THE CAUSES OF NON-PERFORMING LOANS IN COMMERCIAL BANKS IN KENYA

BY

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D61/72382/2011

A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF BUSINESS ADMINISTRATION, UNIVERSITY OF NAIROBI

2013

DECLARATION

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

Signed………………………………………………………….Date………………

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This research project has been submitted for examination with my approval as the university supervisor.

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ACKNOWLEDGEMENTS

I would like to extend my deepest gratitude to the almighty God who gave me strength to undertake this project.

My Supervisor Mrs. Winnie, I am forever grateful for the support and guidance. Thank you.

My sincere thanks go to all members of my family for their love and support during the entire study period. Special thanks to my Aunt Loise Weru who encouraged me all through. May God richly reward her.

I would also like to thank all my fellow MBA students of whom we struggled together to get this far. May almighty God bless you.

DEDICATION

This project is dedicated to my Mother Susan Karuana and my family. I love you all

and my God's blessings be showered upon you all.

ABSTRACT

The objective of the study was to determine the causes of Non-Performing loans in Commercial Banks in Kenya. Non-Performing loans is widely associated with bank failure and financial crises for commercial banks in Kenya. Due to the nature of their business, commercial banks expose themselves to the risks of default from borrowers. The eradication of NPL's is a necessary condition to improve the economic status and stability of the banking sector. If the Non-Performing loans are kept existing and continuously rolled over the resources are locked up in unprofitable sector; thus hindering the economic growth and impairing the economic efficiency.

The study adopted the Descriptive Design and applied both multiple regression models on secondary data to determine the relationship between causes of Non-Performing Loans in Commercial Banks in Kenya. The study used secondary data for the period 2008-2012. The Interest rates, Inflation and growth in loans were used as independent variables. Non-performing loan was used as dependent variable. The population of this study comprised of 43 commercial banks in Kenya and data was analyzed using SPSS.

The study revealed that non-performing loans of commercial banks in Kenya are positively correlated with inflation rate (0.316). The study also found that non-performing loans are negatively correlated with real interest rate (-0.468) and growth rate in loans (-0.013) respectively. Further the study indicated that the study variables jointly influenced the non performing loans with an adjusted R^2 of 0.553. This means that 55.3% of variation in the dependent variable in the regression model is due to independent variables while 44.7% are due to error term, chance or unexplained. The F- Statistics of 23.409 was also significant. The model was therefore considered robust or fitted well to the actual data of the variables. The study concludes that the independent variables considered in the study jointly caused the non-performing loans in commercial banks in Kenya. The study also found that the non-performing loans were positively correlated to inflation rate. The study further concludes that non-performing loans are negatively correlated with real interest rate and growth rate in loans in Kenya. The objective of the study, which was to determine the causes of non-performing loans in commercial banks in Kenya, was therefore met. The study recommends that in order for the commercial banks in Kenya to improve, there is need for the Government to initiates measures that will control the real interest rate in Kenya. Lower interest rates would be more appropriate in order to reduce the level of non-performing loans in Kenya since they are negatively correlated with ratio of non-performing loans. The study also recommends that there is also need for the Government to control the inflation rate in Kenya as there is some evidence to suggest that low will lead to better performance of loans in Kenya. The study further recommends that there is need for the commercial banks to initiate policies that will control the amount of loans they have.

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ABBREVIATIONS

CBK – Central Bank of Kenya

BIS- Bank of International Settlement

NPL- Non Performing Loan

GDP- Gross Domestic Product

CBK-Central Bank of Kenya

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

According to Kithinji and Waweru (2007), 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 NPLs which is due to the interest rate spread. According to (McNulty et al 2001), controlling NPLs is very important for both the performance of an individual bank and the economy's financial environment. Due to the nature of their business, commercial banks expose themselves to the risks of default from borrowers. Prudent credit risk assessment and creation of adequate provisions for bad and doubtful debts can cushion the banks risk.

However, when the level of nonperforming Loans is very high, the provisions are not adequate protected (Waweru and Kalani, 2009). The occurrence of banking crises has often been associated with a massive accumulation of nonperforming assets which can account for a sizable share of total assets of insolvent banks and financial institutions. Therefore, the causes of loan defaults should be established so as to reduce the level of nonperforming loans.

Over the past decade, the credit quality of loan portfolios across most countries in the world remained relatively stable until the financial crises hit the global economy in 2007-2008. Since then, average bank asset quality deteriorated sharply due to the global economic recession. The fact that loan performance is tightly linked to the economic cycle is well known and not surprising. Yet the deterioration of loan

performance was very uneven across countries. For example, the Baltic countries which stand out in cross-country comparisons of GDP performance during the crisis had very large increases in non-performing loans (NPLs) even when controlling for the severity of the recession.

1.1.1 Non- Performing Loans

There is no global standard to define NPL at the practical level. Variation exists in terms of the classification system, the scope, and contents. A Non-Performing Loan is a loan that is in default or close to being in default. A loan is non-performing when payments of interests and principal are past due by 90 days or more, or at least 90 days of interest payment have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payment will be made in full (IMF, 2009). NPLs can be treated as undesirable outputs or costs to loaning banks which decreases the bank's performance. Hennie and Sonja (2009) define NPLs as assets not generating income. This is when principal or interest is due and left unpaid for 90 days or more. Loan defaults are inevitable in any lending. What banks do is to minimize the risk of defaults. NPL are loans that have defaulted or in danger of defaulting, when payment are no longer able to be made. Typically, loans that have not received payments for three months are considered to be non-performing though specific contract terms may differ occasionally (Mikiko,2003).

