus for the purpose of determining the credit worthiness of borrowers as a means of minimizing bad loans.

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS.....	iii
DEDICATION.....	iv
ABSTRACT	v
LIST OF FIGURES.....	ix
LIST OF TABLES.....	x
LIST OF ABBREVIATIONS.....	xi
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Research Problem.....	7
1.3 Objective of the Study	9
1.4 Value of the Study	9
CHAPTER TWO.....	10
LITERATURE REVIEW.....	10
2.1 Introduction.....	10
2.2 Theoretical Review.....	10
2.3 Determinants of Non Performing Loans.....	13
2.4 Empirical Review	15

2.5	Conceptual Framework.....	19
2.6	Summary of Literature Review	20
CHAPTER THREE.....		22
RESEARCH METHODOLOGY		22
3.1	Introduction.....	22
3.2	Research Design.....	22
3.3	Population	23
3.4	Data Collection.....	23
3.5	Data Analysis	23
3.5.1	Analytical model.....	24
CHAPTER FOUR		27
DATA ANALYSIS, RESULTS AND DISCUSSION		27
4.1	Introduction.....	27
4.2	Descriptive Statistics	27
4.3	Regression Analysis	33
CHAPTER FIVE		39
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....		39
5.1	Introduction.....	39
5.2	Summary.....	39
5.3	Conclusions.....	40

5.4	Recommendations for Policy	41
5.5	Limitations of the Study	43
5.6	Areas of Further Research	43
REFERENCES		45
Appendix I: List of Commercial Banks as at December, 2012.....		50
Appendix II: Data Collection Template		51
Appendix III Raw Data		52

LIST OF FIGURES

4.2.1	Total Bank Nonperforming Loans	27
4.2.2	Lending Rate	28
4.2.3	Deposit Rate	29
4.2.4	Interest Rate Spread.....	30
4.2.5	Debt Collection Cost	31
4.2.6	Credit Appraisal Cost	32

LIST OF TABLES

Table 4.1:	Regression Model Fitness	34
Table 4.2:	Analysis of Variance	35
Table 4.3:	Regression Coefficients	36

LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CBK	Central Bank of Kenya
IRS	Interest Rate Spread
KNBS	Kenya National Bureau of Statistics
KYC	Know Your Customer
NPA	Non-Performing Asset
NPLS	Non Performing Loans
ROA	Return on Assets
SPSS	Statistical Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Lending is the main activity of banks. This is evidenced by the volume of loans that constitute banks assets and the annual substantial increase in the amount of credit granted to borrowers in the private and public sectors of the economy. Lending is the principal business for most commercial banks. Loan portfolio is therefore typically the largest asset and the largest source of revenue for banks. In view of the significant contribution of loans to the financial health of banks through interest income earnings, these assets are considered the most valuable assets of banks. Unfortunately, some of these loans usually do not perform and eventually result in bad debts which affect banks earnings on such loans. These bad loans become cost to banks in terms of their implications on the quality of their assets portfolio and profitability. This is because in accordance with banking regulations, banks make provisions for non-performing loans and charge for bad loans which reduce their loan portfolio and income. Bad loans are seriously affecting most banks hence necessitating a study into the problem.

Over the years, there have been an increased number of significant bank problems in both, matured as well as emerging economies (Basel, 2004) cited in Richard (2011). Bank problems, mostly failures and financial distress have afflicted numerous banks, many of which have been closed down by regulatory authorities (Brownbridge, 1998). This in turn led to contraction of activities, decline in output, and imposition of

substantial costs on the economy (Chijoriga, 1997; Brownbridge and Harvey, 1998) cited in Richard (2011). Borio and Lowe (2002) observed that the cost of banking crises in terms of output loss has been high; typically double digit percentage of GDP.

In Japan some of the loans made to companies during the bubble era became non-performing when the bubble burst (Nishimura, Kotake & Hashimoto, 2001). In Indonesia, non-performing loans represented about 75% of total loan assets which led to the collapse of over sixty banks in 1997 (Caprio & Klingebiel, 2002; Fofack, 2005), While some countries such as Sweden, Norway, Finland and Australia do not seem to be exposed to non performing loans (less than 1 percent) other countries such as Egypt, Nigeria, Philippines, Morocco, Algeria and Tunisia (more than 15 percent) suffer severely from bad loans (Boudriga et al., 2009).

1.1.1 Interest Rate Spread

Interest spread is defined as the difference between the lending rate and the deposit rate. The magnitude of interest rate spread, however, varies across the world. It is inverse to the degree of efficiency of the financial sector, which is an offshoot of a competitive environment. The nature and efficiency of the financial sectors have been found to be the major reasons behind differences in spread in countries across the world. In economies with weak financial sectors, the intermediation costs which are involved in deposit mobilisation and channeling them into productive uses, are much larger Jayaraman and Sharma (2003). Independent studies Chand (2002) and Asian Development Bank (2001), have listed the several reasons for high interest rate spread. These are lack of adequate competition, scale diseconomies due to small size of markets, high fixed and operating

costs, high transportation costs of funds due to expensive telecommunications, existence of regulatory controls and perceived market risks.

In Kenya, the interest rates spread from 1970 to 1999 increased because of yet-to-be gained efficiency and high intermediation costs. Increase in spread in the post-liberalization period was attributed to the failure to meet the prerequisites for successful financial reforms, the lag in adopting indirect monetary policy tools and reforming the legal system and banks' efforts to maintain threatened profit margins from increasing credit risk as the proportion of non-performing assets level (Ngugi, 2001).

The ex post approach to measuring spreads uses actual interest income and expenses to separate interest margins from other income and expenditure. The composition of the profit and loss account also yields information on the structure of intermediation costs and on asset distribution and quality. Accounting information gives an accurate picture of banking spreads and profits but is available only quarterly as opposed to monthly data on quoted rates.

1.1.2 Non Performing Loans

A non-performing asset (NPLs) is usually defined as the total of nonaccrual loans and restructured (troubled) loans. Hennie (2003) agreed that non performing loans are those loans which are not generating income. This is further supported by Caprio and Klingebiel (1996), cited in Fofack (2005), who define non performing loans as those loans which for a relatively long period of time do not generate income that is, the principal and or interest on these loans have been left unpaid for at least ninety days. Non- performing loans are also commonly described as loans in arrears for at least ninety

days (Guy, 2011). Therefore in this study, non performing loans are loans that are ninety or more days delinquent in payments of interest and/or principal (Bexley & Nenninger, 2012). The term “bad loans” as described by Basu (1998) in Fofack (2005) is used interchangeably with non- performing and impaired loans. Berger and De Young, (1997) also consider these types of loans as “problem loans”. In effect, these would be considered bad or toxic assets on the banks books (Bexley & Nenninger, 2012). These descriptions were used interchangeably during the study.

Nonaccrual loans are loans on which interest accruals have been discontinued due to borrowers’ financial difficulties. Typically, an unsecured loan is placed on non-accrual status once interest payments are 90 days past due, but this is not a requirement. A loan is considered restructured when the bank grants a concession to the debtor that changes the terms of the loan to prevent it from being charged-off so long as the debtor can fulfill the new terms (Boudriga et al ., 2009).

1.1.3 Relationship between Interest Rate Spread and Non Performing Loans

Commercial banks play a critical role to emerging economies where most borrowers have no access to capital markets (Greuning & Bratanovic, 2003). Well functioning commercial banks accelerate economic growth, while poorly functioning commercial banks are an impediment to economic progress and aggravate poverty (Richard, 2011). The traditional role of a bank is lending and loans make up the bulk of their assets (Njanike, 2009). According to the research by Havrilesky and Boorman (1994), interest on loans contributes significantly to interest income of commercial banks. Reed and Gill (1989) pointed out that traditionally 85 percent of commercial banks income is

contributed by interest on loans. Loans therefore represent the majority of banks assets (Saunders and Cornett, 2005).

Lending is not an easy task for banks because it creates a big problem which is called non performing loans (Upal, 2009). Due to the nature of their business, commercial banks expose themselves to the risks of default from borrowers (Waweru & Kalami, 2009). According to Alton and Hazen (2001) non performing loans are those loans which are ninety days or more past due or no longer accruing interest.

According to Berger and De Young (1997), non performing loans could be injurious to the financial performance of banking institutions. According to Kroszner (2002) in Waweru and Kalami (2009), non-performing loans are closely associated with banking crises. Greenidge and Grosvenor (2010), argue that the magnitude of non-performing loans is a key element in the initiation and progression of financial and banking crises. Guy (2011) arguing that non performing loans have been widely used as a measure of asset quality among lending institutions and are often associated with failures and financial crises in both the developed and developing world. Louzis et al (2011) point out that non- performing loan can be used to mark the onset of a banking crisis. Despite ongoing efforts to control bank lending activities, non performing loans are still a major concern for both international and local regulators (Boudriga et al, 2009).

Interest rates spread lead to the increase in nonperforming loans (Ngetich & Wanjau, 2011). It is noted that commercial banks in Kenya should assess their clients and charge interest rates accordingly as ineffective interest rate policy can increase the level of interest rates and consequently NPAs.

