AN ASSESSMENT OF THE EFFECT OF INFLATION ON LOAN REPAYMENT AMONG COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

I declare that this project is my original work and has not been submitted for an award of a degree in any other University for examination/academic purposes.

SIGNATURE…………………………… DATE ……………………………..

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

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DEDICATION

I dedicate this research project to my family for their unwavering support, love and encouragement that they have given me since the beginning of this study.

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ABSTRACT

The macroeconomic environment is viewed as a critical driver for non-performing loans. In this regard, the main goal of this study was to determine the Effects of inflation as a macroeconomic variable on loan repayment in commercial banks in the Kenyan banking system. The dependent variable under investigation was nonperforming loans while independent variable was inflation. The study targeted 10 (ten) commercial banks listed at the Nairobi Securities Exchange (NSE) out of a total population of about 48 commercial banks in the financial sector in Kenya. The study used primary data source mainly from published financial statements for a span of five years (2008-2012). On the other hand the study relied on the Kenya National Bureau of Statistics to obtain inflation rates for the periods covered by the study. The study used an ordinary least square (OLS) regression equation and tested the values at 5% significance level and found evidence that Inflation was found to be positively and significantly related to credit risk (r-value 0.855). The study recommends that commercial banks managers employ a more flexible approach to dealing with the macroeconomic factors: such as with inflation, an increase in the loan loss provision is recommended when there exists high inflation and a decrease in loan loss provision during periods of low inflation rate. A reducing balance approach on loan amounts is also recommended while also incorporating a fixed lending rate approach on loans of huge amounts that span a number of years.

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ABBREVIATIONS

CBK	Central Bank of Kenya
CESEE	Central, Eastern and South-Eastern Europe
CMA	Capital Markets Authority
GDP	Gross Domestic Product
KBA	Kenya Bankers Association
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya national Bureau of statistics
MFIs	Micro Finance Institutions
NPAs	Non Performing Assets
NPLs	Non-Performing Loans
NSE	Nairobi Securities Exchange
OLS	Ordinary Least Square
QTM	Quantity Theory of Money
SACCO	Savings and Credit Cooperative Societies
SSEs	Small Scale Enterprises
WEO	World Economic Outlook

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Inflation is a continuous increase in the price level, sustained over a period of time. Inflation may be caused by a continuous increase in the supply of money, a continuous decrease in the demand for money, or a combination of the two. Government might very well and often increase the money supply continuously (Jalil, 2011). If the demand for money were fixed, then the price level would grow at the same rate as money supply. Rising real incomes usually cause the demand for money to rise over time. This tempers the inflationary effect of money supply growth, and so the price level typically grows more slowly than the money supply. Even so, a higher rate of money supply growth is expected to cause a higher rate of inflation (Jalil, 2011).

Mishkin (2000) explained that with inflation lenders or depositors who pay a fixed rate of interest on loans or deposits will lose purchasing power from their interest earnings while their borrowers benefit. A positive effect of inflation is derived from debt relief where debtors who have debts with a fixed nominal rate of interest will see a reduction in the real interest rate as the inflation rate rises. The "real" interest on a loan is the nominal rate minus the inflation rate. Therefore if one takes a loan, with an interest rate of 15% and the inflation rate is at 5% the real interest rate that one will pay for the loan is 10%. Banks and other lenders adjust for this inflation risk either by including an inflation premium in the costs of lending the money by creating a higher initial stated interest rate or by selling the interest at a variable rate.

According to Clayton & Joseph (1995), businesses adjust their spending habits since business loans are being charged higher interest rates forcing factories to reduce cost of borrowing. Currently a number of factories have laid off workers as a result of decline in the goods/services being offered. If businesses do not do so, it means that loans acquired will be costly and some may end up being taken over by the banks as they are not in a position to service their loans. Though the cause of inflation is still a dispute among economist, the common belief is that it occurs when the supply of money increases more rapidly than the demand for money. This might occur within a single country, in a global economy, it can also spill over one country to another.

The financial sector plays a critical role in the development process of every country. In Kenya's Vision 2030, for example, the sector is expected to drive high levels of savings and financing of Kenya's investment needs, (Kippra, 2013). As at 2013, the sector comprised 44 commercial banks, 1 mortgage finance company, 5 representative offices of foreign banks, 8 deposit taking microfinance institutions, 112 foreign exchange bureaus, 2 credit reference bureaus, 130 Savings and Credit Cooperative Societies (SACCOs) licensed as deposit takers (Kippra, 2013).

Kenya has paid dearly in the past following the collapse of more than ten banks in mid-1990's that was mainly attributed to non-performance of loans due to high rates of interest fuelled by inflation. The high non-performance loans ushered a regime of high lending rates, which further exacerbated the levels of default. As a result, the Kenyan banking industry experienced unprecedented instability, (Ndung'u, 2014). Although the instability was not caused solely by the high inflation rates as it could be attributed to other factors such as information asymmetry, policy lending by state owned banks,

politics among other factors, inflation was a key factor in the non-performance of loans (Ndung'u, 2014). The objective of this study is to determine whether there is a relationship between inflation and loan repayment.