1.1.2 Causes of Non-Performing Loans

Causes and treatment of Non-Performing loans were studied in detail by Gorter and Bloem (2001). They agreed that "bad loans" may considerably rise due to abrupt changes in interest rates. A study conducted by Espinoza and Prasad (2010) focused

on macroeconomic and bank specific factors influencing non-performing loans and their effect in GCC Banking system. After a comprehensive analysis they found that high interest rates increase Non-Performing loans but the relationship was not statistically significant. Salas and Saurina(2002) find a negative relationship between bank size and Non-Performing Loan and argue that bigger size allows for more diversification opportunities. Hu et al. (2004) report similar empirical evidence.

Micco et al. (2004), analyzed 50,000 financial institutions with different ownership types covering 119 countries. They concluded that non-performing loans tend to be higher for banks with state ownership than for other groups. More recently Hu et al. (2006) analyzed the relationship between Non-Performing loans and ownership structure of banks in Taiwan. The study shows that bank with higher government ownership recorded lower Non-Performing loans. It is thus the essence of this study to establish cause of Non-Performing loans in Kenya Commercial Bank and Management of the same.

According to Kroszner (2002) Non-performing loans are closely associated with banking crises. Sultana (2002) also links the Japanese Financial Crises to Non-Performing Loans. According to Sultana (2002), Japanese bank still suffer under the weight of thousands of billions of yen of bad loans resulting from collapse in asset prices a decade ago in the country's financial system. According to central bank of Kenya (2003), there was a 4.5 per cent decline in pre-tax profit for the banking industry in the year 2002. NPL can be treated as undesirable outputs or costs to a loaning bank, which decrease the bank's performance (Chang, 1999). The risk of NPL mainly arises as the external economic environment becomes worse off such as economic depression.

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Goldstein and Turner(1996) suggest that there are several measures that can significantly reduce the incident of each of the factors underlying banking crises. For example, greater macroeconomic stability, the wider use of market-based hedging instruments and higher levels of bank capital would help to make the consequences of NPL in the domestic banking system less damaging. Limiting the allocation of bank credit to particular interest rate sensitive sectors, close monitoring of lending and employing the right mix of macroeconomic and exchange rate policies would similarly limit vulnerability of lending boom, asset price collapse and surges of capital inflows.

However (Tirapat, 1999) urged that there is no single solution to their occurrence. Tirapat (1999) agrees with Goldestein and turner on the role of government in determining to a great extent the success of efforts to managing such crisis. According to the Bank of Japan (2003), the remedies to the problem of NPLs can be grouped into three broad categories, all of which work towards enhancing the banks' earning power. First is to further improve efficiency through cost reduction. Secondly is to pursue a new lending strategy backed by appropriate credit risk evaluation, and third is to provide new financial services to increase fee income. Controlling NPL is very important for both the performance of an individual bank (McNulty, Akhigbe and Verbrugge, 2001) and the economy's financial environment.

1.1.3 Relationship between Causes of Non-Performing Loans and Non-Performing Loans

There is negative relationship between Causes of NPL and the level of NPLs in banks. Management of NPLs in banks helps improve the financial performance of banks as interest on loans is the biggest income of banks and increases the liquidity position of banks, helps in protecting the bank reputation and reduces loan losses.

One of the most important aspects of leading is determining the customer desire to repay the loan. Information in the credit file will give the credit officer document on the customer's repayment history Golden, Sam and Harry (1993). Although Commercial Banks have measures in place to guard against loans, taking morgage on landed properties, stock, bonds and other securities to fall on in time of default, loan default has become an inevitable part of the banking or lending business Samuel(2011).

1.1.4 Nairobi Securities Exchange

In Kenya, dealing in shares and stocks started in the 1920's. However the market was not formal as there did not exist any rules and regulations to govern stock broking activities and trading took place on a 'gentleman's agreement.' Standard commissions were charged with clients being obligated to honor their contractual commitments of making good delivery, and settling relevant costs. At that time, stock broking was a sideline business conducted by accountants, auctioneers, estate agents and lawyers who met to exchange prices over a cup of coffee. Because these firms were engaged in other areas of specialization, the need for association did not arise (NSE, 2013)

In 1951, an Estate Agent by the name of Francis Drummond established the first professional stock broking firm. He also approached the then Finance Minister of Kenya, Sir Ernest Vasey and impressed upon him the idea of setting up a stock exchange in East Africa. The two approached London Stock Exchange officials in July of 1953 and the London officials accepted to recognize the setting up of the Nairobi Stock Exchange as an overseas stock exchange (NSE, 2013)

In 1954 the Nairobi Stock Exchange was then constituted as a voluntary association of stockbrokers registered under the Societies Act. Since Africans and Asians were not permitted to trade in securities, until after the attainment of independence in 1963, the business of dealing in shares was confined to the resident European community. At the dawn of independence, stock market activity slumped, due to uncertainty about the future of independent Kenya (NSE,2013). 1988 saw the first privatization through the NSE, of the successful sale of a 20% government stake in Kenya Commercial Bank. The sale left the Government of Kenya and affiliated institutions retaining 80% ownership of the bank (NSE,2013)

