EFFECTS OF MACRO-ECONOMIC VARIABLES ON NON-PERFORMING LOANS OF COMMERCIAL BANKS IN KENYA

By

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DECLARATION

This research project is my original work and has not been presented for a degree in any other institution.

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This research project has been submitted for the examination with my approval as the candidate's supervisor.

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DEDICATION

I dedicate this research project to my family members for their love, support, patience, encouragement and understanding. They gave me the will and determination to complete my masters' degree.

ABSTRACT

Macro-Economic variables greatly influence the economic growth. They deal with the performance, structure, behaviour, and decision-making of an economy as a whole, rather than individual markets. Non-Performing Loans allow the government to reduce the size of transfers required to boost employment. The identification of needy firms and the tailoring of subsidies to each firm losses means that non-performing loans require much smaller transfers than either direct subsidies or low interest rate loans. The study thus sought to establish the effects of macro-economic variables on non-performing loans in commercial banks of Kenya. Taking a descriptive design, the study was based on a population of fifteen banks out of the existing forty four commercial banks for the period of ten years 2003-2012. Systematic random sampling was used to select the required samples from the population, where secondary data was used as obtained from CBK database as all banks are expected to file their annual financial results with CBK. The research was both quantitative and qualitative in nature. Analysis was done with aid of the statistical package for social sciences (SPSS) package. Descriptive statistics generated such as percentages, mean scores and proportions were presented in tables and figures. . It was found that a strong correlation existed between inflation and gross domestic product and current account deficit. GDP also correlated strongly with inflation and Money supply. CAD correlated strongly with inflation only while Money supply correlated strongly with GDP. The study recommends that for a great economic growth, there is need to mainstream these microeconomic variables for a better performing, structurally viable and for effective decision-making of the economy as a whole, rather than individual markets.

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LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
PD	-	Probability of Default
BIS	-	Banking Industry Structure
CAD	-	Current Account Deficit
CAR	-	Capital to Asset Ratio
CBK	-	Central Bank of Kenya
CBs	-	Commercial Banks
CRM	-	Credit Risk Management
DISRATE	-	Discount Rate
FIs	-	Financial Institutions
GDP	-	Gross Domestic Product
IMF	-	International Monetary fund
KCB	-	Kenya Commercial Bank
CPT	-	Consumer Price Index
NPLs	-	Non Performing Loans
NSE	-	Nairobi Stock Exchange
ROA	-	Rate of Return on Assets
SME	-	Small and Medium Enterprises
SPSS	-	Statistical Package for Social Sciences
SSA	-	Sub-Saharan Africa
TBILL	-	Treasury Bills
USA	-	United States of America
XRATVOL	-	Exchange Rate Volatility

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Non-performing loans can lead to efficiency problem for banking sector. It is found by a number of economists that failing banks tend to be located far from the most-efficient frontier (Berger and Humphrey,1992, Barr and Siems, 1994), DeYoung and Whalen, 1994, Wheelock and Wilson, 1994), because banks don't optimise their portfolio decisions by lending less than demanded. What's more, there are evidences that even among banks that do not fail, there is a negative relationship between the non-performing loans and performance efficiency (Kwan and Eisenbeis, 1994, Hughes and Moon, 1995, Resti,1995).

The phenomena that banks are reluctant to take new risks and commit new loans is described as the '"credit crunch" problem. Non-performing loans have been viewed to constitute one of the most important factors causing reluctance for the banks to provide credit. In a high NPL condition, banks increasingly tend to carry out internal consolidation to improve the asset quality rather than distributing credit. Also, the high level of NPLs requires banks to raise provision for loan loss that decreases the banks' revenue and reduces the funds for new lending. The cutback of loans impairs the corporate sector as they have difficulties in expanding their working capital, blocking their chances of resuming normal operation or growing. (Agung et al, 2001)

Krueger and Tornell (1999) support the credit crunch view and attribute the credit crunch in Mexico after the 1995 crisis partially to the bad loans. They point out that banks were burdened with credits of negative real value, thereby reducing the capacity of the banks in providing fresh fund for new projects. (Agung et al, 2001) using the macro and micro panel data analyses to study the existence of a credit crunch in Indonesia after the crisis. Both the macro and micro evidences show that there was a credit crunch, characterised by an excess demand for loans, starting to emerge in August 1997, one month after the contagion effects of the exchange rate turmoil in Thailand spreading to Indonesia. They investigate the relationship between the loan supply and real lending capacity, lending rates, real output, bank's capital ratio, and non-performing loan.

The results show that the coefficients on NPLs are negative and significant, which indicate that bank credit supply declines with the worsening of the NPLs problem. Westermann (2003) compares the cases of Germany after the credit boom of the late 1990s and Japan aftermath the bubble burst in early 1990s. He argues that even though the German banks were in a better condition than Japanese banks were, as the path of German's aggregate credit looks 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 mostly caused by a lack of supply. There must at least be some supply side changes that affect the aggregate credit, and differences only exist in the magnitude of the problem.

1.1.1 Macro-Economic Variables

Macroeconomic variables are those variables that are independent from the income levels. They are factors that greatly influence the economic growth. It deals with the

performance, structure, behaviour, and decision-making of an economy as a whole, rather than individual markets. These variables affect national income, output, consumption, unemployment, inflation, savings, investment, international trade and international finance (Olivier, 2011). Macroeconomic variables are indicators or main signposts signalling the current trends in the economy. Some of the macroeconomic variables include GDP, unemployment and inflation (Snowdon & Vane, 2005).

In contrast, microeconomics is primarily focused on the actions of individual agents, such as firms and consumers, and how their behaviour determines prices and quantities in specific markets. That is, microeconomics studies individual components, whereas macroeconomics studies the economy as a whole. Gross domestic product (GDP) is the sum of all productivity within a country for a given year. GDP includes all domestically manufactured products, all produce and livestock, all asset valuation increases, and intangible investment growth. Inflation is the rate at which prices increase over a period of time.

Smaller components, such as the consumer price index, fiscal policies, commercial banking, and access to credit all play a role in influencing inflation up or down. Unemployment measures the number of residents who are not presently employed but are actively seeking employment. Individual macroeconomic variables, such as banking, the consumer price index, and changes in government regulations, each influence multiple areas of economic growth (Mishkin, 2004).

1.1.2 Non-Performing Loans

A non-performing loan is a loan that is in default or close to being in default. Many loans become non-performing after being in default for 90 days, but this can depend on the contract terms. A loan is non-performing when payments of interest and principal are past due by 90 days or more or at least 90 days of interest payments 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 payments will be made in full (International Monetary Fund) NPLs allow the government to reduce the size of transfers required to boost employment. The identification of needy firms and the tailoring of subsidies to each firm losses means that non-performing loans require much smaller transfers than either direct subsidies or low interest rate loans (Dwight, 2004). NPLs also address a key concern of governments, the efficient allocation of scarce resources to maintain political support. Macro factors such as the real effective exchange rate and growth in real GDP impacts significantly on the level of NPLs. Whenever there is deterioration in the international competitiveness of the domestic economy this translates into higher NPLs. (Arkerlof, 1978)

NPLs can be measured by non-performing loans net of provision of capital. This is calculated by taking the value of non-performing loans (NPLs) less the value of specific loan provisions as the numerator of and capital as the denomination (Warue, 2012). Another method of measuring NPLs is by non-performing loans to total gross loans. This is calculated by using the value of NPLs as the numerator and the total value of the loan portfolio (including NPLs and before the deductions of specific loan loss provisions) as the denominator (IMF, 2004 & Banking Act, 2008)

$$NPL = \frac{\text{Outstanding principle balance of loans past due more than 90 days}}{\text{Outstanding principal balance of all loans}}$$

1.1.3 Effect of Macro-Economic Variables on NPLs

Bank performance usually depends on various internal and external determinants. The internal variables are commonly bank specific determinants and the external variables are related to the economic, financial and institutional environment (Naceur & Omran, 2011). Gaganis, Pasiouras, Doumpos, Zopounidis (2010) denote main criterions of banking stability: regulations, other banking and financial sector attributes, institutional environment, and macroeconomic conditions.