1.1.4 Commercial Banks in Kenya

As at 31st December 2012, the banking sector consisted of the Central Bank of Kenya, as the regulatory authority, 44 banking institutions (43 commercial banks and 1 mortgage finance company -MFC), 5 representative offices of foreign banks, 8 Deposit-Taking Microfinance Institutions (DTMs), 2 Credit Reference Bureaus (CRBs) and 112 Forex Bureaus (FXBs). Out of the 44 banking institutions, 31 locally owned banks comprise 3 with public shareholding and 28 privately owned while 13 are foreign owned. The 8 DTMs, 2 CRBs and 112 forex bureaus are privately owned. The foreign owned financial institutions comprise of 9 locally incorporated foreign banks and 4 branches of foreign incorporated banks. In Sub-Saharan Africa, of which Kenya is a case, the probability of a banking crisis occurring may be even more important because non-performing asset-related risks are compounded by the structure of the banking system which is dominated by a few large banks (Fofack, 2005).

Central Bank of Kenya expects the banking sector to sustain its growth momentum largely driven by adoption of cost effective delivery channels and increased presence of Kenyan banks in the East African Community partner states and South Sudan. The risks of inflation and the resulting high interest rates are expected to reduce in the course of the year (CBK, 2012).

However, despite the implications of nonperforming assets for banking crisis, for investment and economic growth, and for anticipating future banking and financial crises, very few studies have been done on the effect of interest rate spread on the level of non-performing assets in Sub-Saharan Africa (Caprio & Klingebiel, 2002). (Daumont et al

2004) found the accumulation of nonperforming assets to be attributable to economic downturns and macroeconomic volatility, terms of trade deterioration, high interest rates, excessive reliance on overly high-priced interbank borrowings, insider lending and moral hazard. Ngugi(2001) analyzing interest rate in Kenya found a widening interest rate spread following interest rate liberalization characterized by high implicit costs with tight monetary policy achieved through increased reserve and cash ratios and declining non-performing assets. According to Kithinji and Waweru (2007), that banking problems is back-dated as early as 1986 culminating in major bank failures (37 failed banks as at 1998) following the crises of 1986 to 1989, 1993/1994 and 1998; they attributed these crises to NPAs which is due to the interest rate spread.

1.2 Research Problem

Interest rate spread influence the level of nonperforming loans in many ways. For instance, high interest rate charged to borrowers makes it difficult for the borrowers to repay loans. In addition the low interest rate charged to deposit and payable to depositors implies that depositors may not keep enough deposit which can be used as collateral for loans. This further implies that loans that are given are either unsecured or are secured on asset that are hard to recover. Therefore interest rate spread increases the likelihood of non performing loans. non performing loans are one of the major causes of banking crises.

The interest rate spread in Kenya is still high. Currently the average leading rate is about 18% .The average deposit interest rate is about 4% hence the average interest rate spread is about 12%.The central bank of Kenya governor has on several occasion criticised the high interest rate spread, arguing that it is not justified. On the other hand the absolute

value of nonperforming bank has been on the rise. The high interest regime witnessed in the first half of 2012 impacted negatively on the quality of loans and advances. As a result, nonperforming loans (NPLs) increased by 16.8 percent from Ksh. 53.0 billion in December 2011 to Ksh. 61.9 billion in December 2012 (Bank Supervision Annual Report, 2012).

Studies by Ngetich and Wanjau, (2011) show that interest rates spreads lead to the increase in nonperforming loans. The problem of the study is that the interest rates spread in Kenya are still high. This may have an adverse effect on non performing loans and this in turn may lead to a banking crises. In Kenya, Ngugi (2001) noted that interest rate spreads in Kenya are high. Kenyan commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. Interest rate spread discourages the potential saver due to low returns on deposits and thus limit financing for potential borrowers (Ndung'u & Ngugi, 2000).

Local studies have focused on determinants of interest rate spreads but fail to focus on the effect of interest rate spread on the level of nonperforming loans. Ngugi (2001) conducted an empirical analysis of interest rate spread in Kenya but failed to study the effect of interest rate spread on level of nonperforming loans. Njuguna and Ngugi (2000) reviewed banking sector interest rate spread in Kenya but failed to link the interest rate spread to level of nonperforming loans. This implies that a research gap exists. This study therefore seeks to fill this gap by establishing the links between interest rate spread and the level of NPAs. The research question therefore is; what is the effect of interest rate spread on the level of nonperforming loans by commercial banks in Kenya?

1.3 Objective of the Study

To investigate the effect of interest rate spread on the level of nonperforming loans of commercial banks in Kenya

1.4 Value of the Study

This study is of importance to various stakeholders among them being the management of commercial banks, policy makers in both private and public sector and also scholars. Management of commercial banks will appreciate the affect of interest rate spread on the level of nonperforming loans among the banks. For example through the findings of this study, they would understand the link and craft policies which may lead to the reduction of interest rate spread.

The study is useful to policy makers in their effort to revamp their commercial banks in Kenya through understanding the effect of interest rate spread on the level of nonperforming loans and also regarding capital base, financial strength and other regulatory requirements of the banking companies.

This study is scholarly in nature and hence is of value to researchers and scholars both in academia and industry. The study identified gaps that can be advanced in the interest of further scholarly discourse in the area of interest spread rate. Specifically the findings of the study identified academic gaps that triggered further studies on interest spread rate.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on the area of study. Literature reviewed examines the theoretical contexts, general literature and empirical literature for the interest rate spread on the level of nonperforming loans by commercial banks.

2.2 Theoretical Review

This section contains review of theories relevant to the study.

2.2.1 Liquidity Preference Theory

According to Keynes, the speculative demand for money is sensitive to changes in the interest rate (Carpenter & Lange, 2002). In other words, it is interest-elastic and extremely so at very low rates of interest. The speculative demand for money is contrasted with the transactions demand the latter being a stable function of income (Carpenter and Lange, 2002). In the Keynesian model, the accumulation of large speculative balances implies that people expect the rate of interest to (rise, fall). They (want, do not want) to hold bonds because the interest rate and bond prices are (directly, inversely) related to one another. If the supply of money remains constant, the high speculative demand implies a (high, low) level of transactions balances, which corresponds to a (high, low) level of income. If, with a given money supply and an equilibrium rate of interest, people are suddenly overcome by the fetish of liquidity, the

demand for speculative balances would shift (rightward, leftward), putting (upward, downward) pressure on the rate of interest (Carpenter & Lange, 2002).

If people are suddenly overcome by the fetish of liquidity, the Federal Reserve should (increase, decrease) the money supply. Once full-employment income has been achieved, the Fed's policy rule of "Print money to (hold, spend), but not money to (hold, spend)" may not be a viable policy rule because the speculative demand for money is too (stable, unstable). Besides, the Fed may not have an unambiguous indicator of the needed policy: its timely information includes (the interest rate, income) but not (the interest rate, income) (Carpenter & Lange, 2002).

The relevance of this theory to the study is that due to liquidity preference bank should always minimize nonperforming loans because by doing so would reduce the risk of the bank. This can be done through reduction of interest rate spread.

2.2.2 Financial Intermediation Theory

Current financial intermediation theory builds on the notion that intermediaries serve to reduce transaction costs and informational asymmetries (Diamond, 1984). As developments in information technology, deregulation, deepening of financial markets, etc. tend to reduce transaction costs and informational asymmetries, financial intermediation theory shall come to the conclusion that intermediation becomes useless. This contrasts with the practitioner's view of financial intermediation as a value-creating economic process. It also conflicts with the continuing and increasing economic importance of financial intermediaries. From this paradox, we conclude that current

financial intermediation theory fails to provide a satisfactory understanding of the existence of financial intermediaries.

Different participants in financial markets firms, financial intermediaries, rating agencies, and investors typically have varying amounts of information about, or differing abilities to determine, the value of securities offered in the market. Two types of asymmetric information problems commonly arising for non-financial firms include the following: a firm issuing a security has more information about the potential cash flows associated with the security than do investors; some investors have more information about a security's value (or better ability to value the security) than other investors; i.e., some investors are "informed" whereas others are "uninformed." (Hirschleifer & Riley, 1979).

The relevance of this to the study is that the principle purpose of a bank is to lead money for a given rate of interest therefore a bank is justified interest on its role of financial intermediation. Different financial institution charge different rates and therefore this leads to different rate spread.

2.2.3 Adverse Selection Theory

In the adverse selection model theory developed by Pagano and Jappelli (1993), information sharing improves the pool of borrowers, decreases defaults and reduces interest rates. It can also lead to an expansion of lending. When banks are local monopolists, however, in some cases lending diminishes, because the exchange of information increases the banks' possibility of price discrimination between safe and risky borrowers and the increase in lending to safe borrowers does not fully compensate for the reduction in lending to the risky types. When credit markets are contestable,

lending activity is more likely to increase: competition limits the banks' ability to extract rents from their customers, and information sharing increases banking competition (Jappelli & Pagano, 2002).