1.1.1 Inflation

Inflation is defined as a time of generally rising prices for goods and factors of production. In any economy, inflation is undesirable because of the specific economic costs associated with inflation. First, when inflation is high, currency and noninterest-bearing checking accounts are undesirable because they are constantly declining in purchasing power. Secondly, there are tax distortions, for example, when inflation rages, the actual value of these deductions are much less than it should actually be (Ludi and Ground, 2006). When inflation hits, some people gain and some lose for example people whose pensions are fixed in shilling terms lose as the value of their future earnings decreases.

Inflation rate is defined as the rate at which prices generally increase (Brealey et al., 2001). Inflation is intensely undesired and a high rate of inflation is considered as one of the most important problems that may face a country. Inflation, always and everywhere is caused by an increase in the amount of money in supply. Credit poses critical economic problems of our time and inflation management is one of the underlying facets of any economic setups. In a modern economy inflation is one aspect that every country and government has to contend with. This makes it not only the dreaded, but also misunderstood economic phenomena, (Brealey *et al*., 2001).

Milton (1992) famously proclaimed, "Inflation is always and everywhere a monetary phenomenon". What he meant was that sustained inflation has historically always been due to sustained money supply growth, not to sustained velocity growth or sustained negative growth in real income. The occurrence of inflation does not always imply the downfall of an economy not unless a country failed to put up measures to protect itself from the effects. Inflation affects the economy as a whole and mostly in a negative way. Hyper inflation in the words of Keynes is the full inflation in the sense that it is the final stage of inflation (Keynes, 1924).

Karl & Ray (1989), debated that if people are not fully informed on what is happening with the economy during inflation, or do not understand what is happening to prices in general, they make mistakes in their business dealings and these can lead to misallocation of resources. With loan charges increasing, loan repayment is adversely affected. During times of inflation, the money at hand for disposal purposes is much lesser with the increase in prices, so there is likelihood some of the borrowers will be experiencing difficulties repaying their loans.

Loans and advances to customers by banks vary in size from what may be considered to be micro to macro financing. Some have been personal while others have been institutional loans. In both cases, it has been observed by banks that there is a failure rate with regards to repayments. This does not however, mean that all lending on the part of banks has been bad, (McGoven, 1998). A lot of money is lost by financial institutions due to non-servicing of loan and overdrafts that individuals and institutions obtain from banks. This reduces the net worth of a country as many lending entities are denied their duly earned income, (Chabota, 2007).

In Kenya, statistics shows that inflation has been on the rise during the past years hitting a high of 29.4% in November 2008, up from 28.4% in October of the same year. However the latest statistics show that inflation rate has been declining over the past 12 months. The overall inflation rate has dropped to 6.86% in February 2014 from 7.21% recorded in January 2013 (KNBS, 2014). Lending has become quite costly as lenders have resulted to increasing interest rate as compensation for the decrease in the purchasing power of money they will be repaid in the future. The inflation trends in Kenya have been documented and the trends show that the 1990's were characterized by high rates of inflation. These are the same years that the industry exhibited very high instability and saw the collapse of several banks. This period was characterized by high inflation translating into high interest rates, high credit squeeze as banks cashed in on high Treasury bill rates and high loan repayment defaults.

Whereas it cannot be disputed that there is no full comprehension of inflation, it remains a threat to all economies in the world from the developing nations to the super powers. This has led to development of ways and policies to control inflation, (Brealey et al., 2001). In periods of inflation there is a general increase in the amount of money in supply. People have more money to offer for goods (Hazlitt, 1960) in the event that the quantity of goods supplied does increase as much as the increase of money, the price of goods will generally go up. This is because each individual unit currency becomes less valuable as there are more unit currencies. The price of goods will rise not because there is a scarce of good but because there is surplus money available.

1.1.2 Loan Repayment

Repayment performance refers to the total loans paid on time as stated in the loan agreement contract. Godquin (2004) defines repayment performance in terms of binary variable; based on an arbitrary definition of what constitutes repaying "on time" (a given maximum "grace period" is allowed). Guttman (2007) measures repayment performance based on the degree of arrears. While, the term delinquency is defined as a failure to meet the repayment obligations at the date complete repayment was promised (Nannyonga, 2000) and delinquent loans are loans that have been written off by an MFI (Norell, 2001).

According to Kassim & Rahman (2008), the causes of default risk are mainly from lack of post-disbursement supervision which leads to moral hazard and lack of training on basic business skills and knowledge. They further argue that the absence of post-disbursement supervision regarding how funds are being used, can lead to a situation where a borrower tends to use the funds for other purposes rather than investing in new or existing businesses. When borrowers use the loans for other purposes than for business investments, they might fail to repay their loans. The second cause of loan default is the lack of business knowledge. The authors further posit that the lack of knowledge on how to drive business can lead to excessive debts. Lack of basic business skills such as bookkeeping of sale transactions can also cause repayment default, (Kassim & Rahman, 2008).