Figlewski, Frydman, and Liang (2012) affirm that a relevant macro factor should be one that has a broad impact on most firms' creditworthiness. These authors group the macroeconomic risk factors into three broad classes: factors related to general macroeconomic conditions (the unemployment rate, inflation, etc.); factors related to the direction in which the economy is moving (real GDP growth, the change in consumer sentiment, etc.); and, factors of financial market conditions (interest rates, stock market returns, etc.).

Festic, Kavkler, Repina (2011) affirm that changes in the macroeconomic environment translate into changes in the quality of a loan portfolio in banks. Favourable macroeconomic conditions coincide with better capabilities in loan repayment, a lower probability of default (PD), a lower share of non-performing loans to total loans (the NPL ratio), etc. Hamerle, Dartsch, Jobst, Plank (2011) also agree that credit risk is correlated with macroeconomic variables or risk factors. In economic downturns, default

probabilities increase and ratings deteriorate. The Gross Domestic Product (GDP) growth is considered as an important macro determinant of bank performance and allows for controlling business cycle fluctuations. During recessions the quality of loans declines and therefore companies borrow at higher margins, therefore a negative relationship between credit spread and economic growth is to be expected. Naceur and Omran (2011) found that prevailing business cycle conditions affect net interest margins. The GDP can significantly influence the borrower's ability to repay the loans as evidences suggest that higher GDP growth will have a negative correlation with current NPA (Thiagarajan, et al., 2011). According to Gaganis, Pasiouras, Doumpos, Zopounidis (2010) the GDP growth not only reduces nonperforming loans, but it can also delay banking crises due to pro-cyclicality.

Economic expansion will influence the default rate for the aggregate economy as demand for goods and services increase. Accordingly, increased profitability decreases the default rate. GDP turned out to be a significant factor in explaining default risk in various countries. This is consistent with Moody's report on historical default rates, in which they argue that cyclical indicators are highly correlated with the number of defaults, the number of credit rating downgrades and credit spreads. Regarding Debt-to-GDP ratio, debt of general government has a positive effect on default rate (Ali & Daly, 2010).

Deterioration in banks' loan quality is one of the major causes of financial fragility. Favorable macroeconomic conditions, such as sustained economic growth, low unemployment and interest rates, tend to be associated with a better quality of bank loans; under favorable economic circumstances, borrowers receive sufficient streams of income and meet their debt obligations more easily. Past experience shows that a rapid

build-up of bad loans plays a crucial role in banking crises. The global financial crisis and the subsequent recession in many developed countries have increased households' and firms' defaults, causing significant losses for banks.

1.1.4 Commercial Banks in Kenya

There are 43 licenced commercial banks in Kenya. A case study was done by Radha (2010). She discovered that the first three banks to be formed in Kenya were Barclays, Kenya Commercial Bank and Standard Chartered Bank. They are still the largest banks. Foreign banks in Kenya control 40.3% of the market share in terms of assets, with Barclays and Stan Chart controlling 30%.

She also pointed out that the banking systems in Sub-Saharan Africa (SSA) in general and Kenya in particular are shallow and fragile. This is reflected in low pending levels, high interest rate spreads, high levels of non-performing loans and several bank failures. The banking system in Kenya is highly segmented by size and ownership factors. She identified the four segments as foreign owned banks, government owned banks, large private owned banks and small private owned banks. (Radha, 2010). Commercial banks offer a wide range of corporate financial services that address the specific needs of private enterprise. They provide deposit, loan and trading facilities but will not service investment activities in financial markets. (Radha, 2010)

The term commercial banks are used to differentiate these banks from investment banks which are primarily engaged in the financial markets. Commercial banks are also differentiated from retail banks that cater for individual clients only.

In non-English speaking countries the term commercial bank is used interchangeably with the term trading bank (Radha, 2010). Commercial banks play a number of roles in the financial stability and cash flow of a countries private sector. They process payments through a variety of means including telegraphic transfer, internet banking and electronic funds transfers. Commercial banks issue bank checks and drafts, as well as accept money on term deposits.

Commercial banks also act as money lenders, by way of installment loans and overdrafts. Loan options include secured loans, unsecured loans and mortgage loans. A secured loan is one where the borrower provides a certain property or asset as collateral against the loan. The main condition of these loans is that if the loan remains unpaid, the bank has the right to use the property in any way they like to realize the outstanding amount. Unsecured loans have no collateral and therefore command higher interest rates. There are a variety of unsecured loans available and these include credit cars, credit facilities such as lines of credit, corporate bonds, and bank overdrafts. (Koch and Macdonald, 2000)

1.2 Research Problem

It is argued that the non-performing loans are one of the major causes of the economic stagnation problems. Each non-performing loan in the financial sector is viewed as an obverse mirror image of an ailing unprofitable enterprise. From this point of view, 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 sectors; thus, hindering the economic growth and impairing the economic efficiency (Arkerlof, 1978).

It is accepted that the quantity or percentage of non-performing loans (NPLs) is often associated with bank failures and financial crises in both developing and developed countries. (Caprio and Klingebiel, 2002). In spite of this apparent association between banking crises and nonperforming loans, the literature on the causes on non-performing loans has focused on the macroeconomic determinants and less on the influence of interest rate spread (Fofack, 2005).

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. This study, therefore sought to establish the relationship between interest rate and non-performing loan in commercial banks in Kenya.

Berger and Mester (2003) indicated that lower nonperforming loans improve productivity over time by reducing the costs associated with managing problem loans. From the above, none of the studies have talked about the effects other macro-economic variables which cause changes to the level of NPL's in commercial banks like; the GDP growth, Exchange rate and Treasury Bills.

A study conducted by the Central bank of Kenya (CBK, 2008) and the International Monetary Fund (IMF, 2007) indicates that the Kenyan commercial banks adopted the Credit Risk Management in 1999. However, the study did not investigate the effects macro- economic variables of in relation to the performance of non-performing loans.

Adano (2012) from university of Nairobi conducted a study to investigate the effect of credit information sharing on loan performance in commercial banks. The researcher used econometric analysis system. His findings were that loan performance as measured by loan default is negatively related to credit information sharing lending rate and total loans. Kenya's experience with the financial reform process shows a widening interest rate spread following interest rate liberalization. In addition, in the 1990s financial institutions witnessed declining profitability, non-performing loans and distress borrowing which hugely affected the commercial banks profitability (Ngugi, 2001).