This model further implies that that information sharing should reduce default rates and interest rates and increase lending, either because credit bureaus foster competition by reducing informational rents or because they discipline borrowers. In extreme cases, information exchange may make lending feasible in markets where no credit would be extended otherwise. In these models, whenever banks choose to communicate they bring about a Pareto improvement by raising customers' welfare along with their own profits (Pagano, 2001).

The relevance of this theory to the study is that one of the reasons to high interest rate spread is the information asymmetry that exists between the borrower and the lender. Advance selection is a situation where the bank advances credit to economic agents who are not necessarily credit worthy.

2.3 Determinants of Non Performing Loans

Inefficient Legal System. Weak legal framework creates a disincentive for banks to invest in information capital. A weak legal system constrains the enforcement of financial contracts, exposing banks to legal and credit risk. This arises because of the inability to make agreements that restrict the ability of borrowers to divert funds away from the intended purpose, the lack of disclosure of accurate information on borrowers and the inability to write easily enforceable legal contracts.

Cost of assets. Interest rate spread is a measure of profitability between the cost of short term borrowing and the return on long term lending. These costs are normally transferred to borrowers who might, with time, be in a position of not repaying the loan. World Bank policy research working paper on Non-performing International Journal of Business and Public Management

Assets in Sub-Saharan Africa revealed that bad assets are caused by adverse economic shocks coupled with high cost of capital and low interest margins (Fofack, 2005). Goldstein and Turner (1996) stated that “the accumulation of non-performing assets is generally attributable to a number of factors, including economic downturns and macroeconomic volatility, terms of trade deterioration, high interest rate, cost of assets, insider lending and moral hazard”.

Regulation in the financial sector is aimed at reducing imprudent actions of banks with regards to charging high interest rates, insider lending and reducing asset defaults. The central banks have achieved this through interest rate ceilings and other monetary policies. Demirguc-Kunt and Huizinga (1997) found that better contract enforcement, efficiency of the legal system and lack of corruption are associated with lower realized interest margins and asset non-performance. This is because they reduce the default risk attached to the bank lending rate. However, it is noted that in developing countries regulations tend to be on paper but in practice are not enforced consistently and effectively. Thus, leading to default on loans lent to clients.

Credit risk is the risk of loss due to a debtor's non-payment of a asset or other line of credit (either the principal or interest (coupon) or both). The default events include a

delay in repayments, restructuring of borrower repayments, and bankruptcy. Interest rates affect credit risk since the borrowers might not be keen to pay cost of funding/credit or might find such assets expensive in the future. Low interest rates encourage *ex-ante* risk-taking (Kashyap and Stein, 2000). Banco Central do Brasil (1999) identified credit risk, taxes, and overhead costs as the main determinants of the high *ex-ante* spread in Brazil (more important even than the high level of required reserves, which are nevertheless significant).

2.4 Empirical Review

Kalirai & Scheicher (2002) did a study about macroeconomic determinants of banks' loan losses or non-performing loans he estimated a time series model of aggregate loan loss provisions in the Austrian banking system as a function of an extensive array he found that lending rate, production of industry, stock market return and business confidence index are the factors which determine the level of loan quality in Australia while conducting a research taking data from 1990-2001. Bofondi and Ropele (2011) did a study on macroeconomic determinants of bad loans an evidence from Italian banks he analysed the quality of loans to households and firms separately on the grounds that macroeconomic variables may affect these two classes of borrowers differently. He found that non-performing loans are positively associated with the unemployment rates, lending rates and negatively associated with the growth domestic product rate; they conducted their study in Italy by taking the quarterly data over the period of 1990-2010.

Caprio and Klingebiel, (2002) conducted a study and found that the quantity or percentage of non-performing assets (NPAs) is often associated with bank failures and

financial crises in both developing and developed countries. He estimated the model for crisis and found that there is abundant evidence that the financial/banking crises in East Asia and Sub-Saharan African countries were preceded by high nonperforming assets. For instance, in Indonesia where over 60 banks collapsed during the financial crisis, nonperforming assets represented about 75% of total asset portfolios. The banking crisis which affected a large number of Sub-Saharan African countries in the 1990s was also accompanied by a rapid accumulation of nonperforming assets.

Louzis, Vouldis and Metaxas (2011) used dynamic panel data to highlight the factors causing non-performing loans in the Greek banking sector from 2003 to 2009 considering each loan category (corporate loans, consumer loans and mortgage loans) according to them economic growth (GDP), unemployment, lending rates, public debt and management quality are the determinants of non-performing loans in the banking sector of Greece. Rinaldi & Sanchis-Arellano (2006) investigated household non-performing loans for a panel of European countries and found that disposable income, unemployment and monetary conditions are determinants of non-performing loans. Berge and Boye (2007) found that non-performing loans are highly correlated with the lending rates and unemployment for the Nordic banking system covering the time span from 1993 to 2005.

Siddiqui (2011) did a study towards determination of interest spread of commercial banks: Empirical evidences from Pakistan. The study employed panel data models to examine bank-specific determinants of interest rate spread of a sample of 14 out of 22 commercial banks in Pakistan for the period of 2000 to 2008. Rising administrative costs, nonperforming loans and soaring return on assets (ROA) significantly cause an increase in the spread of interest rate. The study, though finds increasing competition in the

banking industry, this competition is imperfect in Pakistan. The study finds significant difference in their management style effects tests support fixed effects model. High interest spread may lead to institutional inefficiency of the financial system of the country.

Vogiazas and Nikolaidou (2011) investigated determinants of non-performing loans in the Romanian banking sector during the Greek crisis by taking the data from December 2001 to November 2010 according to them construction and investment expenditure, unemployment and inflation rate and Romania's external debt to GDP and M2 (Narrow money and Intermediate money) influence the credit risk of country's banking system.

Perez (2011) did a study of determinants of interest rate spreads in Belize using accounting data and then seeks to identify the factors that affect interest rate spreads using a panel dynamic least squares model. The study concludes that market share and adversely classified loans are two main determinants of the spread. Based on these findings, the study suggests policy recommendations to reduce information asymmetries and increase competition in the Belizean financial sector.

Negera (2012) did a study to assess determinants of nonperforming loans. Survey was conducted with professionals engaged in both private and state owned Banks in Ethiopia holding different positions using a self administered questionnaire. The findings of the study shows that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers

and their knowledge limitation, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default.

Ng'etich and Wanjau (2011) did a study which sought to establish the effects of interest rate spread on the level of Non Performing Assets in commercial banks in Kenya. The study concludes that interest rate spread affect performing assets in banks as it increases the cost of loans charged on the borrowers, regulations on interest rates have far reaching effects on assets non-performance, for such regulations determine the interest rate spread in banks and also help mitigate moral hazards incidental to NPAs. Credit risk management technique remotely affects the value of a bank's interest rates spread as interest rates are bench marked against the associated non-performing assets and non-performing assets is attributable to high cost of loans. The study recommends that commercial banks in Kenya should assess their clients and charge interest rates accordingly as ineffective interest rate policy can increase the level of interest rates and consequently NPAs.

Were and Wambua (2012) conducted a study on assessing the determinants of interest rate spread of commercial banks in Kenya they found that high interest rate spreads is still an issue of concern in a number of African countries, including Kenya. The empirical results show that bank-specific factors play a significant role in the determination of interest rate spreads. These include bank size based on bank assets, credit risk as measured by non-performing loans to total loans ratio, liquidity risk, return on average assets and operating costs. The impact of macroeconomic factors such as real economic growth and inflation is not significant. Similarly, the impact of policy rate as an indicator of monetary policy is found to be positive but weak. On average, big banks have higher

spreads compared to small banks. There is need for explore policy options meant to enhance competition in the industry and measures to break market dominance will be one such option. Further, the banking sector needs to explore internal as well as industry-driven strategies that counter some of the bank-specific factors associated with higher spreads. These could range from diversification of products to investment in cost-saving and efficient forms of technology.

2.5 Conceptual Framework

According to Kombo and Tromp (2009), a concept is an abstract or general idea inferred or derived from specific instances. A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. Mugenda and Mugenda (2003) and Smyth (2002), define a conceptual framework as hypothesized model identifying the model under study and the relationship between the dependent and independent variables. Kothari (2004) defines an independent variable also known as the explanatory variable as the presumed cause of the changes of the dependent variable, while a dependent variable refers to the variable which the researcher wishes to explain. The goal of a conceptual framework is to categorize and describe concepts relevant to the study and map relationships among them. Such a framework would help researchers define the concept, map the research terrain or conceptual scope, systematize relations among concepts, and identify gaps in literature (Creswell, 2003).