The success of the microfinance industry is largely attributable to product simplicity, standardization, and the capacity to stimulate clients' payment discipline (Armendariz & Morduch, 2010). The most widespread product, microcredit, has standardized features:

short-term duration, small weekly installments starting right after loan disbursement, compulsory savings, progressive lending, and zero tolerance policy toward default. These features are indeed efficient for enhancing clients' discipline. Poor and low income individuals lack formal credit because lenders have little means to screen clients, monitor the use of funds, or enforce repayment. In recent years, many development organizations have used group lending to deliver credit to these individuals. Furthermore, group loans help formal lenders overcome the prohibitively high fixed cost of delivering small loans. Monitoring and enforcement are distinct, although difficult to distinguish empirically. According to Karlan & Valdivia (2006), monitoring itself does not guarantee repayment, but it allows a lending organization to know whom to punish for not repaying.

Although a commercial bank can attempt to monitor business and life outcomes for individuals, it is both difficult and costly to do so. Group lending mechanisms provide incentives to the borrowers to monitor each other to see who can pay and who cannot pay. Monitoring can take on several forms, such as observing repayment of the loan, visiting another's business to verify that it is in operation, showing receipts to demonstrate that inventory was purchased with the loan proceeds, and talking to others in the community to confirm negative shocks like illness. Churchill (1999) records a certain level of experience in the field; he highlights the guiding principles of individual microcredit. Among these, recourse to (the) guarantor(s) or to non-conventional guarantees seems to be frequently used by MFIs. Nonetheless, (Churchill, 1999) indicates that the individual guarantee mechanism used in micro financing has few points in common with the traditional concept developed in financial theory. In particular, it is not generally a question of finding an alternative source of repayment but of integrating the

social sanction mechanism into the individual loan agreement. The purpose of these mechanisms is primarily to limit overdue repayment.

1.1.3 Inflation and Loan Repayment

Lending is a risky enterprise because repayment of loans can seldom be fully guaranteed. The capability of borrowers to repay their microcredit loans is an important issue that needs attention. Borrowers can either repay their loan or choose to default. Borrower defaults may be voluntary or involuntary (Brehanu & Fufa, 2008). According to Brehanu & Fufa (2008), involuntary defaults of borrowed funds could be caused by unexpected circumstances occurring in the borrower's business that affect their ability to repay the loan. Unexpected circumstances include lower business revenue generated, natural disasters and borrowers' illness. In contrast, the author further argues that voluntary default is related to morally hazardous behavior by the borrower. In this category, the borrower has the ability to repay the borrowed funds but refuses to because of the low level of enforcement mechanisms used by the institution.

As the rate of inflation increases, banks must cushion themselves from loss of value of their cash assets by seeking higher returns from loans. Similarly depositors expect higher returns on their deposits to retain the real value of their cash assets. As depositors and lenders seek to get higher returns to cover the premium of inflation, the rates of interest must therefore rise in tandem. This raises the cost of loans and higher costs raise the risk of default which raises the overall cost of loans fuelling the inflation spiral. Inflation and loan repayment is expected to have a negative correlation. As the rate of inflation increases, the rate of loan repayment goes down. Inflation and loan default have a

positive correlation. As inflation increases, loan default by borrowers also increases thereby lowering the rate of loan repayment.

1.1.4 Commercial Banks in Kenya

Commercial banks in Kenya are either privately-owned or public-owned institutions that accept monetary deposits, process loans, and provide other financial services, such as international banking, documentary collection and trade financing. Commercial banks are licensed and regulated by the Central Banks of the jurisdictions (countries) in which they operate. In Kenya, the Central Bank of Kenya (CBK) licenses, supervises and regulates commercial banks, as mandated under the Banking Act (Cap 488). Kenya currently has 44 licensed commercial banks and one mortgage finance company. Of these 44 institutions, 31 are locally owned and 13 are foreign owned. The Government of Kenya has a substantial stake in three of Kenya's commercial banks. The remaining local commercial banks are largely family owned. Commercial banks in Kenya accept deposits from individuals and turn a profit by using the deposits to offer loans to businesses with a high interest rate.

Commercial banks are an important part of the Kenya financial landscape. Many commercial banks also offer a wide variety of services. Commercial banks are responsible for adding customer deposits in a safe and liquid form and lending the proceeds to worthy commercial, industrial, governmental and nonprofit institutions, (KBA, 2014). Commercial banks also provide market-making activities in municipal, government and corporate bonds. Banks provide consulting and advisory services to customers as well as safekeeping and trust. Kenya's commercial banks play a crucial role in ensuring Kenya's economic progress. Kenya's commercial banks like any other

organization are open systems operating in a turbulent environment. Their continued survival depends on the ability to secure a "fit" with the environment (Central Bank of Kenya, 2011).

Kenya as a region is facing very high inflation originating primarily from high food and fuel prices but also from demand pressures. The commercial banks in Kenya are susceptible to many forms of risk which have triggered occasional systemic crises (KBA, 2014). These include liquidity risk (where many depositors may request withdrawals in excess of available funds), credit risk (the chance that those who owe money to the bank will not repay it), and interest rate risk (the possibility that the bank will become unprofitable, if rising interest rates force it to pay relatively more on its deposits than it receives on its loans), (Ndung'u, 2014). Given these challenges, the government has agreed to coordinate such actions as tightening monetary policy, stemming volatility in the foreign exchange markets and curbing currency speculation activities (KBA, 2014).