A study done by Ochami (2004) from Moi University investigated on the assessment of factors that contribute to the level of performing loans on Housing Finance Company Kenya Limited. The researcher used tables and descriptive statistics. This study found out that credit risk management and the external environment were major contributors of NPLs. This study, therefore, seeks to investigate the effects of exchange rate volatility, banking development index, Treasury bill rate and GDP growth rate on NPL in commercial banks in Kenya. It will also address this question, what are the effects of macro-economic variables on non-performing loans in Kenyan commercial banks?

1.3 Objectives of the Study

The general objective of this study was to establish the effects of macro-economic variables on non-performing loan in commercial banks of Kenya. The specific objectives were;

i. To determine the effects of GDP growth rate on NPLs in commercial banks in Kenya.

ii. To determine the effect of inflation on NPLs in commercial banks (Kenya).

iii. To determine the effect of exchange rate volatility on NPLs in commercial banks of Kenya.

iv. To determine the effects of the Treasury bills on NPLs in CBS of Kenya.

v.   To determine the effect of Development Index on NPLs in CBs of Kenya.

1.4 Value of the Study

Owing to the importance of the banking sector on the economy, the study would be useful as a tool for persuading commercial banks to reduce their interest rates spread hence increasing the volume of their banking business. This increase in business transactions would compensate them for the reduced interest rates spread thus securing their profitability in the sector. The study would also focus on the possibility of interest rates spread being the best economic indicator to be utilized in attracting investors to the banking industry. Investors usually place their money on worthwhile ventures; hence banks offering attractive interest rates would be able to access a wide source of capital.

It is anticipated that the findings would influence effective formulation of economic policies by government statutory bodies and Central Bank of Kenya thus guiding the operations of commercial banks. If the spread is fully utilized, it would accelerate the rate of capital formation through loans and private investment thus boosting economic growth. This is especially by pursuing banks to raise the interest rates they pay on deposits by savers and lowering those they charge on loans to borrowers.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed and discussed the literature pertinent to the development of an instrument that explains the relationship between variables illustrated in conceptual framework of non- performing loans. It also discussed the concept of non- performing loans, the link between non-performing loans and GDP growth rate, inflation, treasury bills exchange rate volatility and banking development index.

2.2 Theoretical Review

If a bank's asset quality is inadequate (e.g. the loan amount becomes the amount to be collected), the bank will have to increase its bad debt losses as well as spend more resources on the collection of non-performing loans. This increase in non-performing loans in the banking industry can be due to poor credit policies.(Berger and DeYoung, 1997)

On the other hand, Berger and DeYoung (1997) also suggest that credit risk management in the banking firms might affect the non-performing loans in the banking industry. The bad management hypothesis was developed to explain this relationship. Berger and De Young (1997) argue that bad management of the banking firms will result in banks inefficiency and affects the process of granting loans. The banks' management might not thoroughly evaluate their customers' credit application due to their poor evaluation skills. In addition, the problem of asymmetric information between lenders and borrowers

further complicates the matter. Besides that, the management might not be efficient in managing loan portfolios. Consequently, this leads to lower credit ratings for the approved loans and high probability of default resulting in higher non-performing loans. Therefore, banks poor credit management might lead to higher non-performing loans.

2.2.1 Agency Theory

The agency theory views the organizations as a links of contracts among self-interested individuals rather than a unified, profit-maximizing entity. Agents need constant supervision and management, which raises agency costs or coordination costs. Information technology, by reducing the costs of acquiring and analyzing information, permits organizations to reduce overall management costs, and allows them to grow in revenues while shrinking the numbers of middle management and clerical workers (Laudon & Laudon, 1996).

Although this definition of agency theory views their associated costs as costs the company incurs, the customer also incurs agency costs in dealing with a company. For example, the interaction with sales people, dealing with employees in problem situations, or just looking for an employee to ask for assistance, involve agency costs for the customer. Agency costs do not necessarily have to constitute monetary costs, as the definition might assume.

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Agency theory extends the analysis of the firm to include separation of ownership and control, and managerial motivation. In the field of corporate risk management agency issues have been shown to influence managerial attitudes toward risk taking and hedging, Smith and Stulz (1985). Theory also explains a possible mismatch of interest between shareholders, 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 projects, Mayers and Smith (1987). Consequently, agency theory implies that defined hedging policies can have important influence on firm value, Fite and Pfleiderer (1995). The latter hypotheses are associated with financing structure, and give predictions similar to financial theory.

2.2.2 Deflation Theory

The first is deflation theory (Fisher, 1933), which suggested that when the debt bubble bursts the following sequence of events occurs; debt liquidation leading to distress selling and contraction of deposit currency, as bank loans are paid off. This contraction of deposits cause a fall in the level of prices, which leads to greater fall in the net worth of business, hence precipitating bankruptcies which leads the concerns running at a loss to make a reduction in output, in trade and in employment of labour. The cycles cause complicated disturbances in the rates of interest and a fall in the money value. The complicated disturbances described above can be summed as both external and internal forces (macro and micro factors) influencing state of over-indebtedness existing between, debtors or creditors or both which can compound to loan defaults.

2.2.3 Ownership Structure Theory

The third theory, ownership structure theory was pioneered by Jensen (1976) who integrated the elements of theory of property rights, (Ronald, 1937), the theory of agency, (Ross,1973, Mitnick,1974) and the theory of finance, (Minsky, 1974). The theory explains why highly regulated industries such as public utilities or banks have higher debt-equity ratios for equivalent levels of risk that the average non-regulated firm. Jensen (1976) argues that, "ownership structure" rather than "capital structure" is the crucial variables to be determined, not just the relative amounts of debt and equity but also the fraction of the equity held by the manager. Relating to this study, the Kenya banking industry is composed of various categories of banks based on different ownership structure with different percentage in shareholdings. Ownership structure theory is

appropriate for this study in that NLPs levels are investigated on basis of bank ownership structure dependence.

2.3 Empirical Literature Review

Ochami (2004) from Moi University investigated on the assessment of factors that contribute to the level of non-performing loans in Housing Finance Company of Kenya Limited. To achieve the objective of assessment, primary data of the research was collected by way of structured questionnaire from the staff of Housing Finance Company of Kenya Limited. The data was then analysed using tables and descriptive statistics; the deduction there from was used to assess the factors that contribute to the level of non loans in Housing Company Kenya Limited. The study found out from the assessment carried out, that credit risk management and the external environment were major contributors to the level of non-performing loans. The study did not test how macro – economic variables impact on the level of non-performing loans through a scientific model like multiple regression model.

The study done by Khemraj (2005) to ascertain the determinants of non-performing loans in the Guyanese banking sector using a panel dataset and a fixed effect model similar to Jimenez and Saurina (2005). Their empirical results show that GDP growth is inversely related to non-performing loans, suggesting that an improvement in the real economy translates into lower non-performing loans. They also found that banks which charge relatively higher interest rates and lend excessively are likely to incur higher levels of non-performing loans. In this study the researcher did not talk about the impact of other macro-economic variables to the level of NPLs.

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Chang (2006) examined non-performing loans (NPLs) and capital adequacy in banking structure and competition in entire commercial banking sector in Korean between (1976 – 2003) this paper analysed the impact of the transition from price-cap regulation (deposit/loan rate control) to rate-of-return regulation (ROA, NPLs and / or BIS ratio) on banking industry structure. A simple theoretical model of banking competition suggests that the relative dominance of the two objective functions under different regulatory regimes affects the market structure. Imposing more stringent rate-of-return regulation, whilst relaxing price-cap regulation, reduces the equilibrium number of banks.