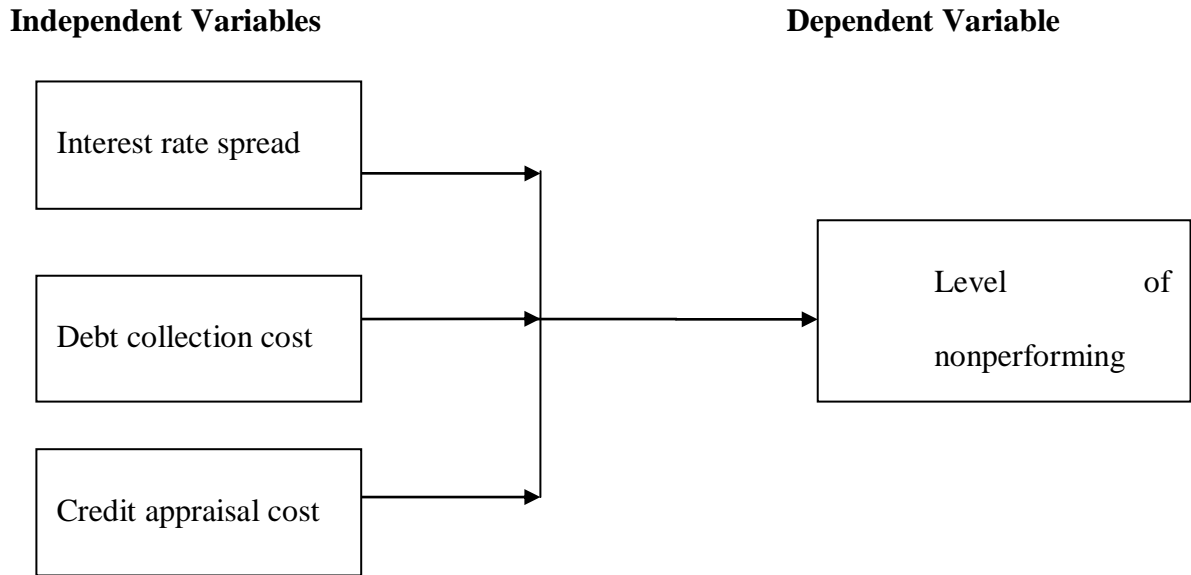


Figure 2.1: Conceptual Framework

Source Author (2013)

2.6 Summary of Literature Review

Studies conducted about interest rate spread and non performing loan has ended up with mixed results. Ngugi (2001) analyzed the interest rates spread in Kenya from 1970 to 1999, his study mimic a profit model where bank profitability was defined by the nature of the credit market (which is the source of bank income), implicit tax that squeezes the ability of the bank to earn income, the level of credit risk and the responsiveness of demand for loans. His model predicted a positive relationship between the spread and the real loans, which reflected the positive relationship between the real loans and the lending

rate and found that interest rate spread increased because of yet-to-be gained efficiency and high intermediation costs.

According to Waweru and Kalani (2009), who did a study on Commercial Banking Crises in Kenya: Causes and Remedies, his model was the total scores of success of each of the actions taken by the managers and the observed number of managers who said “Yes” to each action . They found that non-performing loans are closely associated with banking crises. Greenidge and Grosvenor (2010), who did a study in Washington, argued that the magnitude of non-performing loans is a key element in the initiation and progression of financial and banking crises. Guy (2011) argued that non performing loans have been widely used as a measure of asset quality among lending institutions and are often associated with failures and financial crises in both the developed and developing world.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains review of literature of research design, population, sample and data analysis. Research methodology is the architecture or the layout of the research framework. According to Polit and Hungler (2003) methodology refers to ways of obtaining, organizing and analyzing data.

3.2 Research Design

Research design is an outline of research study which indicated what the researcher did from writing the hypothesis and its operational implications to the final analysis of data.

This study employed an explanatory research design. Studies that establish causal relationships between variables may be termed as explanatory studies. The emphasis here is on studying a situation or a problem in order to explain the relationship between variables (Saunders, Lewis and Thornhill, 2003). Explanatory studies are designed to test whether one event causes another (Hair, Babin, Money and Samouel, 2003). In general, an explanatory design is appropriate because the study intends to establish if there is a causal relationship between interest rate spread and level of nonperforming loans.

3.3 Population

The population of the study was all the 43 commercial banks registered in Kenya as at 31st December 2012 (Appendix 1). Since the population was small a census study was carried out.

3.4 Data Collection

The study used secondary data sources to gather information relevant in reaching at the research objectives. The secondary data was collected from the CBK supervision reports included published commercial banks financial statements, macro-economic indicators and Kenya National Bureau of Statistics (KNBS) reports. The study's data collection source was justified by the fact that data on NPL in all commercial banks were available in CBK's bank supervision report while the same works hand in hand with KNBS in making such statistics and estimation. The data was collected from the year 2008 to 2012.

3.5 Data Analysis

Data Analysis is the processing of data to make meaningful information (Sounders, Lewis and Thornhill, 2009). Burns and Grove (2003) define data analysis as a mechanism for reducing and organizing data to produce findings that require interpretation by the researcher. This involved editing, data entry, and monitoring the whole data processing procedure. Data was sorted and input into the statistical package for social sciences (SPSS) Version 17.0 for production of tables, descriptive statistics and inferential statistics.

3.5.1 Analytical model

To determine the patterns revealed in the data collected regarding the selected variables, data analysis was guided by the aims and objectives of the research and the measurement of the data collected. A multiple linear regression model was used to test the significance of the influence of the independent variables on the dependent variable. The multiple linear regression model used is as laid below. The basis of this model is empirical literature and reviewed theory.

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where;

- i) Y = level of nonperforming loans
- ii) a - is the constant term
- iii) $\{ \beta_i; i=1,2,3, \}$ = The coefficients representing the various independent variables also called predictor variables
- iv) X_1 – interest rate spread
- v) X_2 – Debt collection cost
- vi) X_3 – credit appraisal cost
- vii) e is the error term which is assumed to be normally distributed with mean zero and constant variance.

The variables were converted to the log form because of the scaling problems. For instance some values were huge (level of nonperforming loan, credit appraisal and debt

collection cost) and these brought about comparison problems with variables which has small values (interest rate spread).

The level of nonperforming loan was measured using the absolute value of declared non performing loans. The absolute value of nonperforming loan was sourced from the central bank of Kenya bank supervision report.

The interest rate spread was measured as the difference between the average bank lending interest rate and the average bank deposit rate. This data was sourced from central bank website.

The debt collection cost was measured using the total investment in Kenya shilling on hiring debt collectors, hiring lawyers for debt collection and any other cost. This data was obtained from the different commercial banks.

The credit appraisal cost was measured using the total investment in Kenya shilling on hiring credit appraisal clerks, cost of complying with KYC requirement. This data was obtained from the different commercial banks.

Using SPSS, the regression model was tested on how well it fits the data. The coefficient of determination Rsquared (R^2) was the measure of model goodness of fit. It tested the amount of variance of Y that is explained by the independent variables.

Analysis of variance (ANOVA).was used to test the overall significance of the model. Fischer distribution test called F-test was applied. It refers to the ratio between the model mean square divided by the error mean square. F-test was used to test the significance of the overall model at a 95 percent confidence level. The p-value for the F-statistic was

applied in determining the robustness of the model. The conclusion was based on the basis of p value where if the null hypothesis of the beta is rejected then the overall model was significant and if null hypothesis was accepted the overall model could be insignificant. In other words if the p-value is less than 0.05 then it would be concluded that the model is significant and has good predictors of the dependent variable and that the results are not based on chance. If the p-value is greater than 0.05 then the model would not be significant and could be used to explain the variations in the dependent variable.

The individual variables were evaluated for significance. The p value of 0.05 was used to test for the significance.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study. The descriptive statistics were presented first followed by the model results. The interpretation and discussion of the results were presented in a separate section. The chapter summary was also given.

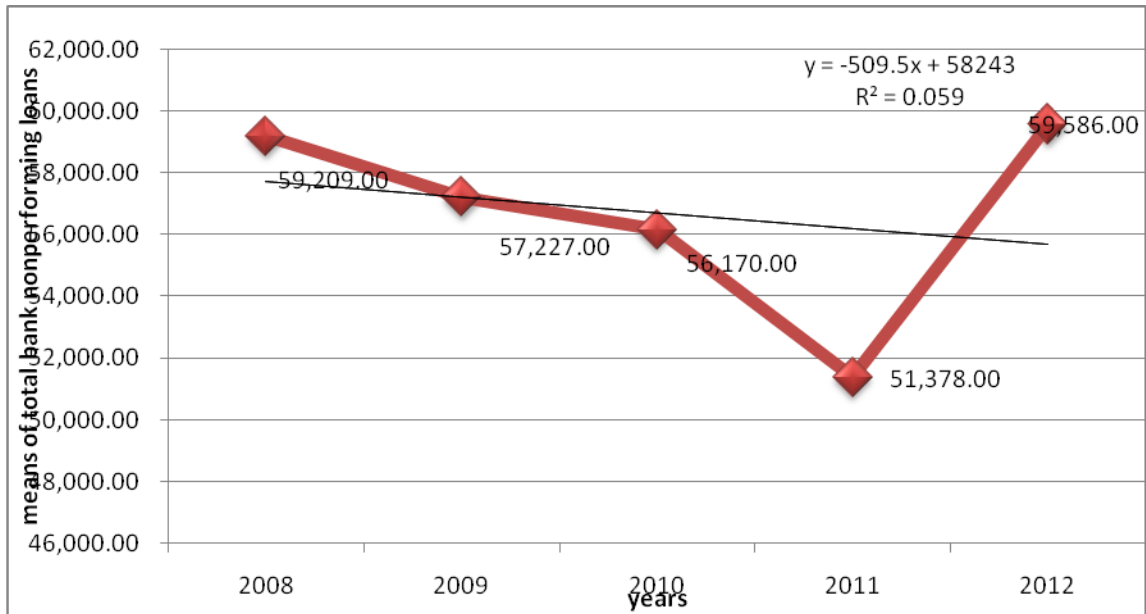
4.2 Descriptive Statistics

This section entails trend analysis and regression result.