1.2 Research Problem

Higher loan repayment guarantees continuous supply of resources for onward lending to other borrowers. Banks can be able to create credit whenever borrowers repay their loans. Credit creation is low whenever borrowers default on loan repayment. Continuous supply of funds increases confidence in the banking industry, capital formation, capital acquisition and increases production, (KBA, 2014).

Opati (2009) did a study on causal relationship between inflation and exchange rates in Kenya where he established that an increase in inflation leads to the depreciation of the local currency. Wamucii (2010) studied the relationship between inflation and financial

performance of commercial banks in Kenya. He established that the performance of commercial banks seemed to improve with the increases in inflation. Nyambok (2010) studied the relationship between inflation rates and liquidity of companies quoted at the Nairobi Stock Exchange (NSE). Nyambok noted that increases in inflation had mixed effects on the liquidity of firms quoted at the NSE. The effects varied across different segments at the stock exchange.

Though a number of studies have been carried out on the individual variables of this research, none talks specifically on the topic. For example, Nir (2013) did a study to investigate the non-performing loans (NPLs) in Central, Eastern and South-Eastern Europe (CESEE); Muhammad et al (2012) carried out a study to provide the perception of Pakistani bankers regarding the economic factors causing non-performing loans in the Pakistani banking sector. Apunyo (2011) studied the effect of interest rates on loan repayment on commercial banks in Uganda. On the other hand, studies on inflation rate include Wamucii (2010) on the relationship between inflation and financial performance of commercial banks; Nyambok (2010) on the relationship between inflation rates and liquidity of commercial banks; and Nyamute (1998) on the relationship between inflation rate, money treasury bills rate and exchange rates. As indicated by the extensive review of relevant studies carried by other researchers, none of these studies have attempted to examine the effect of inflation on loan repayments in Kenya. This study seeks to establish the relationship between inflation and loan repayment and fill this research gap.

1.3 Objective of the Study

To establish the effect of inflation on loan repayment among commercial banks in Kenya

1.4 Significance of the Study

This study provides infant banks with information on credit risk that offers guidance pertaining to loans repayment especially in times of inflation. This research could also help banks to detect and identify ways of reducing the amount of NPLs that may pose as a problem to them. By understanding how the clients' ability to repay is affected, the bank can introduce a new type of loan for its clients that suit their economic situation especially during inflation. The borrowers need understand why during inflation they need to watch the amounts of loan they acquire to avoid their property from being attached, so as to repay the loans they took. This research contributes to the existing field of knowledge on loan repayment and interest rate and provides scholars with the necessary literature review to carry out further research.

Government institutions stand to benefit from the study by using insights from the research to inform policy formulation to improve productivity. Policy makers like central Bank of Kenya finds it useful in their mandate of promoting and maintaining the safety, soundness and integrity of banking system. They are also able to take into account diverse needs of different stakeholders in the banking industry.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature relating to the study variables and covered the theories of inflation, review of empirical studies related to the topic, the concept of inflation and the concept of loan repayment. It also provides a conclusion identifying the gap of the study.

2.2 Review of Theories

2.2.1 The Classical Quantity Theory of Money

This theory was developed by Fisher (1911), where he took the view that money was only used as a medium of exchange to settle transaction involving the demand and supply for goods and services. Empirical studies of the quantity theory of money (QTM) have focused directly on the relationship between the rate of change of the money stock and inflation. In monetary economics, the quantity theory of money is the theory that money supply has a direct, proportional relationship with the price level, (Fisher, 1911). The theory was challenged by Keynesian economics, but updated and reinvigorated by the monetary school of economics.

While mainstream economists agree that the quantity theory holds true in the long run, there is still disagreement about its applicability in the short run. Critics of the theory argue that money velocity is not stable and, in the short-run, prices are sticky, so the direct relationship between money supply and price level, (Friedman, 1987). The quantity

theory of money, despite its affinity with monetarism in Western economics, has long been one of the accepted doctrines of the socialist monetary authority. The version of the quantity approach adopted is of course the classical, transactions-based one rather than the modern, Friedmanite extension which includes considerations on interest rates, assets and wealth, and adaptive expectations, among other variables, (Friedman, 1987).

2.2.2 The Keynesian Theory

Keynes, (1924) argued that an increase or decrease in money supply only affects, only indirectly, the demand for goods and services and hence the level of income though a change in the rate of interest thus for example an increase in money supply leads to a fall in the rate of interest which in turn causes private investment to fall and ultimately results in a decline in the level of national income. The impact on the economy of the increase in money supply depends on the effect that the interest rates produce. According to Keynesian view, both investment demand and consumer demand are relatively insensitive to interest rate changes. That is why the interest is inelastic, (Keynes, 1924).

Keynes (1924) argued that the volume of investments' depends heavily on technological changes and business confidence and expectations, hence an increase in the supply of money will have a limited effect on aggregate demand and consequently relatively little effect on output and employment. Keynesian argues that monetary policy will have limited effect on the economy and national income, because increase in money supply would be neutralized by the reductions in the velocity of circulation leaving PT unaffected. According to Keynes increase in money supply cannot lead to a proportional increase in the price level, (Keynes, 1924).

2.2.3 Monetarist Theory

Monetarists argue that since money is a direct substitute for all other assets, an increase in the supply of money, given a fairly stable velocity of circulation, will have a direct effect on the demand for other assets since there will be more money to spend on those assets. If the total output of the economy is fixed, then an increase in the money supply will lead directly to higher prices (Friedman, 1987).