Notably, on February 18, 1994 the NSE 20-Share Index recorded an all-record high of 5030 points and was rated by the International Finance Corporation (IFC) as the best performing market in the world with a return of 179% in dollar terms. The NSE also moved to more spacious premises at the Nation Centre in July 1994, setting up a computerized delivery and settlement system (DASS). For the first time since the formation of the Nairobi Stock Exchange, the number of stockbrokers increased with the licensing of 8 new brokers (NSE,2013)

Live trading on the automated trading systems (ATS) of the Nairobi Stock Exchange was implemented in September 2006. The ATS was sourced from Millennium Information Technologies (MIT) of Colombo, Sri Lanka, who was also the suppliers of the Central Depository System (CDS). MIT have also supplied similar solutions to the Colombo Stock Exchange and the Stock Exchange of Mauritius. The NSE ATS solution was customized to uphold the spirit of the Open Outcry Trading Rules in an automated environment.

In July 2011, the Nairobi Stock Exchange Limited, changed its name to the Nairobi Securities Exchange Limited. This change of name reflected the strategic plan of the Nairobi Securities Exchange to evolve into a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments.

In September 2011 the Nairobi Securities Exchange converted from a company limited by guarantee to a company limited by shares and adopted a new Memorandum and Articles of Association reflecting the change

In Kenya, sixty (60) companies are listed in the NSE, which is the only stock exchange firm in the country. Listed companies fall into two main segments, the main market segment and the alternative investment market segment. The NSE has classified these companies into ten sectors. These are; agriculture, commercial and services, telecommunication and technology, automobiles and accessories, banking, insurance, investment, manufacturing and allied, construction and allied, energy and petroleum (NSE, 2013).

1.2 Research Problem

It is argued that the Non-Performing loans are one of the major causes of the economic stagnation problems. The eradication of Non-Performing loans is a necessary condition to improve the economic status. If the Non-Performing loans are kept existing and continuously rolled over the resources are locked up in unprofitable sector; thus hindering the economic growth and impairing the economic efficiency. Krueger and Tornell (1999) attribute the credit crunch in Mexico after the 1995 crisis partially to the bad loans. They point out that financial institutions were burdened with credits of negative real value, thereby reducing their capacity of providing fresh fund for new projects.

Financial sector need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits and transactions. The effective management of credit risk is a critical component of a comprehensive approach of risk management and essential to the long term success of any financial organization. Since banks are more likely to be exposed to moral hazard and adverse selection when advancing loans to borrowers, credit assessment of loan is inevitable. This should be done with a clear mind that there is great potential that most borrowers default. Frederic (2007), point out that financial institutions attempt to solve these problems by coming up with ways and means for managing credit risk: screening and monitoring, establishment of long-term customer relationships, loan commitments and compensating balance requirements and credit rationing.

The following studies have so far been done: Matu (2001), showed that the high levels of Non-Performing loans put pressure on the banks to retain high lending rates

in an attempt to minimize losses associated with these loans. Kiayai (2003) showed a combination of different techniques enticing defaulting customers yield better results. He stated debt restructuring by refining interest rates was the top preferred method of addressing the problem on Non-Performing loans. He also found out that no relationship existed between debt restructuring and the levels of Non-Performing loans. On credit risk management Kioko (2008) and Ngare (2008) focused on commercial banks. The concept that they focused on was credit risk management techniques.

Interest income constitutes the major income for the banks. Analyst agree that interest rate regime put in a banking system should be expected to determine the earnings of the entire banking sector, whose core source of income is interest income(CBK, January, 2003). Since Non-Performing loans are those that are not serviced according to loan contract, they represent potential losses to financial banks. Write offs of bad loans is also a major area of concern for banks. According to KPMG (2002), as banks charge off bankruptcy cases, affect the profit and loss account. Thus write off of bad debts eat into bank profits. A high level of Non-Performing loans in a bank portfolio of investments affects the level of interest income.

Even though manager may have very little control over prevailing rates of interest in the market place, there are other conscious decisions they make that could reduce the impact of bad debts on bank profits. In addition, individual banks may not have meaningful influence over macroeconomic factors that lead to bankruptcy of their borrowers. However, as agent of the shareholders, managers have the responsibility to adopt management decisions that are in the best interests of shareholders. Such

decision should ensure wealth maximization. This is in accordance with the agency theory McColgan(2001).

The research to be conducted will aim to determine the root causes of Non-Performing loans and management of Non-Performing loan in Banks. There is also need to examine the mechanisms put in place by bank management in order to ensure continued generation on income.   This study intends to answer the following questions: What are the causes of Non-Performing Loans?

1.3 Objective of the Study

The general objective of this study is to analyze the causes and the management of non- performing loans in banks listed in Nairobi Security Exchange.

1.3.1 Specific Objectives

The objective of the study was :-

To establish the causes of Non-Performing Loans in Commercial Bank in Kenya.

1.4 Value of the Study

The results of the study will make the commercial banks manager appreciate the need to monitor and control Non-Performing loans as it equally affects the profitability through provision made by the commercial banks. The findings will also encourage bank manager to participate more in policy formulation as far as bad debt management is concerned.

The results of the study will also be useful to academicians as it will highlight areas for further research and it will contribute to new knowledge. The academician being

charged with dissemination of knowledge to various stakeholders will hence find this study useful when doing so.