Yixin (2006), looked into the non performing loans problem in Japanese commercial banks. Using the threshold regression technique, he found that some evidences that non-performing loans have non-linear negative effect on banks' lending behaviour. They found that non-performing loans don't deter banks risky lending. The prolonged economic stagnation distorts the generally economic performance. The researcher looked into the negative effects of NPL's and never mentioned measures of control of NPL's.

A study carried out by Mathews, Guo and Zhang (2007) on non-performing loans and productivity growth of the nationwide banks of China over the ten year (1997 to 2006). Using a bootstrap method for the Malmquist index estimates of productivity growth are constructed with appropriate confidence intervals. The paper adjusted for the quality of the output by accounting for the non-performing loans on the balance sheets and test for the robustness of the results by examining alternative sets of outputs. The paper found that average productivity of the Chinese banks improved modestly over this period. The researcher carried the study to determine how NPL's affect the productivity growth in

China banks but he did not consider the factors that determine the level of NPL's and the factors to hedge to manage the NPL's.

Waweru (2009) conducted a study to investigate the commercial banking crisis in Kenya, causes and remedies, according to the study many financial institutions that collapsed in Kenya since 1986 failed due to non-performing loans. Using a sample of 30 managers from the ten largest banks the study found that national economic downtown perceived as the most important external factor. Customer failure to disclose vital information during the loan application process was considered to be the main customer specific factor. The study further found that lack of an aggressive debt collection policy was perceived as the main bank specific factor, contributing to the loan performing debt problem in Kenya.

The researcher only considered only one customer's specific factor, that is, disclosure of vital information he did not consider factors like the Treasury Bills, Inflation or exchange rate volatility

Irungu (2009) carried out a study to investigate pressure of bad loans burden on Kenyan banks found that the continuing build up loans burden is causing stress in a number of Kenyan banks, prompting the International Monetary Fund (IMF) to demand increased vigilance from the regulator. The IMF used CAR which measures the level of capitalization against its total assets. The higher the ratio the more stable a bank is. Kenyan banks have a minimum of 12 percent CAR. High capital to asset ratio means an institution is better protected against operating losses than those with lower ratios. The researcher did not define clearly what causes these bad loans and if there is any strategy to reduce the pressure of bad loans.

Njanike (2009) investigated the impact of effective credit risk management on bank survival. The study sought to evaluate the extent to which failure to effectively manage credit risk led to Zimbabwe's banks' demise in 2003/2004 bank crisis. It also sought to establish other factors that led to the banking crisis and to outline the components of an effective credit risk management system. The study found that the failure to effectively manage credit risk contributed to a greater extent to the banking crisis. The research also identified poor corporate governance, inadequate risk management systems, ill planned expansion drives, chronic liquidity challenges, foreign currency shortages and diversion from core business to speculative non-banking activities as other factors that caused the crisis.

A study by Warue (2010) on the effects of bank specific and macroeconomic factors on nonperforming loans in commercial banks in Kenya. The main goal of this study was to investigate the link between NPLs and bank-specific and macroeconomic factors, and establish the extent to which these factors affect the occurrence of non-performing loans in commercial banks in Kenya. The study used panel econometrics approach employing both pooled (unbalanced) panel and fixed effect panel models. The study found evidence that per capita income was negative and significantly related to NPL levels across bank size categories. The study considered only macroeconomic factors like GDP and bank specific factors like bank structures but it did not factor in any other factor like inflation, GDP growth rate or Bank Development Index.

A study by Karim, Chan, Hassan (2010) on bank efficiency and non-performing loans investigated the relationship between non-performing loans and bank efficiency in Malaysia and Singapore. To achieve the objective, cost efficiency was estimated using

the stochastic cost frontier approach assuming normal-gamma efficiency distribution model proposed by Greene (1990). The cost efficiency scores were then used in the second stage Tobit simultaneous equation regression to determine the effect of non-performing loans between banks in Singapore and Malaysia although banks in Singapore exhibit a higher average cost efficiency score.   The Tobit simultaneous equation regression results clearly indicate that higher non-performing loans reduces cost efficiency. Likewise, lower cost efficiency increases non-performing loans. The results also support the hypothesis of bad management proposed by Berger and DeYong (1992) that poor management in the banking institutions results in bad quality loans, and therefore escalates the level of non-performing loans. The researcher did not clearly define the factors or the variables that determine the bank efficiency which lead to the level of non-performing loans.

Kalirai and Scheicher (2002) employs a simple linear regression to examine the interdependence of credit risk for Austrian banks and the state of the economy, portrayed by real gross domestic product, industrial production, consumer price inflation, money growth, interest rates, stock market indices, and other macroeconomic indicators. According to their estimates, during the period 1990–2001 the loan quality was influenced in particular by the short-term nominal interest rate, industrial production, the stock market return and a business confidence index.

Arpa, Giulini, Ittner, & Pauer (2001) assess the effects of macroeconomic developments on risk provisions (calculated as the ratio of total provisions for loans to the sum of total loans and total provisions for loans) of Austrian banks for the period 1990–1999. They use a single-equation time series model in which the dependent variable, i.e. banks' risk

provisions, is regressed on the growth rate real gross domestic product, real estate price developments and real interest rates. The estimated model delivers a good empirical fit and all explanatory variables are highly significant. In particular, risk provisions rise when real gross domestic product growth declines, real interest rates fall and real estate prices increase. However, the authors consider the last-mentioned result at odds with expectations, because one would expect the value of mortgages to increase that when real estate prices rise, thus reducing the likelihood of loan losses.

Finally, Shu (2002) uses a similar single-equation time series model to examine the impact of macroeconomic developments on loans quality in Honk Hong for the period 1995–2002. The results show that the ratio of bad loans to performing loans falls with higher real gross domestic product growth, higher consumer price inflation rate and higher property prices growth, whereas it rises with increases in nominal interest rates. The unemployment rate and performance of equity prices growth are not significant.

2.4 Summary of the Literature Review

The agency theory explains possible mismatch of interest between shareholders, management and the debt holders due to asymmetries in earning distribution which can result in the firm taking too much risk not engaging in positive net project. Mayers and Smith (1987).The financial economic theory (Millers & Modiglian, 1963) stipulates that hedging leads to lower volatility of cash flow and therefore lower volatility of the firm value.

From the above studies enough has not been done on the effects of macro –economic variables on Nonperforming loans in Kenyan commercial banks. The researcher therefore

investigated the effects of macro-economic variables on Non-performing loans in Kenyan commercial banks and targeted the inflation, Exchange rate volatility, Banking Development Index Treasury bills and GDP growth rate. The researcher tested on how each of these variables are related to the level of non-performing loans in Kenyan commercial banks. None of the above researchers have done enough study of this area.

CHAPTER THREE

RESEARCH METHODOLGY

3.1 Introduction

This section discusses the research design, target population, research instruments, data collection and data analysis procedures that were used in this study. It discusses the methodology used to analyze the impact of investment banking development on economic growth of emerging markets.

3.2 Research Design

This study was a descriptive case study. According to Schinler and Coopers (2004) descriptive studies are more formalized and typically structured with clearly stated hypotheses or investigative questions. It serves a variety of research objectives such as descriptions of phenomenon or characteristics associated with a subject population, estimates of proportions of a population that have these characteristics and discovery of associations among different variables.