4.2.1 Total Bank Nonperforming Loans

Figure 4.2 shows the trend analysis for mean of total bank nonperforming loan for 43 banks in 5 years. Results indicate that means of total bank nonperforming loan for the year 2008 was Kshs 59,209 millions the trend declined in the year 2009 to Kshs 57,277 millions and it declined again in year 2010 to the mean of Kshs 56,170 millions. In the year 2011 mean of total bank nonperforming loan was Kshs 51,378 millions. In the year 2012 the mean went up to Kshs 59586 millions. Overall, there was a declining trend of total bank nonperforming loan from year 2008 to 2012. The decline in total bank nonperforming loans could have been as a result of aggressive credit risk management mechanism and practices.

Figure 4. 1: Total Bank Nonperforming Loan

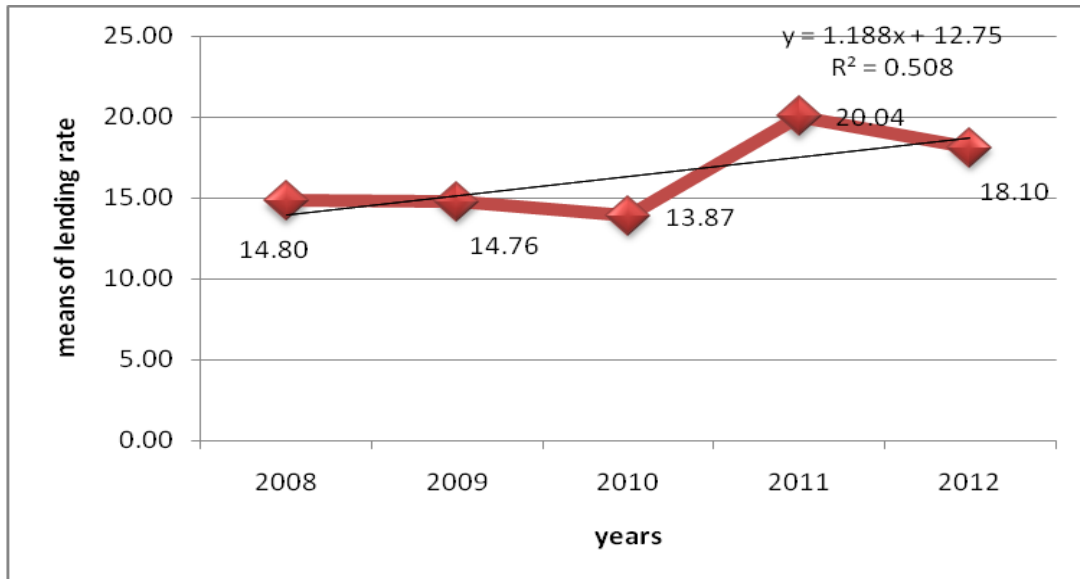


Source: Research Findings

4.2.2 Lending Rate

Figure 4.3 indicates that the mean of lending rate for the year 2008 was 14.8%. The trend declined in the year 2009 to 14.76% and also in the year 2010 to 13.87%. The mean of lending rate in the year 2011 rose to 20.04%. It shows that the trend declined in the year 2012 to the mean of 18.1%. Overall, there was an increasing trend in lending rate from the year 2008 to 2012. The increase in lending rate was as a result of central banks of Kenya contractionally monetary policy. The monetary policy pursued by central bank involved increasing the base lending rate so as to tame the declining exchange rate of USD to Kenya shillings.

Figure 4. 2: Lending Rate

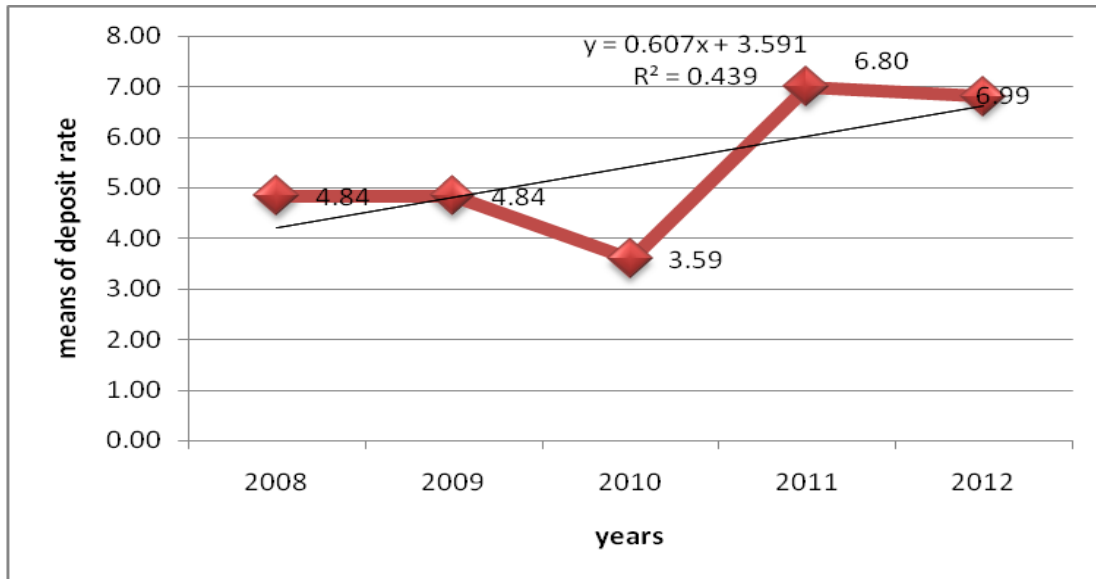


Source: Research Findings

4.2.3 Deposit Rate

Figure 4.4 indicates that the mean of deposit rate for the year 2008 was 4.84%. The trend remain the same in the year 2009 and declined in the year 2010 to 3.59%. The mean of deposit rate in the year 2011 rose to 6.80%. It shows that the trend rose in the year 2012 to the mean of 6.99%. Overall, there was an increasing trend in deposit rate. This implies that the banks may have increased the deposit rate to match the increase in lending rate.

Figure 4. 3: Deposit Rate

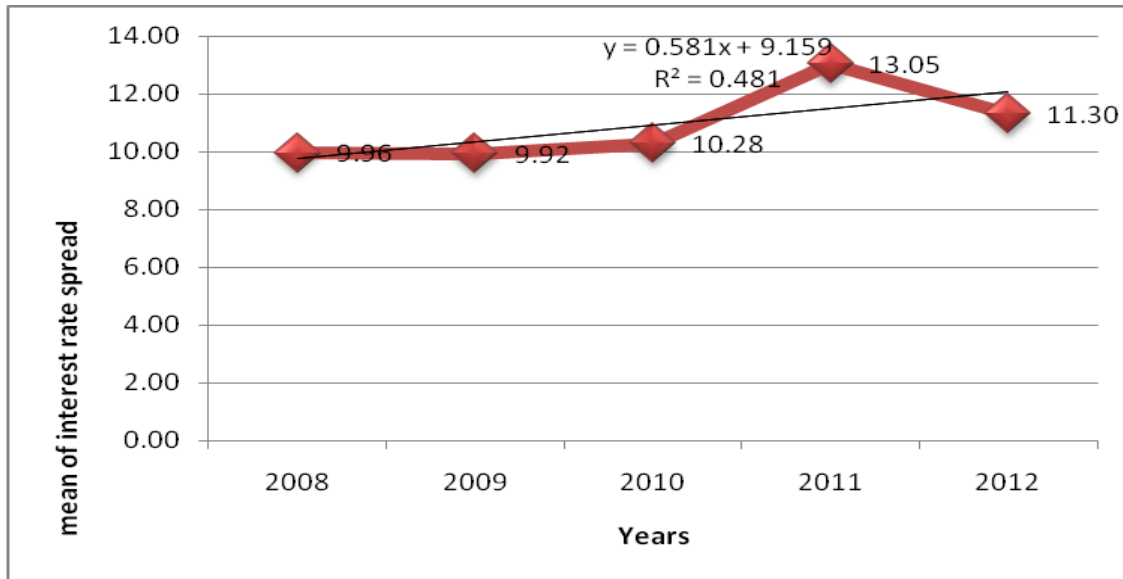


Source: Research Findings

4.2.4 Interest Rate Spread

Figure 4.5 indicates that the mean of Interest rate spread for the year 2008 was 9.96%. The trend declined in the year 2009 to 9.92% and rose in the year 2010 to 10.28%. The mean of Interest rate spread in the year 2011 rose to 13.05%. It shows that the trend declined in the year 2012 to the mean of 11.3%. Overall, there was an increasing trend in Interest rate spread. This may imply that the lending rate rose at a higher rate than the deposit rate.