The results of the study will come in handy to support the Government as a regulator in its quest to streamline operations in the banking sector putting in mind that the economy as a whole depends on how the banking sector in the economy performs. High levels of Non-Performing loans can hinder growth in the economy.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter present the theoretical and empirical literature review relevant to the topic under study. The theoretical review will discuss on the concept of Non-Performing Loans. The empirical review will present views of researchers on the variables of the study as guided by the purpose of the study and the research questions.

2.2 Theories of Non-performing Loans

2.2.1 Asymmetry Theory

The theory of asymmetric information tells us that it may be difficult to distinguish good from bad borrowers (Auronen, 2003 and Richard,2011), which may result into adverse selection and moral hazards problems. The theory explains that in the market, the party that possesses more information on a specific item to be transacted is in a position to negotiate optimal term for the transaction than the other party (Auronen, 2003).

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

2.2.2 Agency Theory

According to the Agency theory, the principal agency problem can be reduced by better monitoring such as establishing more appropriate incentives for managers. In the field of corporate risk management agency issue have been shown to influence managerial attitudes towards risk taking and hedging Smith and Stulz(1985). Theory also explains a possible mismatch of interest between shareholder management and debt holders due to asymmetries in earning distribution, which can result in the firm taking too much risk or not engaging in positive net value project (Smith and Stulz, 1987). Consequently, agency theory implies that defined hedging policies can have important influence on firm value (Fite and Pfleiderer, 1995).

2.2.3 Transaction Cost Theory

In transaction cost theory, does not contradict the assumption of complete markets. It is based on convexities in transaction technologies. Here, the financial intermediaries act as coalitions of individual lenders or scale or scope in the transaction technology.

Transaction cost theory has proven an essential framework for decision on the vertical boundaries of the firm. Transaction costs are the cost associated to the division of work. Williamson (2000), indicated that transaction occurs when a good or service is transferred across a technology separable interfaces. Variables that describe a transaction are among others, the specificity, the uncertainty, and the frequency of the transaction, whether an asset or a service is only or much more valuable in the context of a specific transaction. In the following human capital specificity the asset specificity and the site specificity are taken into account (Reddy, 2002).

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2.2.4 Stakeholder theory

Stakeholders' theory, developed originally by Freeman(1984) as a managerial instrument, has since evolved into a theory of the firm with high explanatory potential. Stakeholder theory focuses explicitly on equilibrium of stakeholder's interests as the main determinant of corporate policy. The most promising contribution to risk management is the extension of implicit contracts theory form employment to other contracts, Including sales and financing Cornell and Shapiro, (1987). To certain industries, particularly high-tech and services, consumer trust in the company being able to continue offering its services in the future can substantially contribute to company value. However, the value of these implicit claims is highly sensitive to expected costs of financial distress and bankruptcy. Since corporate risk management practices lead to a decrease in these expected costs, company value rises (Klimczak, 2005). Therefore stakeholder theory provides a new insight into possible rationale for risk management. However, it has not yet been tested directly. Investigations of financial distress hypothesis provide only indirect evidence (Judge, 2006)

2.4 Emprical Evidence

Keeton (1999) used data from 1982-1996 and a vector auto regression model to analyze the impact of credit growth and loan delinquencies in the US. It reported evidence of a strong relationship between credit growth and impaired assets. Keeton(1999) showed that rapid credit growth, which was associated with lower credit standards, contributed to higher loan losses in certain states in the US. In this study loan delinquency was defined as loans which are overdue for more than 90 days or does not accrue interest.

Basel (2013) using estimation technique method and panel data set Covering 75 countries over ten year period from 2005 to 2010 studied the macroeconomic determinants of non-performing loans. The Analysis presented that real GDP growth was the main driver of non- performing loan ratio. In addition, exchange rate depreciations lead to an increase of non-performing loans in countries with a high degree of lending in foreign currencies to un-hedged borrowers.

Salas and Saurina (2002) investigated the determinants of problem loans of Spanish Commercial and Savings Banks using a dynamic model and panel dataset covering the period 1985-1997. The finding of the study was that real growth in GDP, rapid credit expansions, bank size, capital ratio and market power all explain variation in NPLs.

Hu et al (2006) with a panel dataset covering the period 1996-1999, used a regression analysis and analyzed the relationship between NPLs and ownership structure of commercial banks in Taiwan. The study showed that banks with higher government ownership recorded lower non performing loans. The finding of the study showed that bank size is negatively related to NPLs while diversification may not be a determinant.

Westermann (2003) investigated the relationship between the loan supply and real lending capacity, leading rate, real output, bank's capital ratio, and non-performing loan. The results show that the coefficients of non-performing loan are negative and significant, which indicate that bank credit supply declines with the worsening of the Non-performing loans problem. Westermann (2003) compared the causes of Germany after the credit boom of the late 1990s and Japan aftermath of the bubble burst in early

1990s. He argued that even though the German bank were in a better condition than Japanese banks, as the path of German's aggregate credit looked so similar to that of Japan, it is at least unlikely that the German credit slowdown was entirely driven by demand, while that of Japan was caused by lack of supply. He further pointed out that the one of the main reasons in Germany for the credit crunch is the increased risk of non-performing loans after the credit boom.