3.3 Data Collection

Secondary data was used in this study. This was obtained from CBK database as all banks are expected to file their annual financial results with CBK. CBK also collects data macroeconomic performance as pursuant to its monetary policy role. The data collected included: Gross Domestic Product measured as the real GDP value generated within the year, inflation rate as calculated by the annual percentage change in the CPI, exchange rate

volatility calculated as the standard deviation of the percentage change in the real US$/Ksh exchange rate, Treasury Bill rate, total non-performance loans in Kenya and Banking Development index.

3.4 Data Analysis

The research was both quantitative and qualitative in nature. This implies that both descriptive statistics and inferential statistics were employed. After collected the data, it was checked for completeness ready for analysis. Moreover at test significance level of 0.05 was used. Analysis was done with aid of the statistical package for social sciences (SPSS) package. Descriptive statistics generated such as percentages, mean scores and proportions were presented in tables and figures.

3.4.1 Model Specification

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$

Y- Is the dependent variable (Non Performing Loans)

β_0 - the constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5,$ – are regression coefficients or change induced in Y by each X variable
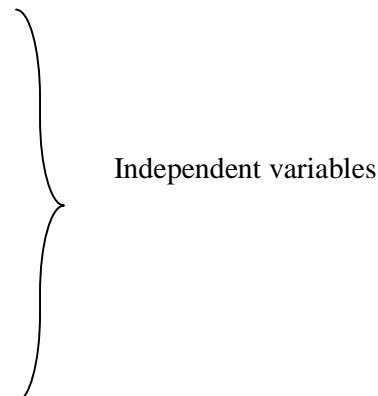
X_1 – Inflation

X_2 – Exchange rate volatility

X_3 – Banking Development index   Independent variables

X_4 – Treasury Bill rate

X_5 – GDP growth rate

e – error term

CHAPTER FOUR

# DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data findings on the effects of macro-economic variables on non-performing loans of Kenyan commercial banks. Data was collected on macroeconomic indicators: inflation, exchange rate volatility, Banking Development Index, Treasury Bill Rate, GDP growth rate and NPL for a 10 year period (2003 to 2012) from CBK.

4.2 Data Analysis and Presentation

4.2.1 Descriptive Statistics

The major macro-economic variables, inflation, Money supply, Treasury bill rate, Gross Domestic Product (GDP) and Current Account Deficit (CAD) were tested for correlation. Strong correlation existed between inflation and gross domestic product and current account deficit. GDP also correlated strongly with inflation and Money supply. CAD correlated strongly with inflation only while Money supply correlated strongly with GDP. To avoid multicollinearity, GDP and inflation rates were dropped from the Model.

Figure 4.1: Non-Performing Loan Ratio
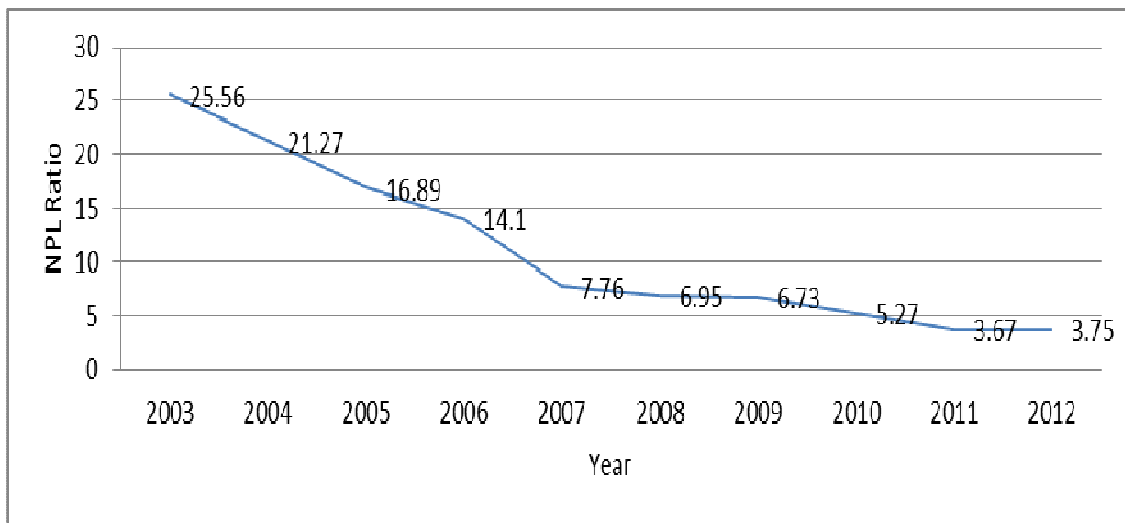
From the findings shown in the above figure, the study revealed that there was a countinous decrease in level of non perfoming loans ratio from 25.56% in year 2003 to 3.75% in year 2012. This shows that there was a continous decrease in the non perfoming loan ratio.

Figure 4.2 : GDP Growth Rate
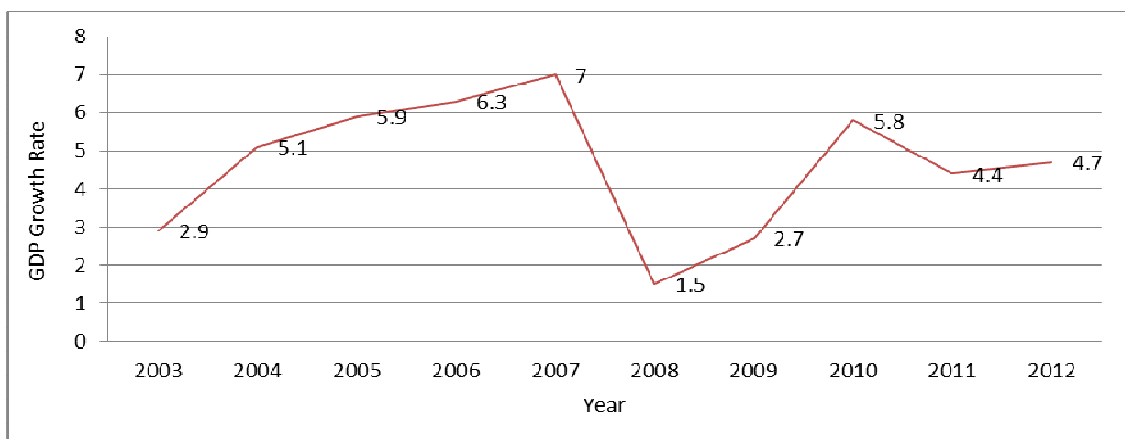
From the fidnings on the GDP growth rate , the study found that there was a continous increase from 2.9% in year 2003 to 7% in years 2007 there was notable decraese in year

2008 to 1.5 which could be attributed to post election violence. From year 2008 to 2010 there was an increase in GDP growth rate from 1.5% to 5.8% due to political stability. There was a decrease in GDP growth rate between 2010 to 2012 from 5.8% – 4.7% contributed by political campaigns of 2012 elections.