Monetarists therefore reach the same conclusion as the old quantity theory of money that a rise in money supply will lead directly to a rise in prices and probably also to a rise in money incomes, an increase in real output and so an increase in employment (Friedman, 1987). In the long run however, they argue that all increases in the money supply will be reflected in higher prices unless there is a long-term growth in the economy. Monetarist school of economic thought contended that money supply is a key determinant of the level of production the short run and the rate of inflation in the long run. In order to minimize uncertainty monetarist advocated for the maintenance of a constant rate of growth of money supply (Friedman, 1987).

2.3 Determinants of Loan Repayment

Default on borrowed funds could arise from unfavorable circumstances that may affect the ability of the borrower to repay as pointed out by Stiglitz and Weiss (1981). The most common reasons for the existence of defaults are the following: if the financial institution is not serious on loan repayment, the borrowers are not willing to repay their loan; the financial institutions staffs are not responsible to shareholders to make a profit; clients lives are often full of unpredictable crises, such as illness or death in the family; if loans

are too large for the cash needs of the business, extra funds may go toward personal use; and if loans are given without the proper evaluation of the business, (Norell, 2001). Wakuloba (2005) in her study on the causes of default in Government micro credit programs identified the main causes of default as poor business performance, diversion of funds and domestic problems.

Breth (1999) argued that there are many socio-economic and institutional factors influencing loan repayment rates. The main factors from the lender side are high-frequency of collections, tight controls, a good management of information system, loan officer incentives and good follow ups. In addition, the size and maturity of loan, interest rate charged by the lender and timing of loan disbursement have also an impact on the repayment rates (Oke et al., 2007). The main factors from the borrower side include socio-economic characteristics such as, gender, educational level, marital status and household income level and peer pressure in group based schemes.

Khemraj & Pasha (2009) and Fofack (2005) stated that there is a positive relationship between the inflation in the economy and non-performing loans. Nkusu, (2011) explained that this relationship can be positive or negative. According to the author inflation affects loan payment capacity of borrowers positively or negatively, higher inflation can enhance the loan payment capacity of borrower by reducing the real value of outstanding debt. Moreover increased inflation can also weaken the loan payment capacity of the borrowers by reducing the real income when salaries/wages are sticky.

2.4 Review of Empirical Studies

Ng'etich & Wanjui (2011) carried out a study that sought to establish the effects of interest rate spread on the level of Non Performing Assets (NPAs). The study adopted a descriptive research design on a sample of all commercial banks in Kenya operating by 2008 which were 43 in number. The study used questionnaires to collect data from primary data sources and secondary data, collected from Bank Supervision Report, to augment the primary data findings. The study used both quantitative and qualitative techniques in data analysis to the relationship between the interest rate spread and loan non-performance. The data was presented using graphs, table and pie-Charts. The study concluded that interest rate spread affects performing assets in banks as it increases the cost of loans charged on the borrowers, regulations on interest rates have far reaching effects on assets non-performance, for such regulations determine the interest rate spread in banks and also help mitigate moral hazards incidental to NPAs.

Credit risk management technique remotely affects the value of a bank's interest rates spread as interest rates are benchmarked against the associated non-performing assets and non-performing assets is attributable to high cost of loans. The study recommends that commercial banks in Kenya should assess their clients and charge interest rates accordingly as ineffective interest rate policy can increase the level of interest rates and consequently NPAs. They apply stringent regulations on interest rates charged by banks so as to regulate their interest rate spread and enhance periodic/regular credit risk monitoring of their loan portfolios to reduce the level of NPAs.

Bichanga & Aseyo (2013) carried out a study to find out the causes of loan default within Micro Finance Institutions (MFIs) in Trans-Nzoia County. Specific objectives were to investigate how non- Supervision of borrowers influences the loan repayment financed by MFIs in Trans-Nzoia county; to find out the effects of shrinking economic growth experienced by borrowers on loan repayment and to establish how diversion of loan funds by borrowers leads to default in loan repayment. The target population comprised a total of 400 loan borrowers and 200 MFIs out of which a sample of 150 was picked using simple random sampling for each stratum, which enable every member of the population have an equal and independent chance of being selected as respondents and also simplest, most convenient and bias free selection method. The data was collected by use of structured and semi-structured questionnaire. The data was analyzed from questionnaires using both quantitative and qualitative techniques and tabulated by use of frequency tables. The study found out that loan repayment default was as result of non supervision of borrowers by the MFIs, and also as a result of inadequate training of borrowers on utilization of loan funds before they received loans. The findings also revealed that most borrowers did not spend the loan amount on intended and agreed projects.

Ogol (2013) carried out a study to investigate factors affecting loan repayment among customers of commercial Banks in Kenya with specific reference to Barclays Bank of Kenya Limited. The study achieved its purpose through three objectives namely to determine the effect of Lenders factors on loan repayment among customers of commercial Banks in Kenya, to find out the extent to which Borrowers factors affect loan repayment among customers of commercial Banks in Kenya and finally to establish the effect of loan factors on loan repayment among customers of commercial Banks in

Kenya. The study included staff of Barclays Bank of Kenya which includes Credit Administrators and Relationship Managers within the Branches of Nairobi County. It also included both mass market customers and the relationship managed customers. The target population included 78 respondents. The research design used was descriptive statistics.