Bercoff et al (2002) examine the fragility of the Argentinean banking system over the 1993-1996 period, they argued that Non-Performing loans are affected by both bank specific factors and macroeconomic factors. To separate the impact of bank specific and macroeconomic factors, the author employ survey analysis, using a dynamic model and a panel dataset covering the period 1985-1997 to investigate the determinants of problem loans of Spanish Commercial and Saving banks.

Shehzad et al. (2001) present empirical evidence, from a data set comprising 500 bank from 2005 to 2007, that ownership proxied by three levels of shareholding (10%, 20%, and 50%) has a positive impact on the ownership concentration is defined at 10% but a negative impact when the level of ownership concentration is defined at 50%. The study of the finding suggested that sharing of control may have adverse effect on the quality of loans extended up to a level, but in case of a strong controlling owner bank's management becomes more efficient leading to lower Non-Performing loans.

Warue (2012) used a causal comparative research design based on bank structures was adopted and studied the effects of Bank Specific and Macroeconomic factor on

non-performing loans in commercial bank in Kenya. The period under this study was 1995 to 2009. The study found evidence that bank specific factors contribute to NPLs performance at higher magnitude compared with macroeconomic factors.

Gorter and Bloem (2002) argues that the true underlying cause of NPLs is entirely of our own making. Poor risk management. This is a situation whereby the bank credit officials do not properly access the suitability of advancing credit to their customers. They do not adhere to the good lending principles. Practically all affected banks display similar symptoms; insider lending; poor monitoring of loan accounts, under-qualified staff, little or no cash flow appraisal of loan requests, continuous monitoring of customer conditions and proper follow up on how the loan has been utilized as there is a possibility that the loan may not be utilized for the intended purpose leading to project failure.

Kiayai (2003) argue that the poor fiscal policy had resulted to high inflation rates and that this could be one of the contributors of NPLs. Inflationary expectation is a factor that is embedded in the interest rate. Interest will remain high if investors believe that the government will introduce inflation in future by adding money in circulation through extended credit form the central bank.

2.5 Conclusion

Adverse economic conditions have been a major contributor to the bad loan scenario. Kenya economy has been performing very poorly in the last decade or and continues to decline, affecting the capacity to pay and collateral value. Poor and unprofessional credit evaluation has affected banking sector. Leading decisions made in the past by

the financial sector, a lot of emphasis has been put on security other similar important considerations. There are instances in the past when it was easier to get a loan from financial institutions as long as the borrower has security to be charged than the ability to service the loan. Cash flow projections, viability of the projects, character of the borrowers, previous loans considered as important. This way a number of banks ended up with many non-performing loans.

According to Brownbridge (1998), the single biggest contributor to the bad loans of many of the failed local banks was insider leading. In at least half of the bank failures insider loans accounted for a substantial proportion of the bad debts. He sites three forces behind insider lending and lists them as political pressure, under capitalization and over concentration in ownership. He further observed that second major factor contributing to bank failure were high interest rates charged to borrowers operating in the high risk segment of the credit market. This involved elements of moral hazard on the part of both the banks and the adverse selection of the borrowers.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

The chapter outlines the research design, target population, data collection and data analysis procedures used in the study. It discusses the methodology that was used to analyse the causes of NPLs in Commercial Banks in Kenya.

3.2. Research Design

The research design used was descriptive design. This research design was appropriate with the purpose of the study, which was to analyse the causes of non-performing loans in Commercial Banks in Kenya.

3.3. Population and Sampling

According to Cooper and Schindler (2006), population refers to the total collection of the elements about which the researcher wishes to make inferences. For the purpose of the study, the population of the study was all Commercial Banks in Kenya. These Banks are forty three (43) in number as per the central Bank of Kenya's Banking Supervision Report of 2012. Data for the period 2008 to 2012 was analyzed. All these banks were studied since a conclusive and whole representative analysis was to be arrived at in the end.

3.4. Data Collection

The study used secondary data to achieve its objective. The secondary data source was periodically released by the CBK, Statistical documents, Banking Surveys of

various year, Kenya national Bureau of Statistics Publication, among other sources like annual published accounts.

3.5. Data Analysis

According to Babbie (2010), data analysis is carried on the data collected to transform it to a form that is suitable for use in drawing conclusions that reflect on the ideas, and theories that initiated the inquiry. After collecting the data was edited, classified, coded and tabulated. Quantitative data was analyzed using Statistical Package for Social Science (SPSS) version 17.0. Spreadsheets was used in order to come up with appropriate charts and tables for data presentation.

To achieve the objective of the study, a model was developed using causes as independent variables and NPLs levels as dependent variables. The extent to which NPLs have increased in commercial bank and their causes was analyzed using regression analysis.

3.5.1 Model Specification

The study will use the following economic model.

$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \xi_i$

Where

Y = The level of Non Performing Loan computed as

$$\frac{NPL}{Total\ Loans} \times 100$$

$X_1 =$ The real interest rate measured as the difference between the weighted average lending rates the monthly inflation rate of the bank

$X_2 =$ The Monthly inflation rate of the Bank

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$X_3 =$ The growth in loans of bank

$\xi_i =$ the error term assumed to have zero mean and independent across time period.