Figure 4.3: Inflation trends in Kenya
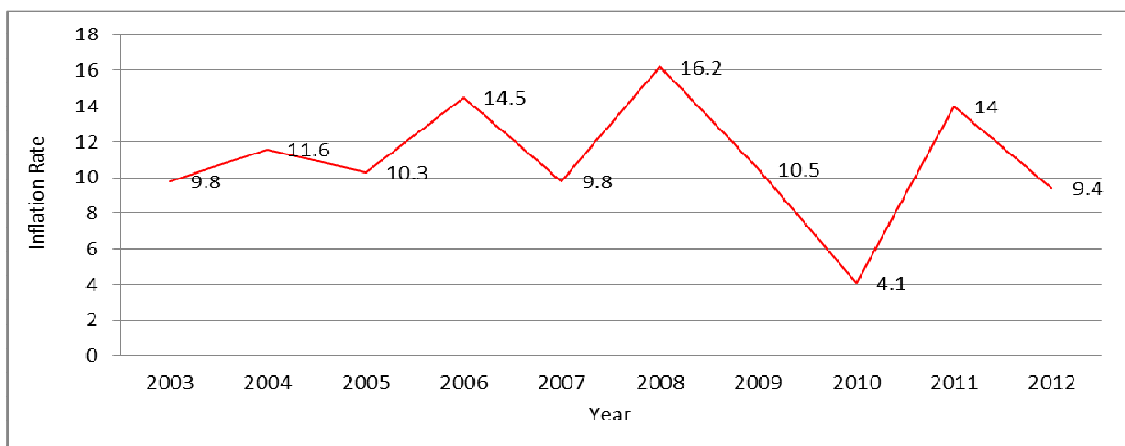
From the findings shown in figure above on change in inflation, there was variation in the infaltion value through the study period .The highest value 16.2% in years 2008 contributed by post-election violence.

Figure 4.4: Treasury Bills

27
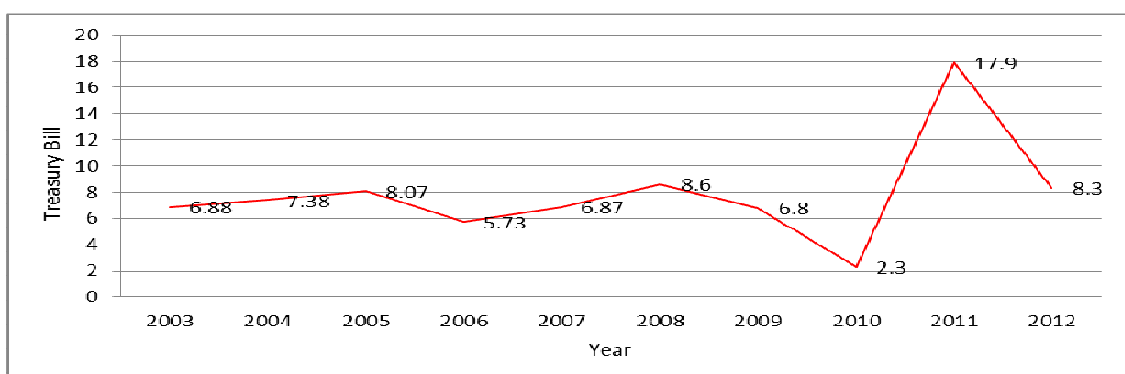
The average annual 91 day Treasury bill rate was 8.6% in 2008. The rate fell to 6.8% in 2009 and further down to 2.3% in 2010. In 2011 the rate increased markedly to 17.9% before reducing to 8.3% in 2012. The huge increase in 2011 is attributed to increased local borrowing by the Government to reduce inflation. However, in 2012, the rate reduced to 8.3% following the ease in inflation.

Figure 4.5: Exchange Rate Volatility
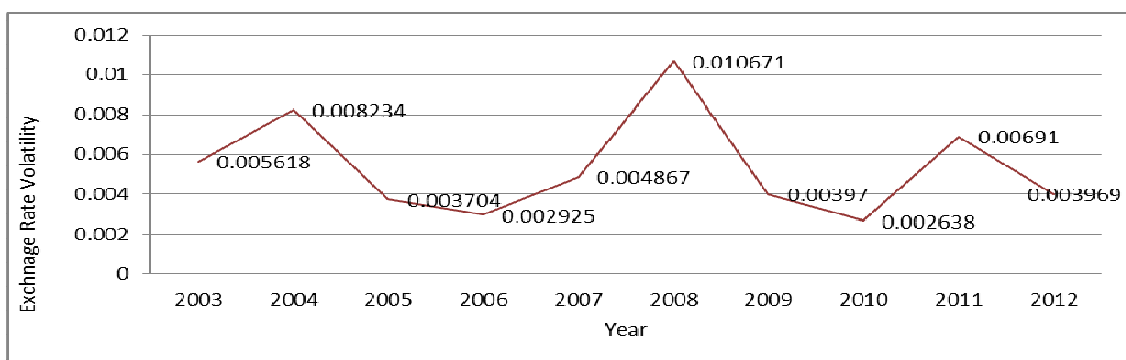
From the findings on the exchange volatility, the study found that there was various changes in the value of our currency ranging between 0.005618in year 2003, 0.010671 in years 2008 and 0.003969 in year 2012.

Figure 4.6: Banking Sector Development Index
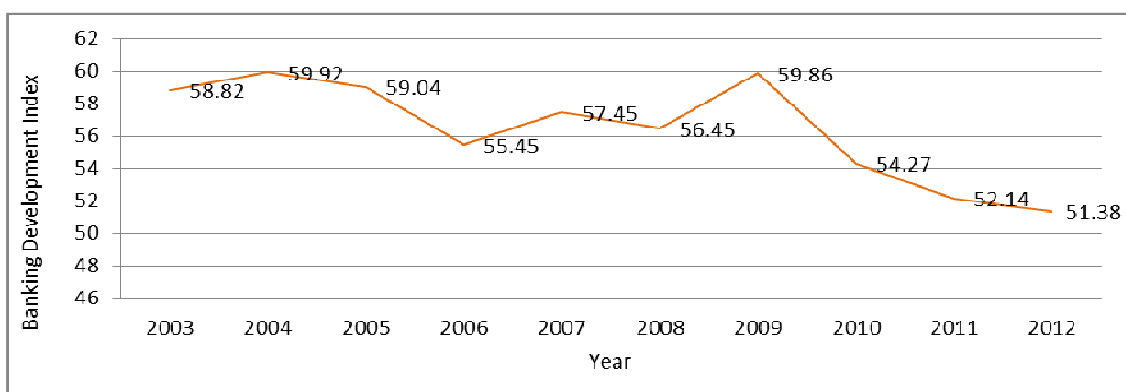
The study established that the mean of nonperforming loan ratio was 11.195 with a standard deviation of 7.786. This means that within the period (2003 – 2012) for every one shilling advanced in loans, Ksh0.1 would become delinquent. Within the period, the average GDP growth rate was 4.63, and inflation rate was 11.02. Average exchange rate volatility was 0.0053 with a standard deviation of 0.0025. This shows that the foreign exchange market as proxied by the Kenyan Shilling to the base of US Dollar was moderately volatile. The average treasury bill rate was 7.9%.

Table 4.1: Descriptive Statistics

Variable	Mean	Standard Deviation
NPL Ratio	11.195	7.786
GDP Growth Rate	4.63	1.770
Inflation	11.02	3.374
Treasury Bills	7.883	3.949
Exchange Rate Volatility	0.005351	0.002563
Banking Development Index	56.478	3.109

The study conducted inferential analysis using Pearson correlation coefficient, ANOVA and regression analysis. ANOVA was used to test the hypothesis that the means among independent (macroeconomic variables) and dependent variables (non-performing loans) are equal, therefore shows the significance of the association between the two. Correlation coefficient was used to test linear dependence (association) between loan delinquency and the individual independent variable (GDP growth rate, inflation, treasury bills, exchange rate volatility, banking development index). Regression analysis was used

to measure the relationship between individual independent variables and the dependent

variable when they act together.