Figure 4. 4:Interest Rate Spread

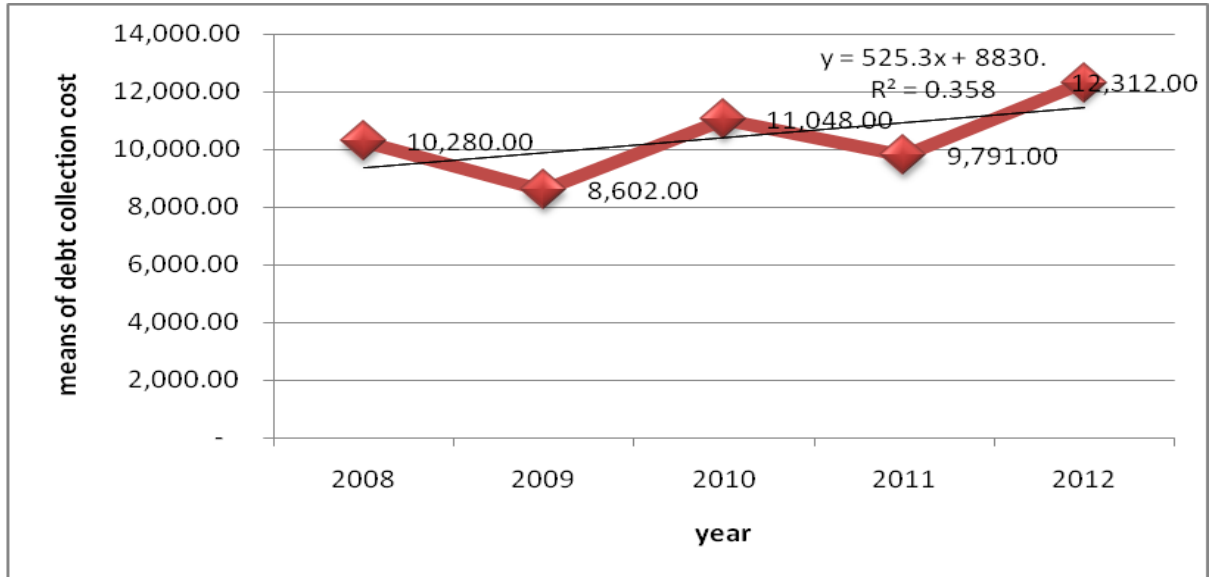


Source: Research Findings

4.2.5 Debt Collection Cost

Figure 4.6 indicates that the mean of debt collection cost for the year 2008 was Kshs 10,280.00 millions. The trend declined in the year 2009 to Kshs 8,602.00 million and rose in the year 2010 to Kshs 11,048.00 millions. The mean of debt collection cost in the year 2011 declined to Kshs 9,791.00 millions. It shows that the trend went up in the year 2012 to the mean of Kshs 12,312.00 millions. Overall, there was increasing trend in debt collection cost from the year 2008 to 2012. This implies that banks are increasingly investing in debt collection mechanism such as hiring qualified debt collectors and increased litigation of defaulters.

Figure 4. 5: Debt Collection Cost

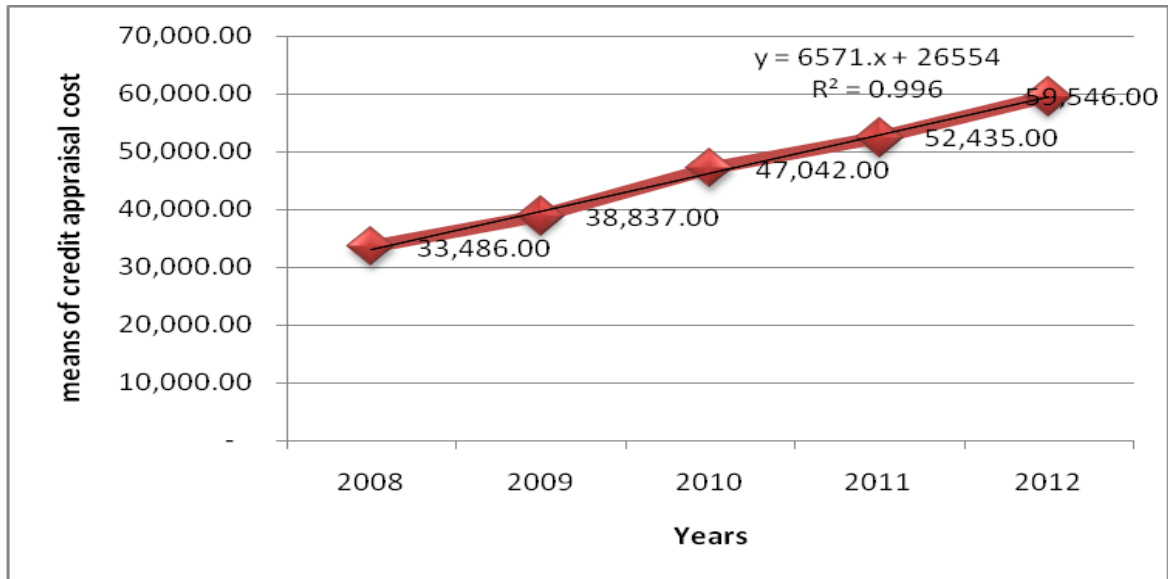


Source: Research Findings

4.2.6 Credit Appraisal Cost

Figure 4.7 indicates that the mean of credit appraisal cost for the year 2008 was Kshs 33486.00 million. The trend rose in the year 2009 to Kshs 38837.00 million and rose again in the year 2010 to Kshs 47042.00 million. The mean of debt collection cost in the year 2011 rose to Kshs 52435.00 million. It shows that the trend went up in the year 2012 to the mean of Kshs 59546.00 million. Overall, there was an increasing trend in credit appraisal cost. This implies that most banks had invested in credit management mechanism. This included KYC requirements.

Figure 4. 6: Credit Appraisal Cost



Source: Research Findings

4.3 Regression Analysis

The multiple linear regression model used is as laid below.

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where;

- i) Y = level of nonperforming loans
- ii) a - is the constant term
- iii) $\{ \beta_i; i=1,2,3, \}$ = The coefficients representing the various independent variables also called predictor variables
- iv) X_1 – interest rate spread

- v) X_2 – Debt collection cost
- vi) X_3 –credit appraisal cost
- vii) e is the error term which is assumed to be normally distributed with mean zero and constant variance.

Table 4.1 shows fitness of the regression model in explaining the study phenomena. Log interest rate spread, log debt collection cost and log credit appraisal cost explain level of nonperforming loans. This is supported by coefficient of determination also known as the R square of 77%. This means that log interest rate spread, log debt collection cost and log credit appraisal cost variables explain 77% of the variations in the dependent variable which is level of nonperforming loans.

Table 4.1: Regression Model Fitness

Indicators	Coefficient
R	0.88
R Square	0.77
Adjusted R Square	0.767
Std. Error of the Estimate	0.02581

Source: Research Findings

ANOVA statistics presented on Table 4.2 indicate that the overall model was statistically significant. This was supported by an F statistic of 235.688 and probability (p) value of 0.000. The reported p value was less than the conventional probability of 0.05 significance level. The ANOVA results imply that the independent variables are good joint predictors of level of nonperforming loans.

Table 4.2: Analysis of Variance

Indicators	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.471	3	0.157	235.688	.000
Residual	0.141	211	0.001		
Total	0.612	214			

Source: Research Findings

Regression of coefficients results in Table 4.3 show that there is a positive relationship between log level of nonperforming loans and Log interest rate spread whose beta coefficients is 0.415. From the results Log debt collection cost and Log credit appraisal cost displayed a negative relationship of -0.221 and -0.001. The results from the table below also indicate that Log interest rate spread and Log debt collection cost were statistically significant in explaining log level of nonperforming loans as they had a probability of 0.000 which is lower than the probability conventional of 0.05. Results indicate that a unit change in Log interest rate spread variable will lead to a positive change in level of nonperforming loans while a unit change in Log debt collection cost will cause a negative and significant change in level of nonperforming loans and a unit change in log credit appraisal cost will cause a negative and insignificant change in log level of non performing change.