$\beta_0 =$ constant parameter/ Intercept

$\beta_1, \beta_2, \beta_3, =$ Are the coefficient of the independent variables i.e x_1, x_2, x_3.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and findings of the study which was to establish the causes of non-performing loans in commercial banks in Kenya. The analysis is based on data collected from 2008 to 2012. The results are presented in the form of summary tables. The data for this study was obtained from Central Bank of Kenya and Kenya National Bureau of Statistics. The data was analyzed using descriptive analysis, correlation analysis and multiple linear regressions to answer the research objective using SPSS.

4.2 Descriptive Analysis Results

The result (Table 4.1) shows that a total of 60 occurrences of each variable were used in the study. The result indicates that the overall average ratio of non-performing loans for commercial banks in Kenya under the study was 7.077%, real interest rate was 2.813%, the annual average inflation rate was 12.77% and average growth in loan was 1.5912%. All the series have a coefficient of kurtosis of greater than 3 against the standard value of 3 for a normal distribution. The findings therefore show features of non-normality which is common in financial time series data.

The results (Table 4.1) also indicate the minimum and maximum of each variable in the period under consideration. The standard deviations from means of ratio of nonperforming loan, real interest rate, inflation rate, and growth in loan were 1.99, 9.22, 8.63 and 1.79 respectively.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
Descriptive Statistics										
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Ratio of Non-Performing Loans	60	4.3457	10.4655	7.07711	1.9864383	3.946	-.029	.309	-1.457	.608
Real Interest rate	60	-17.4900	15.4500	2.8131	9.2222521	85.050	-.740	.309	-.550	.608
Inflation rate	60	3.1800	31.5000	12.771	8.6311477	74.497	.667	.309	-.753	.608
Growth in Loan	60	-2.1287	11.1512	1.5912	1.7931279	3.215	2.599	.309	13.115	.608
Valid N (listwise)	60									

Source: Research Data

4.3 Correlation Analysis Results

Table 4.2 shows the correlation results for dependent and independent variables. The results indicates that ratio of non-performing loans of commercial banks are positively correlated with inflation rate (0.316). The study (Table 4.2) also revealed that ratio of non-performing loans of commercial banks is negatively correlated with real interest rate (-0.468) and annual average inflation (-0.013).

The results (Table 4.2) also indicate the correlation relationship between the independent variables. Real interest rate had strong negative correlation with inflation (-0.968) and weak negative correlation with growth in loans (-0.148). Further the finding indicates that inflation rate and growth in loan are positively correlated (0.089).

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Table 4.2: Correlation Statistics for Dependent and Independent Variables

		Ratio of Non-Performing Loans	Real Interest rate	Inflation rate	Growth in Loan
		Correlations			
Pearson Correlation	Ratio of Non-Performing Loans	1.000	-.468	.316	-.013
	Real Interest rate	-.468	1.000	-.968	-.148
	Inflation rate	.316	-.968	1.000	.089
	Growth in Loan	-.013	-.148	.089	1.000
Sig. (1-tailed)	Ratio of Non-Performing Loans	.	.000	.007	.461
	Real Interest rate	.000	.	.000	.130
	Inflation rate	.007	.000	.	.250
	Growth in Loan	.461	.130	.250	.
N	Ratio of Non-Performing Loans	60	60	60	60
	Real Interest rate	60	60	60	60
	Inflation rate	60	60	60	60
	Growth in Loan	60	60	60	60

Source: Research Data

4.4   Regression Analysis Results

The causes of non-performing loan in commercial banks in Kenya were investigated using multiple linear regressions. The results are presented in Table 4.3 below. The study established the economic model as follows:

$Y=16.033-2.772x_1-2.348x_2-0.214x_3$

According to the regression equation established, taking all variables constant at zero, ratio of non-performing loan will be 16.033%. At 5% level of significance and 95% level of confidence, the researcher established that the collinearity statistics of real interest rate had a tolerance factor of 0.059, inflation had tolerance factor of 0.060

while growth in loan had a tolerance factor of 0.932 indicating that these variables causes the non-performing loans in commercial banks in Kenya.

Table 4.3: Regression Results for Dependent and Independent Variables

<div align="center">Coefficients^a</div>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	16.033	1.341		11.954	.000	13.346	18.720					
Real Interest rate	-.597	.079	-2.772	-7.575	.000	-.755	-.439	-.468	-.711	-.674	.059	16.898
Inflation rate	-.540	.084	-2.348	-6.462	.000	-.708	-.373	.316	-.654	-.575	.060	16.661
Growth in Loan	-.237	.102	-.214	-2.316	.024	-.441	-.032	-.013	-.296	-.206	.932	1.073

a. Dependent Variable: Ratio of Non- Performing Loans

Source: Research Data

4.4.1 Ratio of Non-Performing Loans and Real Interest Rate

From Table 4.3 above, the study found that there is negative relationship between the ratio of non-performing loans and real interest rate of (-2.772). This means that when real interest rate increases by 1%, non-performing loans changes by 2.772%. The results are consistent with correlation analysis which indicated a negative correlation exists between the two variables.

4.4.2 Ratio of Non-Performing Loans and Inflation Rate

The results (Table 4.3) established that the ratio of non-performing loans and inflation rate have negative impact with each other of 2.348. This implies that when the inflation rate increases by one unit it will impact the ratio of non-performing loans 2.348. This is consistent with the correlation which indicated a positive correlation between the two variables of 0.316.

4.4.3 Ratio of Non-Performing Loans and Growth Rate in Loans

The results (Table 4.3) established that the non-performing and growth in loans had a negative impact in that a unit change in growth in loans will lead to a 0.214 impact on the ratio of non-performing loans.