4.2.2 Correlation Analysis

Table 4.2: Correlation Matrix

		NPL Ratio	GDP Growth Rate	Inflation	Treasury Bills	Exchange Rate Volatility	Banking Development Index
NPL Ratio	Pearson Correlation	1					
	Sig. (2-tailed)						
GDP Growth Rate	Pearson Correlation	.460*	1				
	Sig. (2-tailed)	.045					
Inflation	Pearson Correlation	-.640**	-.367	1			
	Sig. (2-tailed)	.002	.297				
Treasury Bills	Pearson Correlation	-.234*	-.210	.556	1		
	Sig. (2-tailed)	.015	.560	.095			
Exchange Rate Volatility	Pearson Correlation	.491*	-.588	.625	.430	1	
	Sig. (2-tailed)	.043	.074	.054	.215		
Banking Development index	Pearson Correlation	.667*	-.141	.013	-.356	.137	1
	Sig. (2-tailed)	.035	.698	.971	.313	.706	
	N	10	10	10	10	10	10

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

*. Correlation is significant at the 0.05 level (2-tailed).

The study used correlation to establish the relationship between macroeconomic variables

and nonperforming loans. Pearson Correlation analysis was used to achieve this end at

95% (α = 0.05) confidence level. Table 4.2 shows that at 95% confidence level, there

were good, significant and positive correlation between nonperforming loans and: GDP growth rate (R = .460; p = .045), exchange rate volatility (R = .491; p = .043), and banking sector development index (R= .667; p = .035). There was there was good, significant and negative correlation between nonperforming loans and: inflation rate (R = -.640; p = .002), and moderate significant and negative correlation between nonperforming loans and treasury bills (R = -.234; p = .015).

4.2.3 Regression Analysis

Table 4.3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.812[a]	.660	.615	8.58175	1.871

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.615 an indication that there was variation of 61.5% on non-performing ratio due to changes in inflation , Exchange rate volatility, Banking Development index, Treasury Bill rate and GDP growth rate at 95% confidence interval . This shows that 61.5% changes in Non-performing loans could be accounted for by changes in inflation , Exchange rate volatility, Banking Development index, Treasury Bill rate and GDP growth rate. R is the correlation coefficient which shows the relationship between the study variables. From the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.812. The study also used Durbin Watson (DW) test to check that the residuals of the models were not auto correlated since independence of the residuals is one of the basic

hypotheses of regression analysis. Being that the DW statistics were close to the prescribed value of 2.0 (1.871) for residual independence, it can be concluded that there was no autocorrelation.

Table 4.4: Analysis of Variances

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Regression	251.060	5	50.212	3.682	.036b
Residual	294.586	4	73.646		
Total	**545.646**	**9**			

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0.036 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value (2.262< 3.682) an indication that inflation , Exchange rate volatility, Banking Development index, Treasury Bill rate and GDP growth rate were significantly influencing non performing ratio. The significance value was less than 0.05 an indication that the model was statistically significant.

Table 4.5: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-88.667	62.809		-1.412	.231
GDP Growth Rate	.640	2.006	.145	.319	.016
Inflation	.147	1.197	.064	.122	.008
Treasury Bills	-.048	.995	-.025	-.049	.014
Exchange Rate Volatility	169.312	1692.533	.056	.100	.025
Banking Development Index	1.678	1.057	.670	1.588	.018

From the data in the above table the established regression equation was

NPL = -88.667 + 0.640*GDP + 0.147*INF - 0.048*TB + 169.312*ERV + 1.678*BSD

From the above regression equation it was revealed that holding inflation , Exchange rate volatility, Banking Development index, Treasury Bill rate and GDP growth rate to a constant zero , non performing ratio in Kenya would be -88.667, a unit increase in GDP growth rate would lead to increase in non-performing ratio by a factors of 0.640, unit increase in inflation would lead to increase in non-performing ratio by factors of 0.147, a unit increase in treasury bills would lead to decrease in non-performing ratio by a factor of 0.048, unit increase in exchange rate volatility would lead to increase in non-performing ratio by a factors of 169.312 and a unit increase in banking development index would lead to increase in non-performing ratio by a factor of 1.678.

4.3 Summary of Findings and Interpretation

The macroeconomic determinants of spreads included in this paper account for the impacts of macroeconomic instability and the macro-policy environment on banking sector NPLs. Similar to most studies in this area, the inflation rate for each country has been included, and has been calculated as the annual percentage change in the CPI. This variable *(INFL)* is an indicator of the cost of doing business in an economy, and it is expected to be positively correlated with NPLs, particularly in developing countries where inflation is high and variable (Chirwa and Mlachila, 2004). Macroeconomic instability is proxied by the variable – exchange rate volatility *(XRATVOL)*. This variable reflects the changes in interest and inflation rates in countries with freely-floating exchange rates. Exchange rate volatility for each year is calculated as the standard deviation of the percentage change in the real US$ exchange rate for the three preceding years. Because increased macroeconomic instability heightens the risk faced by commercial banks, *XRATVOL* is expected to be positively correlated with NPLs, as the banking sector increases its spreads to protect against the increased risk.

The macro-policy environment is captured in our model through the use of three variables not commonly used in similar studies. The first proxies the extent of government dependence on the domestic banking sector for the financing of its fiscal deficit. This variable *(CROWD)* measures for the entire banking sector, public sector borrowing as a percentage of total loans. Robinson (2002), notes that 'the level of government borrowing and its influence on money and credit markets is… an element of macroeconomic policy that imposes constraints on the flexibility on interest rates.' CROWD is therefore expected to be positively correlated with NPLs, as governments'

heavy reliance on domestic banking sectors for deficit financing increases competition for funds and causes interest rates to rise. The second macro-policy indictor, the discount rate *(DISRATE)*, is defined as the cost faced by commercial banks when borrowing from central banks. Although declining in popularity, the discount rate is still used by some countries as a monetary policy instrument. Even more importantly, it is expected to be positively correlated with NPLs, as it increases the commercial banks' cost of funds, which may be passed on to customers through higher spreads. Finally, the Treasury Bill rate *(TBILL)* is included. It is generally regarded as an indicator of the interest rate policy being pursued by the government, and a benchmark for the rates charged by commercial banks. This variable is therefore also expected to be positively correlated with NPLs because lower Treasury Bill rates would lead to lower interest rate spreads and vice versa. Further, the impact of government fiscal activities on NPLs is captured by with the use ration of government deficits to GDP (*DEFGDP).*

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the research findings. The implications from the findings and areas for further research are also presented. The findings from the study are presented in comparison to what other scholars have said as noted under literature review.

5.2 Summary of Findings

The study provided two types of data analysis; namely descriptive analysis and inferential analysis. The descriptive analysis helps the study to describe the relevant aspects of the phenomena under consideration and provide detailed information about each relevant variable. For the inferential analysis, the study used the Pearson correlation, the panel data regression analysis and the Chi-square statistics.