Table 4.3: Regression Coefficients

Indicators	Beta	Std. Error	T	Sig
Constant	9.901	0.137	72.254	0.000
Log interest rate spread	0.415	0.027	15.66	0.000
Log debt collection cost	-0.221	0.02	-11.029	0.000
Log credit appraisal cost	-0.001	0.016	-0.079	0.937

Source: Research Findings

$$Y=9.901+0.415X_1-0.221X_2-0.001X_3$$

Where Y=log level of nonperforming loans

X₁=log interest rate spread

X₂=log debt collection cost

X₃=log credit appraisal cost

4.5 Interpretation of Findings

Results of the overall descriptive statistics indicated that trend of total asset per bank for the 43 banks was consistence. The decline in total bank nonperforming loans could have been as a result of aggressive credit risk management mechanism and practices Overall, there was an increasing trend in lending rate from the year 2008 to 2012 which was as a result of central banks of Kenya contractionally monetary policy that involved increasing the base lending rate so as to tame the declining exchange rate of USD to Kenya shillings.

According to the findings there was an increasing trend in deposit rate which implies that the banks may have increased the deposit rate to match the increase in lending rate. There was an increasing trend in Interest rate spread. This may imply that the lending rate rose at a higher rate than the deposit rate. There was increasing trend in debt collection cost from the year 2008 to 2012 which implies that banks are increasingly investing in debt collection mechanism such as hiring qualified debt collectors and increased litigation of defaulters. There was an increasing trend in credit appraisal cost which implies that most banks had invested in credit management mechanism.

Result indicates that R was 0.88 which imply that the overall goodness of fit was good. An r squared is 0.77(77%) This means that the independent variables (Interest rate spread, Debt collection cost and credit appraisal cost) of the study can explain the variations in the dependent variable (nonperforming loans) while the rest is explained by other factors or variables not captured in this current study.

Results indicate that a unit change in Log interest rate spread variable will lead to a positive change in level of nonperforming loans while a unit change in Log debt collection cost will cause a negative and significant change in level of nonperforming loans and a unit change in log credit appraisal cost will cause a negative and insignificant change in log level of non performing change.

Findings indicate that the overall model of analysis of variance was significant. This was supported by an F statistic of 235.688 and probability (p) value of 0.000. The reported probability was less than the conventional probability of 0.05 (5%) significance level.

Results concur with those of Kalirai & Scheicher (2002) who did a study about macroeconomic determinants of banks' loan losses or non-performing loans he estimated a time series model of aggregate loan loss provisions in the Austrian banking system as a function of an extensive array he found that lending rate, production of industry, stock market return and business confidence index are the factors which determine the level of loan quality in Australia while conducting a research taking data from 1990-2001

Findings agree with those of Louzis, Vouldis and Metaxas (2011) who used dynamic panel data to highlight the factors causing non-performing loans in the Greek banking sector from 2003 to 2009 considering each loan category (corporate loans, consumer loans and mortgage loans) according to them economic growth (GDP), unemployment, lending rates, public debt and management quality are the determinants of non-performing loans in the banking sector of Greece

Results concur with those of Ng'etich and Wanjau (2011) which sought to establish the effects of interest rate spread on the level of Non Performing Assets in commercial banks in Kenya. The study concludes that interest rate spread affect performing assets in banks as it increases the cost of loans charged on the borrowers, regulations on interest rates have far reaching effects on assets non-performance, for such regulations determine the interest rate spread in banks and also help mitigate moral hazards incidental to NPAs. The study recommends that commercial banks in Kenya should assess their clients and charge interest rates accordingly as ineffective interest rate policy can increase the level of interest rates and consequently NPAs.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains summary of findings, conclusions and recommendations and further areas of research which is derived from data analysis.

5.2 Summary

The objective of the study was to investigate the effect of interest rate spread on the level of nonperforming loans of commercial banks in Kenya.

A population of 43 commercial banks was used. An explanatory research design was employed and secondary data was used for analysis. Multivariate regression analysis was conducted through SPSS Version 17.0

Regression analysis was conducted to determine the relationship between log nonperforming loans, log interest rate spread, log debt collection cost and log credit appraisal cost. The findings indicated that the r^2 was 0.77. This implies that the overall goodness of fit was good.

An Analysis of Variance (ANOVA) results indicated that the overall model was significant. This was supported by an F statistic of 235.688 and p value of 0.000.

Regression result indicates that there is a positive relationship between level of nonperforming loans and Log interest rate spread whose beta coefficient is 0.415. From

the results Log debt collection cost and Log credit appraisal cost displayed a negative relationship of -0.221 and -0.001. Results also indicate that Log interest rate spread and Log debt collection cost were statistically significant in explaining level of nonperforming loans as they had a probability of 0.000 which is lower than the probability conventional of 0.05.

Results indicate that a unit change in Log interest rate spread variable will lead to a positive change in level of nonperforming loans while a unit change in Log debt collection cost will cause a negative and significant change in level of nonperforming loans and a unit change in log credit appraisal cost will cause a negative and insignificant change.

5.3 Conclusions

From the study, it was possible to conclude that the decline in total bank nonperforming loans could have been as a result of aggressive credit risk management mechanism and practices. Results also led to conclusion that there was an increasing trend in lending rate from the year two thousand and eight to two thousand and twelve. The increase in lending rate was as a result of central banks of Kenya contractionally monetary policy. The monetary policy pursued by central bank involved increasing the base lending rate so as to tame the declining exchange rate of USD to Kenya shillings.

Overall, it was concluded that there was an increasing trend in deposit rate which implies that the banks may have increased the deposit rate to match the increase in lending rate. It led to conclusion that there was an increasing trend in Interest rate spread which implied that the lending rate rose at a higher rate than the deposit rate. It was possible to conclude

that there was increasing trend in debt collection cost from the year 2008 to 2012 which implied that banks are increasingly investing in debt collection mechanism such as hiring qualified debt collectors and increased litigation of defaulters.

In conclusion, there was an increasing trend in credit appraisal cost which implied that most banks had invested in credit management mechanism. This included KYC requirements. Regression result led to conclusion that there is a positive relationship between level of nonperforming loans and Log interest rate spread. From the results, it was concluded that the Log debt collection cost and Log credit appraisal cost displayed a negative relationship. Results also indicate that Log interest rate spread and Log debt collection cost were statistically significant in explaining level of nonperforming loans.

5.4 Recommendations for Policy

The findings in the study find the below recommendations relevant to the management of commercial banks and policy makers of commercial banks. In addition academicians who may use these recommendations as a source for further studies or research in the area.

Banks should be encouraged to conduct regular training programmes for credit staff. It is recommended that management should organize regular trainings in areas like credit management, risk management and financial analysis. This would sharpen the knowledge and skills of credit officers so as to improve on the quality of credit appraisals, enable credit officers appreciate the need to comply with credit policy and further enhance monitoring of credit.

It is recommended that Central Bank which is the Regulatory Authority of commercial banks in Kenya should apply stringent regulations on interest rates charged by commercial banks so as to regulate their interest rate spread and also they should come up with rigorous policies on loan advances so as to mitigate moral hazards such as insider lending and information asymmetry.

Banks should also apply efficient and effective credit risk management that will ensure that loans are matched with ability to repay, loan defaults are projected accordingly and relevant measures taken to minimize the same. Banks should also enhance periodic credit risk monitoring of their loan portfolio to reduce the level of NPA. This can be achieved by hiring qualified debt collectors and competent personnel.

It is recommended that commercial banks should use the services provided by Credit Reference Bureaus for the purpose of determining the credit worthiness of borrowers as a means of minimizing bad loans. 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 operationalised effective 2nd February 2009. The timely, accurate and up to date information on the debt profile and repayment history of borrowers would enable banks identify good borrowers from bad borrowers and thus minimize loan defaults.

It is recommended that commercial banks needs to invest on debt collections and this will entail hiring qualified and experienced debt collectors, lawyers so as to increase litigation

of defaulters and auctioneers. This is from the fact that there is an inverse relationship between debt collection costs and the level of NPA.

5.5 Limitations of the Study

One of the limitations of the study was that the study did not investigate on the effect of economic growth (GDP), unemployment, public debt and management quality on the level of non-performing loans in the banking sector.

The other limitation was that the study used secondary data for all variables which was a limitation to get for some variables. This made it necessary to use proxies for some variables specifically, appraisal costs and debt collection costs.

The study did not capture the effect of political instability on the level of nonperforming loans. Political instability may increase the risk of default and by extension lead to an increase in non performing loans.

The study did not include a comparative analysis of determinants of NPLS among the East African Economies and conclude whether the determinants differ across the region. In essence, this limited the population and sample size.

5.6 Areas of Further Research

This study was not exhaustive by any means and therefore it is suggested that another study be conducted in other companies probably using the same variables so as to establish whether the findings of this study will hold true in a different context.

Another study can also be performed on the same research topic using other variables which determine level of nonperforming to establish if the findings agree or disagree with those that have been found.

An event window analysis may be conducted to capture the effect of political instability on the level of nonperforming loans. Political instability may increase the risk of default and by extension lead to an increase in nonperforming loans.

Future area of study should include a comparative analysis of determinants of NPLS among the East African Economies and conclude whether the determinants differ across the region.