4.5 Robustness of the Study Model

This entailed testing the 'goodness of fit' of the model to the actual data and the extent to which the independent variables explained the variation in the dependent variables. Table 4.4 shows that the adjusted R^2, which is the coefficient of determination measuring the proportion of variation in non-performing loans in commercial banks in Kenya is 0.553 indicating that about 55.3% of variation in the dependent variable in the regression model are due to independent variables while 44.7% are due to error term, chance or unexplained.

Table 4.4: Model Summary

Model Summary[b]										
				Std. Error		Change Statistics				
		R	Adjusted	of the	R Square	F			Sig. F	Durbin-
Model	R	Square	R Square	Estimate	Change	Change	df1	df2	Change	Watson
1	.746[a]	.556	.533	1.3580772	.556	23.409	3	56	.000	.213
a. Predictors: (Constant), Growth in Loan, Inflation rate, Real Interest rate										
b. Dependent Variable: Ratio of Non- Performing Loans										

Source: Research Data

4.6 ANOVA Model Analysis

Table 4.5 shows that the F-statistics is 23.409 and is significant at 0.0001. Thus the independent variables in the model jointly influence non-performing loans in commercial banks in Kenya. The model was therefore considered robust or fitted well to the actual data of the variables.

Table 4.5: ANOVA Model Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	129.525	3	43.175	23.409	.000[a]
	Residual	103.285	56	1.844		
	Total	232.810	59			
a. Predictors: (Constant), Growth in Loan, Inflation rate, Real Interest rate						
b. Dependent Variable: Ratio of Non- Performing Loans						

ANOVA[b]

Source: Research Data

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Introduction

This chapter presents the summary of the study, conclusion, recommendations, limitations of the study and suggestions for further research.

5.2   Summary

The study adopted the Descriptive Design and applied both multiple regression models on secondary data to determine the relationship between causes of Non-Performing Loans in Commercial Banks in Kenya. The study used data for the period 2008-2012. The Interest rates, Inflation and growth in loans were used as independent variables. Non-performing loan was used as dependent variable. The population of this study comprised of 43 commercial banks in Kenya and data was analyzed using SPSS.

The studies revealed that non-performing loans of commercial banks in Kenya are positively correlated with inflation rate (0.316). The study also found that non-performing loans are negatively correlated with real interest rate (-0.468) and growth rate in loans (-0.013) respectively. The study revealed that correlation relationship between the independent variables real interest rate had strong negative correlation with inflation (.0968) and weak negative correlation with growth in loans (-.148). The studies indicated that inflation rate and growth are positively correlated (0.089). The studies established that interest rates had a tolerance factor of 0.059, Inflation had tolerance factor of 0.060 while growth in loan had a tolerance factor of 0.932 at 5% Level of significance and 95% Level of confidence, indicating that these variables

causes the Non-Performing Loans in Commercial Banks in Kenya. Further the study indicated that the study variables jointly influenced the non performing loans with an adjusted R^2 of 0.553. This means that 55.3% of variation in the dependent variable in the regression model is due to independent variables while 44.7% are due to error term, chance or unexplained. The F- Statistics of 23.409 was also significant. The model was therefore considered robust or fitted well to the actual data of the variables.

5.3 Conclusion

The study concludes that the independent variables considered in the study jointly caused the non-performing loans in commercial banks in Kenya. The study also found that the non-performing loans were positively correlated to inflation rate.

The study concludes that non-performing loans are negatively correlated with real interest rate and growth rate in loans. The objective of the study, which was to determine the causes of non-performing loans in commercial banks in Kenya, was therefore met.

The study concluded there is a strong negative correlation relationship between the independent variables. Real interest rate had a strong negative correlation with inflation and weak negative correlation with growth in loans. Further the study concluded that inflation rate and growth in loan are positively correlated.

A review of the related literature revealed a general consensus from the theoretical and empirical studies that there is indeed a relationship between causes of non-performing loans in commercial banks in Kenya.

5.4 Limitations of the study

This study was limited to three variables as the causes of Non-Performing Loans in Commercial banks in Kenya. This list of variable is by no means exhaustive. In particular, other variables such as size of the bank, GDP and real effective Exchange rate that were excluded. The interpretation of these results as concerns to the causes of non-performing loans should be restricted to variables under study.

The second limitation relates to the period of study. Five year was chosen due to availability of data on the CBK website. However such a short period is insufficient for drawing inferences in the long run.

The third limitation relates to study population. The study covered Commercial Banks in Kenya and did not consider other financial institutions across all sectors so as to provide a more broad based analysis.

The study was limited to establishing the causes of Non-Performing Loans in Commercial Bank in Kenya. Few studies have been done on causes and management of Non-performing Loans in Kenya.

Lastly, this descriptive and correlation study relied on secondary data which had already been compiled by the CBK and KNBS. Data were used as they were obtained

and the researcher had no means of verifying for the validity of the data which were assumed to be accurate for the purpose of this study. The study results are therefore subject to the validity of the data.

5.5 Recommendations

5.5.1 Policy Recommendations for Policy makers

The study recommends that in order for the commercial banks in Kenya to improve, there is need for the Government to initiates measures that will control the real interest rate in Kenya. Lower interest rates would be more appropriate in order to reduce the level of non-performing loans in Kenya since they are negatively correlated with ratio of non-performing loans.