The study first evaluated the descriptive statistics for non-performing loans of commercial banks in Kenya was also established, whereby the mean of nonperforming loan ratio was 11.195 with a standard deviation of 7.786. This means that within the period (2003 – 2012) for every one shilling advanced in loans, Ksh0.1 would become delinquent. Within the period, the average GDP growth rate was 4.63, and inflation rate was 11.02. Average exchange rate volatility was 0.0053 with a standard deviation of 0.0025. This shows that the foreign exchange market as proxied by the Kenyan Shilling to the base of US Dollar was moderately volatile.

The study then evaluated the correlation of the macro-economic variables, that is, inflation, Money supply, Treasury bill rate, Gross Domestic Product (GDP) and Current

Account Deficit (CAD). Strong correlation existed between inflation and gross domestic product and current account deficit. GDP also correlated strongly with inflation and Money supply. CAD correlated strongly with inflation only while Money supply correlated strongly with GDP. To avoid multicollinearity, GDP and inflation rates were dropped from the Model.

At 95% confidence level, there were good, significant and positive correlation between nonperforming loans and: GDP growth rate ($R = .460$; $p = .045$), exchange rate volatility ($R = .491$; $p = .043$), and banking sector development index ($R = .667$; $p = .035$). There was there was good, significant and negative correlation between nonperforming loans and: inflation rate ($R = -.640$; $p = .002$), and moderate significant and negative correlation between nonperforming loans and treasury bills ($R = -.234$; $p = .015$).

In determining the relationship between dependent (nonperforming loans) and independent variables, the study used multiple linear regression analysis. Results showed that regression model produces a correlation coefficient value of 0.678. From the determination coefficients, it can be noted that there is a moderately strong relationship between dependent and independent variables as the R square value of 0.460 is produced and standardized to 0.315. Thus, the macroeconomic variables used in the study accounts for 31.5% of the total variations in nonperforming loans in commercial banks in Kenya.

Analysis of Variance (ANOVA) was used to make simultaneous comparisons between two or more means; thus, testing whether a significant relation exists between variables (dependent and independent variables). The results shows that when banking development index, inflation, GDP growth rate, treasury bills and exchange rate volatility

are zero, the nonperforming loan ratio would be -88.7%. This means that there would be nonperforming loans. However, this state is hypothetical.

5.3 Conclusion

The study has investigated the relationship between macro-economic variables on non-performing loans of commercial banks in Kenya. Data have been analyzed by applying both descriptive and inferential statistics for a 10 year period (2003 to 2012. It was found that a strong correlation existed between inflation and gross domestic product and current account deficit. GDP also correlated strongly with inflation and Money supply. CAD correlated strongly with inflation only while Money supply correlated strongly with GDP. A good, significant and positive correlation was also found between nonperforming loans and GDP growth rate, exchange rate volatility, and banking sector development index. There was good, significant and negative correlation between nonperforming loans and: inflation rate and moderate significant and negative correlation between nonperforming loans and treasury bills.

5.4 Recommendations

The study recommends that for a great economic growth, there is need to mainstream these microeconomic variables for a better performing, structurally viable and for effective decision-making of the economy as a whole, rather than individual markets. These variables affect national income, output, consumption, unemployment, inflation, savings, investment, international trade and international finance. Macroeconomic variables are indicators or main signposts signaling the current trends in the economy. Some of the macroeconomic variables include GDP, unemployment and inflation.

5.5 Limitations of the study

One of the limitations of the study is that the study was based on the sample area .The area of the study was only limited to Kenya. It could be better if the area of the study was extended over a range of countries the best of all being different countries of different continent. Another limitation of the study was that the time limit. The time to carry out the study was too short. Another limitation is that the researcher used secondary data. It would be better if he used both primary and secondary for the study to give better findings.

The study was strictly conducted on commercial banks only and would provide a more broad analysis if the study included mortgage firms, micro-finance institutions and Saccos since they all operate in the same economy. Credit reporting is currently limited to negative information only. The regulations only provide for mandatory reporting of negative information such as loan default cheques and bankruptcy. The finding of this study was therefore limited to the effect of negative information sharing as opposed to full file reporting.

Financial aspect had some limiting factors too. The data required for my study was secondary data which the researcher had to buy it from the Nairobi Stock Exchange. However, the primary and typing of the research project was too much hence it required alot of finance which to me it was a limitation.

5.6 Suggestion of further Research

The ever increasing levels of non-performing loans in commercial banks in Kenya could be attributed by the presence of moral hazards (where due to low levels of integrity, borrowers accept credit for which they are not willing to repay).Further research should be done to find out the mechanisms to be put in place to address the issue of the moral hazards.

The researcher recommends further research to investigate the impact of credit information sharing on lending interest rate. Future researcher can also investigate the effect of bank specific factors like the level of income, the collateral, the loan purpose and the age bracket of the borrowers on the level of nonperforming loans in commercial banks in Kenya. The effect of credit rationing on the level of non-performing loans in the banking sector in Kenya. The concept of credit rationing in banks describes a situation whereby banks limit the supply of loans though they have sufficient funds to lend out and supply of loans has not outstripped the demands of the prospective borrowers.

A further study should be carried out to investigate the relationship between management practices for non-performing loans and the level of non-performing loans for the commercial banks in Kenya.

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APPENDICES

APPENDIX I: DATASET 2003 - 2012

Year	NPL Ratio	GDP Growth Rate	Inflation	Treasury Bills	Exchange Rate Volatility	Banking Development index
2003	25.56	2.9	9.8	6.88	0.005618	58.82
2004	21.27	5.1	11.6	7.38	0.008234	59.92
2005	16.89	5.9	10.3	8.07	0.003704	59.04
2006	14.1	6.3	14.5	5.73	0.002925	55.45
2007	7.76	7	9.8	6.87	0.004867	57.45
2008	6.95	1.5	16.2	8.6	0.010671	56.45
2009	6.73	2.7	10.5	6.8	0.00397	59.86
2010	5.27	5.8	4.1	2.3	0.002638	54.27
2011	3.67	4.4	14	17.9	0.00691	52.14
2012	3.75	4.7	9.4	8.3	0.003969	51.38

APPENDIX II: LIST OF BANKS

No.	Name	No.	Bank
1	Kenya Commercial Bank Ltd	23	African Banking Corporation
2	Standard Chartered	24	Imperial Bank Limited
3	Barclays Bank of Kenya Limited	25	NIC Bank
4	Bank of India	26	Giro Bank Limited
5	Bank of Baroda	27	Ecobank Kenya Ltd
6	Commercial Bank of Africa Ltd	28	Equatorial Commercial Bank Ltd
7	Habib Bank Ltd	29	Paramount Universal Bank Ltd
8	Central Bank of Kenya	30	Jamii Bora Bank Ltd
9	Prime Bank Limited	31	Fina bank
10	Co-operative Bank	32	Victoria Commercial Bank Ltd
11	National Bank of Kenya	33	Guardian Bank
12	Oriental Commercial Bank	34	Investments and Mortgages
13	Citibank N.A.	35	Development Bank of Kenya
14	Habib Bank A.G.	36	Fidelity Commercial Bank
15	Middle East Bank (K) Limited	37	Housing Finance
16	Bank of Africa Kenya Ltd	38	Diamond Trust Bank
17	Dubai Bank of Kenya Ltd	39	K.Rep Bank
18	Consolidated Bank of Kenya Ltd	40	Equity Bank
19	Credit Bank Ltd	41	Family Bank Ltd
20	Trans-National Bank	42	Gulf Bank
21	Chase bank (K) Limited	43	First Community Bank
22	CFC Stanbic	44	UBA