The study reviewed relevant literature with the aim of establishing a gap which the research fulfilled. Methods of collecting data were questionnaires and interview schedules. This study concludes that there is a significant relationship between firm/group factors and the loan repayment among customers of commercial banks in Kenya. The study also concluded that there was a significant relationship between individual borrowers' factors and the loan repayment among customers of commercial banks in Kenya. The study further concluded that there is a significant relationship between loan factors and loan repayment among customers of commercial banks in Kenya.

Kiliswa (2012) conducted a study with the objective of identifying the major determinants of loan repayment in Small Scale Enterprises (SSEs) with particular reference to SSEs in Kariobangi Division, Nairobi County. In order to achieve this objective, primary data were collected from 50 randomly selected respondents by using questionnaires. For data analysis, descriptive statistics including mean, frequency and percentages were used to describe the socio-economic characteristics of the borrowers. A regression model was used to analyze the determinants of loan repayment. The study found that even though many factors can lead to loan defaults, some of the factors were regarded to be of higher impact.

Business related factors were significant in influencing loan repayment of the respondents with increase in input prices as the major factor that led to loan defaults while death of spouse was seen as the least factor that led to loan default. In addition, education level, family size, amount of loan applied and business experience of the respondents were found to have a positive relationship to loan repayment. Age, interest rate and change in gender had an inverse relationship to loan repayment. The study recommended that more loans should be advanced to female SSE owners aged 30-40s as they proved to be the least loan defaulters. SSEs in Kariobangi division should use prequalified suppliers in order to minimize variation in input prices. The financial institutions should provide financial education and awareness to SSE owners as they are less educated.

Apunyo (2011) did a study that sought to determine the effect of interest rates on loan repayment in Uganda's commercial banks using study of Equity bank. The analysis was implemented based on data obtained from 10 bank officials and 50 customers. The data analysis was based on the objectives of the study and done by use of Statistical Package for Social Sciences on collected data. The result of the study reveals that there is to great extent a close relationship between interest rates and loan repayment in conjunction with business growth and performance. High interest rates, coupled with lack of entrepreneurial skills were seen as the major factors that have a direct bearing with the loan repayment among Equity Bank loan customers.

The study also established that all respondents were fully aware of the effect of interest rates role played by micro-credits in regards to business performance. Basing on their views, the provision of loans to entrepreneurs has a great impact on the businesses

performance as compared to businesses not facilitated by micro-credits. This partly explains unenthusiastic regard of the management of Uganda Micro Finance Institutions to their improvements, in the credit terms to their client's entrepreneurs. However the businessperson appeared to be supportive to the micro-credit scheme, they yarned and claimed for increase of their loans and reduction on the interest rates and requested for entrepreneurship skill training and loan investment workshop as being the major factors that will lead to the improvement of their business performance.

Taner (1998) carried out a study to investigate the effects of inflation uncertainty on credit markets by using a disequilibrium framework. They used quarterly data from 1980 to 1995 for the developing countries and longer sample periods for the developed countries (1971-1995 for Germany, 1972-1995 for Italy, 1975-1995 for Switzerland, and finally 1968-95 for the UK). Explanatory variables used in the demand side (variables in matrix X_2) of the credit market are: inflation uncertainty, expected price level, expected project return, wage, and capital stock. They used expected industrial production as a proxy for the project return while deriving capital stock from quarterly capital formation. Independent variables on the supply side (X_1) are: deposit rate, Treasury bill rate, expected inflation, inflation uncertainty, expected depreciation, depreciation uncertainty, and interest-exchange rate covariance.

The theoretical section displayed how inflation uncertainty increases the risks associated with the portfolios of firms and banks, because these agents to act risk aversely, and create grounds for disequilibrium. The empirical section established that use of a disequilibrium estimation technique is called for in sample credit markets. Tests on both developed and developing countries show that inflation uncertainty has significant

bearing on credit markets either directly or indirectly regardless of depth of financial markets. Therefore, the removal of inflation uncertainty will decrease the risk around these contracts and will ensure efficiency and growth of investment in a country. Evidence in this research strengthens the argument for inflation targeting and explains its rising popularity as the choice of monetary policy.

Nir (2013) did a study to investigate the non-performing loans (NPLs) in Central, Eastern and South-Eastern Europe (CESEE) in the period of 1998 to 2011. The analysis was done using panel data of individual banks' balance sheets from Bank scope as well as macroeconomic indicators from the Haver and World Economic Outlook (WEO) datasets. Data was based on annual frequency for 1998–2011, and covered the ten largest banks (commercial, savings, cooperate, and real estate & mortgage) in each of the 16 countries namely: Bulgaria, Poland, Hungary, Romania, Croatia, Russia, Czech Rep, Serbia, Estonia, Slovak Rep, Latvia, Slovenia, Lithuania, Ukraine, Bosnia and Herzegovina Macedonia .