The study also recommends that there is also need for the Government to control the inflation rate in Kenya as there is some evidence to suggest that low inflation rate will lead to better performance of loans in Kenya. The study further recommends that there is need for the commercial banks to initiate policies that will control the amount of loans they have.

5.5.2 Suggestion for Further Research

The study investigated the causes of Non-Performing Loans in Commercial Bank in Kenya. The financial Industry in Kenya however is comprised of various other financial institutions which differ in their way of management and have different setting. This warrants the need for another study to generalize the findings of all the

financial institutions in Kenya. The Study therefore recommends another study be done with an aim to investigate the causes of Non-Performing Loans of Financial Institutions in Kenya.

The study also applied only three independent variables in determining the results, a further study can be carried out by including more independent variables to the regression model.

The study further recommends that a study to be carried out to determine the causes and management of Non-Performing on Performance of Commercial Banks in Kenya.

Lastly, five year of study was chosen. The study therefore recommends that a study be carried with the aim of increasing the period under study.

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APPEDIX I

Licensed Commercial banks in Kenya

1. Bank of Africa
2. Bank of Baroda
3. Bank of India
4. Barclays Bank
5. Brighton Kalekye Bank
6. CFC Stanbic Bank
7. Chase Bank (Kenya)
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Bank Kenya
16. Ecobank
17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. Fina Bank
22. First Community Bank
23. Giro Commercial Bank
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich

28. I&M Bank

29. Imperial Bank Kenya

30. Jamii Bora Bank

31. Kenya Commercial Bank

32. K-Rep Bank

33. Middle East Bank Kenya

34. National Bank of Kenya

35. NIC Bank

36. Oriental Commercial Bank

37. Paramount Universal Bank

38. Prime Bank (Kenya)

39. Standard Chartered Kenya

40. Trans National Bank Kenya

41. United Bank for Africa[2]

42. Victoria Commercial Bank

43. ABC-Bank(Kenya)

APPEDIX II: Sample Data Collected

YEAR	Months	REAL INTEREST RATE	INFLATION	GROWTH IN LOAN	Ratio of NPL
2008	1	-4.42	18.2	2.72	10.38
	2	-5.26	19.1	0.94	10.29
	3	-7.74	21.8	-0.50	10.47
	4	-12.69	26.6	11.15	9.46
	5	-17.49	31.5	-0.86	9.55
	6	-15.24	29.3	-2.13	9.75
	7	-12.6	26.5	4.53	9.01
	8	-13.94	27.6	1.78	8.85
	9	-14.54	28.2	2.23	8.78
	10	-14.78	28.9	4.45	8.45
	11	-14.53	29.4	0.12	8.44
	12	-12.92	27.7	0.90	9.00
2009	1	-7.12	21.9	0.70	8.90
	2	0.07	14.6	0.75	8.84
	3	0.27	14.6	-0.22	9.35
	4	2.31	12.4	0.55	9.31
	5	5.25	9.6	1.33	9.88
	6	6.49	8.6	0.69	9.01
	7	6.39	8.4	1.21	8.99
	8	7.46	7.3	1.21	8.94
	9	8.04	6.7	0.86	8.23
	10	8.18	6.6	2.58	8.16
	11	9.85	5	0.33	8.12
	12	9.46	5.3	1.87	7.94
2010	1	10.28	4.7	0.36	8.19
	2	9.78	5.2	1.21	8.09
	3	10.46	4.5	0.71	7.98
	4	10.88	3.7	1.27	7.75
	5	10.54	3.9	2.09	7.63
	6	10.89	3.5	1.56	7.90
	7	10.69	3.6	2.42	7.17
	8	10.96	3.22	1.84	7.04
	9	10.77	3.21	1.64	6.96
	10	10.67	3.18	2.41	6.81
	11	10.11	3.84	1.31	6.50
	12	9.36	4.51	1.51	6.24
2011	1	8.61	5.42	2.03	5.75
	2	6.66	6.54	2.70	6.09
	3	4.5	9.19	2.57	6.01
	4	1.87	12.05	2.10	5.91
	5	0.93	12.95	3.07	5.70
	6	-0.58	14.49	3.46	5.38
	7	-1.4	15.53	3.25	5.18
	8	-2.35	16.67	1.74	5.05
	9	-2.53	17.32	4.81	4.84
	10	-3.7	18.91	1.76	5.00
	11	-1.24	19.72	-1.00	4.59
	12	1.11	18.93	0.34	4.40

Source: Research Data

APPEDIX II: Sample Data Collected Cont…….

YEAR	Months	REAL INTEREST RATE	INFLATION	GROWTH IN LOAN	Ratio of NPL
2012	1	1.23	18.31	0.09	4.91
	2	3.59	16.69	1.19	4.46
	3	4.73	15.61	1.20	4.35
	4	7.16	13.06	2.05	4.43
	5	7.9	12.22	2.411	4.38
	6	10.25	10.05	-0.163	4.46
	7	12.41	7.74	1.080	4.49
	8	14.04	6.09	1.068	4.52
	9	14.41	5.32	1.057	4.55
	10	14.9	4.14	1.046	4.57
	11	15.45	3.25	1.035	4.60
	12	14.95	3.20	1.024	4.63

Source: Research Data