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Appendix I: List of Commercial Banks as at December, 2012

	BANK
1	Equity Bank
2	Barclays Bank of Kenya
3	Kenya Commercial Bank
4	Imperial Bank Ltd
5	Standard Chartered Bank
6	Commercial Bank of Africa
7	Stanbic Bank Ltd(CFC STANBIC)
8	National Bank of Kenya
9	Co-operative Bank of Kenya
10	Bank of Baroda Ltd
11	NIC Bank Ltd
12	I & M Bank
13	Citibank Kenya Branch
14	Habib Bank AG Zurich
15	Diamond Trust Bank Ltd
16	Transnational Bank Ltd
17	Oriental Comm (Delphis) Bank
18	Housing Finance Co of Kenya
19	Bank of India Ltd
20	Fidelity Commercial Bank
21	Family bank
22	Prime Bank Ltd
23	Victoria Commercial Bank
24	Chase Bank Ltd
25	Credit Bank Ltd
26	Paramount Universal Bank
27	Giro Commercial Bank
28	Bank Of Africa Kenya
29	African Banking Corporation
30	K-Rep Bank Ltd
31	Guardian Bank Ltd
32	Consolidated Bank
33	Development Bank
34	Gulf African Bank Limited
35	Habib Bank Ltd
36	Jamii Bora Bank Ltd
37	Dubai Bank Kenya Ltd
38	Fina Bank Limited
39	Middle East Bank (K)
40	First Community
41	EcoBank K Ltd (EABS Bank)
42	Equatorial Commercial Bank
43	UBA Kenya Bank Ltd

Source: Central Bank of Kenya, 2013

Appendix II: Data Collection Template

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2012							
2011							
2010							
2009							
2008							

Appendix III Raw Data

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2012	Bank of Africa Kenya Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Bank of Africa Kenya Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Bank of Africa Kenya Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Bank of Africa Kenya Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Bank of Africa Kenya Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Bank of Baroda (K) Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Bank of Baroda (K) Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Bank of Baroda (K) Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Bank of Baroda (K) Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Bank of Baroda (K) Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Bank of India	59,586.00	18.1	6.8	11.3	12312	59546
2011	Bank of India	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Bank of India	56,170.00	13.87	3.59	10.28	11048	47042
2009	Bank of India	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Bank of India	59,209.00	14.8	4.84	9.96	10280	33486
2012	Barclays Bank of Kenya Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Barclays Bank of Kenya Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Barclays Bank of Kenya Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Barclays Bank of Kenya Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Barclays Bank of Kenya Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	CFC Stanbic Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	CFC Stanbic Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	CFC Stanbic Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	CFC Stanbic Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	CFC Stanbic Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	chase Bank (K) Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	chase Bank (K) Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	chase Bank (K) Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	chase Bank (K) Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	chase Bank (K) Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Citibank N.A Kenya	59,586.00	18.1	6.8	11.3	12312	59546
2011	Citibank N.A Kenya	51,378.00	20.04	6.99	13.05	9,791	52,435

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2010	Citibank N.A Kenya	56,170.00	13.87	3.59	10.28	11048	47042
2009	Citibank N.A Kenya	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Citibank N.A Kenya	59,209.00	14.8	4.84	9.96	10280	33486
2012	Commercial Bank of Africa Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Commercial Bank of Africa Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Commercial Bank of Africa Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Commercial Bank of Africa Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Commercial Bank of Africa Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Consolidated Bank of Kenya Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Consolidated Bank of Kenya Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Consolidated Bank of Kenya Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Consolidated Bank of Kenya Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Consolidated Bank of Kenya Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Co-operative Bank of Kenya Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Co-operative Bank of Kenya Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Co-operative Bank of Kenya Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Co-operative Bank of Kenya Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Co-operative Bank of Kenya Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Credit Bank Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Credit Bank Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Credit Bank Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Credit Bank Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Credit Bank Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Development Bank of Kenya Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Development Bank of Kenya Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Development Bank of Kenya Ltd	56,170.00	13.87	3.59	10.28	11048	47042

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2009	Development Bank of Kenya Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Development Bank of Kenya Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Diamond Trust Bank Kenya Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Diamond Trust Bank Kenya Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Diamond Trust Bank Kenya Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Diamond Trust Bank Kenya Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Diamond Trust Bank Kenya Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Dubai Bank Kenya Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Dubai Bank Kenya Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Dubai Bank Kenya Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Dubai Bank Kenya Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Dubai Bank Kenya Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Equatorial Commercial Bank Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Equatorial Commercial Bank Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Equatorial Commercial Bank Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Equatorial Commercial Bank Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Equatorial Commercial Bank Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Equity Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Equity Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Equity Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Equity Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Equity Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Fidelity Commercial Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Fidelity Commercial Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Fidelity Commercial Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Fidelity Commercial Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Fidelity Commercial Bank	59,209.00	14.8	4.84	9.96	10280	33486

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
	Ltd						
2012	Fina Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Fina Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Fina Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Fina Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Fina Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Giro Commercial Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Giro Commercial Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Giro Commercial Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Giro Commercial Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Giro Commercial Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Guardian Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Guardian Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Guardian Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Guardian Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Guardian Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Habib Bank A. G Zurich	59,586.00	18.1	6.8	11.3	12312	59546
2011	Habib Bank A. G Zurich	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Habib Bank A. G Zurich	56,170.00	13.87	3.59	10.28	11048	47042
2009	Habib Bank A. G Zurich	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Habib Bank A. G Zurich	59,209.00	14.8	4.84	9.96	10280	33486
2012	Habib Bank Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Habib Bank Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Habib Bank Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Habib Bank Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Habib Bank Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Kenya Commercial Bank Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Kenya Commercial Bank Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Kenya Commercial Bank Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Kenya Commercial Bank Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Kenya Commercial Bank Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	K-rep Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2011	K-rep Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	K-rep Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	K-rep Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	K-rep Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Middle East Bank (K) Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	Middle East Bank (K) Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Middle East Bank (K) Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	Middle East Bank (K) Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Middle East Bank (K) Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	National Bank of Kenya Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	National Bank of Kenya Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	National Bank of Kenya Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	National Bank of Kenya Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	National Bank of Kenya Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	NIC Bank Ltd.	59,586.00	18.1	6.8	11.3	12312	59546
2011	NIC Bank Ltd.	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	NIC Bank Ltd.	56,170.00	13.87	3.59	10.28	11048	47042
2009	NIC Bank Ltd.	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	NIC Bank Ltd.	59,209.00	14.8	4.84	9.96	10280	33486
2012	Oriental Commercial Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Oriental Commercial Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Oriental Commercial Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Oriental Commercial Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Oriental Commercial Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Paramount universal Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Paramount universal Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Paramount universal Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Paramount universal Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2008	Paramount universal Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Prime Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Prime Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Prime Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Prime Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Prime Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Standard Chartered Bank Kenya Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Standard Chartered Bank Kenya Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Standard Chartered Bank Kenya Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Standard Chartered Bank Kenya Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Standard Chartered Bank Kenya Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Trans-National Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Trans-National Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Trans-National Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Trans-National Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Trans-National Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Victoria Commercial Bank	59,586.00	18.1	6.8	11.3	12312	59546
2011	Victoria Commercial Bank	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Victoria Commercial Bank	56,170.00	13.87	3.59	10.28	11048	47042
2009	Victoria Commercial Bank	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Victoria Commercial Bank	59,209.00	14.8	4.84	9.96	10280	33486
2012	African Corporation Banking	59,586.00	18.1	6.8	11.3	12312	59546
2011	African Corporation Banking	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	African Corporation Banking	56,170.00	13.87	3.59	10.28	11048	47042
2009	African Corporation Banking	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	African Corporation Banking	59,209.00	14.8	4.84	9.96	10280	33486
2012	Family Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2011	Family Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Family Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Family Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Family Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Imperial Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Imperial Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Imperial Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Imperial Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Imperial Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	I & M Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	I & M Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	I & M Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	I & M Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	I & M Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Jamii Bora Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Jamii Bora Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Jamii Bora Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Jamii Bora Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Jamii Bora Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	UBA Kenya Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	UBA Kenya Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	UBA Kenya Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	UBA Kenya Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	UBA Kenya Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	Gulf African Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Gulf African Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Gulf African Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Gulf African Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Gulf African Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486
2012	First Community Bank Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	First Community Bank Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	First Community Bank Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	First Community Bank Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	First Community Bank Ltd	59,209.00	14.8	4.84	9.96	10280	33486

Years	Bank	Total bank nonperforming loans	lending rate	deposit rate	Interest rate spread	Debt collection cost	Credit appraisal cost
2012	housing Finance Co of Kenya	59,586.00	18.1	6.8	11.3	12312	59546
2011	housing Finance Co of Kenya	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	housing Finance Co of Kenya	56,170.00	13.87	3.59	10.28	11048	47042
2009	housing Finance Co of Kenya	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	housing Finance Co of Kenya	59,209.00	14.8	4.84	9.96	10280	33486
2012	Eco Bank K Ltd	59,586.00	18.1	6.8	11.3	12312	59546
2011	Eco Bank K Ltd	51,378.00	20.04	6.99	13.05	9,791	52,435
2010	Eco Bank K Ltd	56,170.00	13.87	3.59	10.28	11048	47042
2009	Eco Bank K Ltd	57,227.00	14.76	4.84	9.92	8,602	38,837
2008	Eco Bank K Ltd	59,209.00	14.8	4.84	9.96	10280	33486