They found that the level of NPLs can be attributed to both macroeconomic conditions and banks' specific factors, though the latter set of factors was found to have a relatively low explanatory power. The examination of the feedback effects broadly confirms the strong macro-financial linkages in the region. While NPLs were found to respond to macroeconomic conditions, such as GDP growth, unemployment, and inflation, the analysis also indicated that there are strong feedback effects from the banking system to the real economy, thus suggesting that the high NPLs that many CESEE countries currently face adversely affect the pace of economic recovery.

Muhammad *et al* (2012) carried out a study to provide the perception of Pakistani bankers regarding the economic factors causing non-performing loans in the Pakistani banking sector since 2006. The study was conducted via a well-structured questionnaire and data was collected from 201 bankers who were involved in the lending decisions or analyze the credit risk or handling non-performing loans portfolio. Correlation and regression analysis was carried out to analyze the impact of selected independent variables (Interest Rate, Energy Crisis, Unemployment, Inflation, GDP Growth, and Exchange Rate) on the non-performing loans of Pakistani banking sector. Top 10 Pakistani banks were selected as a sample. According to the results Pakistani bankers perceive that Interest Rate, Energy Crisis, Unemployment, Inflation, and Exchange Rate has a significant positive relationship with the non-performing loans of Pakistani banking sector while GDP growth has significant negative relationship with the non-performing loans of Pakistani banking sector. The study also discussed how good loans are turning into bad loans due to disaster in energy sector of Pakistan and how these energy crisis are badly affecting the banking sector of Pakistan.

2.5 Conclusion

From the literature review several studies have been carried out on various aspects of inflation. However, none of these studies have attempted to examine the effect of inflation on loan repayments in Kenya to the best of our knowledge. The lack of sufficient research in Kenya on this area may be attributed to the specificity and complexity of the field. This study will bridge this gap by establishing the impact that inflation has on loan repayments among commercial banks in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the procedures and methodologies undertaken in conducting the study to arrive at conclusions regarding the impact of inflation on loan repayments among commercial banks in Kenya. This section specifically covered the research design, target population, sample, data collection, data analysis and finally data validity and reliability.

3.2 Research Design

The research design is a blueprint for conducting the research that specifies the procedures necessary to obtain the information needed to structure and solve the research problems (Cooper and Schindler, 2003). This research adopted a descriptive research design. A descriptive research design determines and reports the way things are (Mugenda & Mugenda, 2003).

3.3 Target Population

Mugenda & Mugenda, (2003) defines population as an entire group of individual or objects having common observable characteristics. A large set of observation is called a population while a smaller set is called a sample. The target population of this study comprised 44 Commercial Banks in Kenya as at 31st December 2013.

3.4 Sample

Cooper and Schindler (2003) defined a sample as a list of elements from which the sample is actually drawn and is closely related to the population. It is from the target population that the sample is extracted. The sample size comprised all the listed Commercial Bank in Kenya on the NSE which number 10 out of the 48 licensed banks.

3.5 Data Collection

The study sourced secondary data from publications made by the commercial banks, the NSE, KNBS and CBK. Loan repayment was calculated as an average for all banks for each year as the ratio of non-performing loans to the total loans given by each bank obtained from published financial statements. This information was also used to determine the loan repayment performance for the banks and inflation over a 5 year period from 2008 to 2012 which was sufficient to show the trends over the period. Data on inflation over the same period was sourced from publications by the CBK and KNBS both of which show inflationary trends on a quarterly basis and for the year as a whole.

3.6 Data Analysis

Descriptive statistics was used to summarize the data collected from the sample. This involved the use of histograms and line graphs to show the trends in loan repayment and inflation over the study period. Data was analyzed using the Statistical Package for Social Sciences (SPSS) and Microsoft Excel. In addition, simple linear regression model was applied to determine the relationship between loan repayment, the dependent variable and inflation rate, the independent variable. The simple linear regression model was adopted

as the variables under study was two only with one independent and one dependent variable and was represented as follows:

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

α is the Y intercept

Y is the Loan repayment as the dependent variable

X_1 is the inflation as the independent variable

ε-Is the error term

3.7 Data Validity and Reliability

Mugenda and Mugenda (2003) asserted that, the accuracy of data largely depend on the data collection instruments in terms of validity and reliability. Validity as noted by Robinson (2002) is the degree to which result obtained from analysis of the data actually represents the phenomenon under study. Validity was achieved by having objective data and pre-testing a sample of the information to be used. Reliability on the other hand refers to a measure of the degree to which research instruments yield consistent results (Mugenda & Mugenda, 2003). In this study reliability was achieved by selecting a sample and testing it for accuracy from data collected.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS
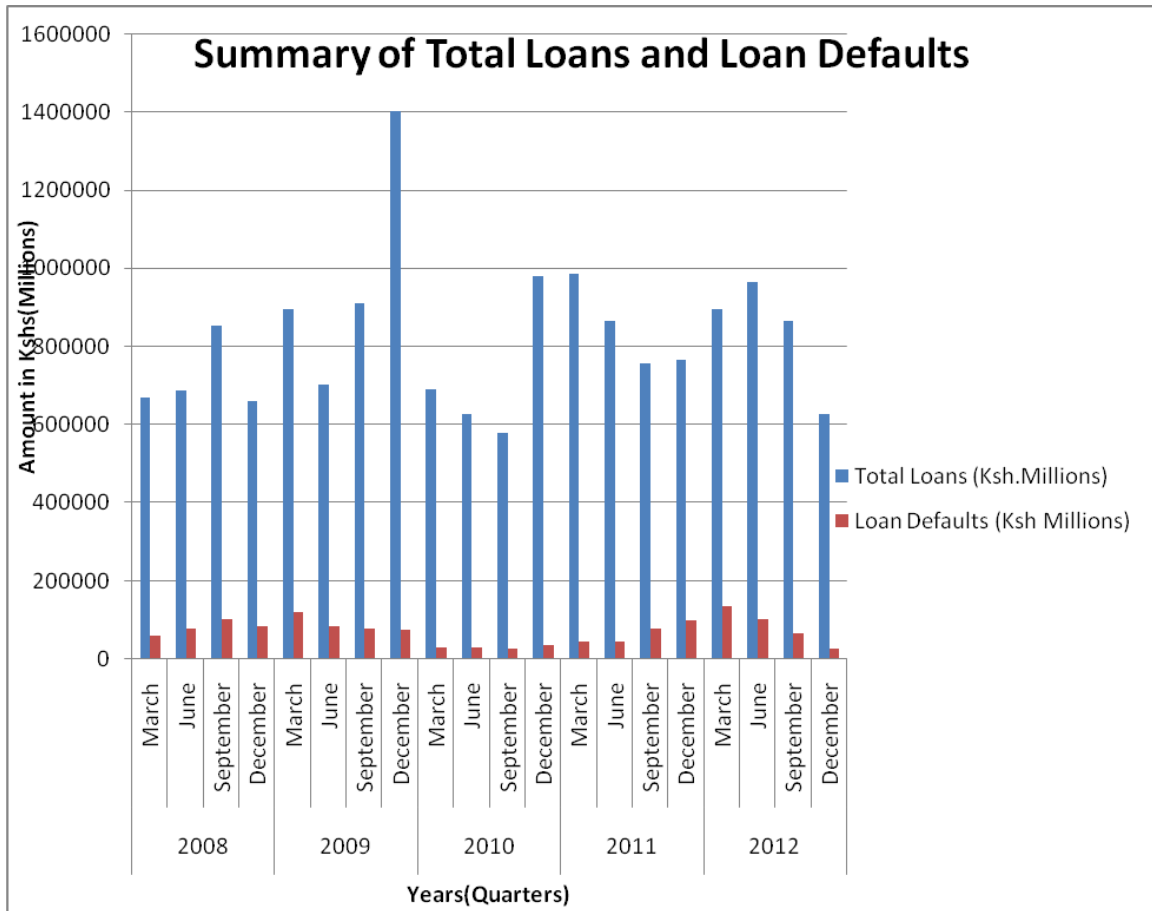
4.1 Introduction

This chapter discusses the interpretation and presentation of the study findings. The purpose of the study was to determine the effect of inflation on loan repayment in NSE listed Kenyan commercial banks. The study collected data of five (5) years from year 2008-2012 for all the banks listed on the NSE by obtaining the total loans and advances as well as loan defaults from the commercial banks.

4.2 Data Presentation

This section analyses the effects of inflation on loan repayment for a period of 5years (2008-2012) in 10 (Ten) listed commercial banks in Kenya. Appendix II illustrates Total loans and advances as well as Net Non-performing Loans (NPLs) for the five years (2008-2012) for 10 (ten) Commercial Banks in Kenya. It also shows average inflation rates over the same period under investigation. From Appendix II, inflation rate was lowest in the third quarter of year 2010 at 3.3% while the average rate of loan default for the ten (10) commercial banks stood at 4.9% in the same period. This indicates that while the rate of inflation was at its lowest the average rate of default in the ten commercial banks stood at 4.9%, this infers that a low inflation rate result to lower interest rates thus reducing the credit risk among commercial banks.

4.2.1 Summary of Loans & NPLs

The study sought to determine the total number of loans and advances in the period under investigation (2008-2012) and the loan default amounts for the same period. The results are as indicted in figure 4.1.

Figure 4.1 Summary of Loans & NPLs

Figure 4.1 shows summary of Loans and NPLs between years 2008-2012 for all the NSE listed commercial banks. From the results, it's evident that the rate of loan default does not increase or decrease with the loan amounts. For example, the total loans and advances for the year 2008, 3rd quarter was Ksh.852 billion while the loan default amounts were Ksh.102 billion. In 2009, 4th quarter, the total loan and advances amounts were Ksh.1,402

billion while the loan default amounts were Ksh.75 billion. This clearly indicates that the default rate is not dependent on the loan amounts since the increase of loan and advances by 64% does not correspond with the decrease in the default of 26% for the same period.

The results also show that the total loans and advances for the five year period do not show a specific trend. The amounts rise and fall without any specific trend. This may be an indicator of borrowing that reflects seasonal economic and business cycles and may also show that borrowing is short-term in nature in Kenya.

4.2.2 Credit Risk for All Banks (5Years)

The study sought to determine the rate of defaults (Credit Risk) among the ten commercial banks under study for the five year period and the results are as indicated in figure 4.2. This was important in order to establish any abnormal trend in terms of loan repayment among the sampled commercial banks.
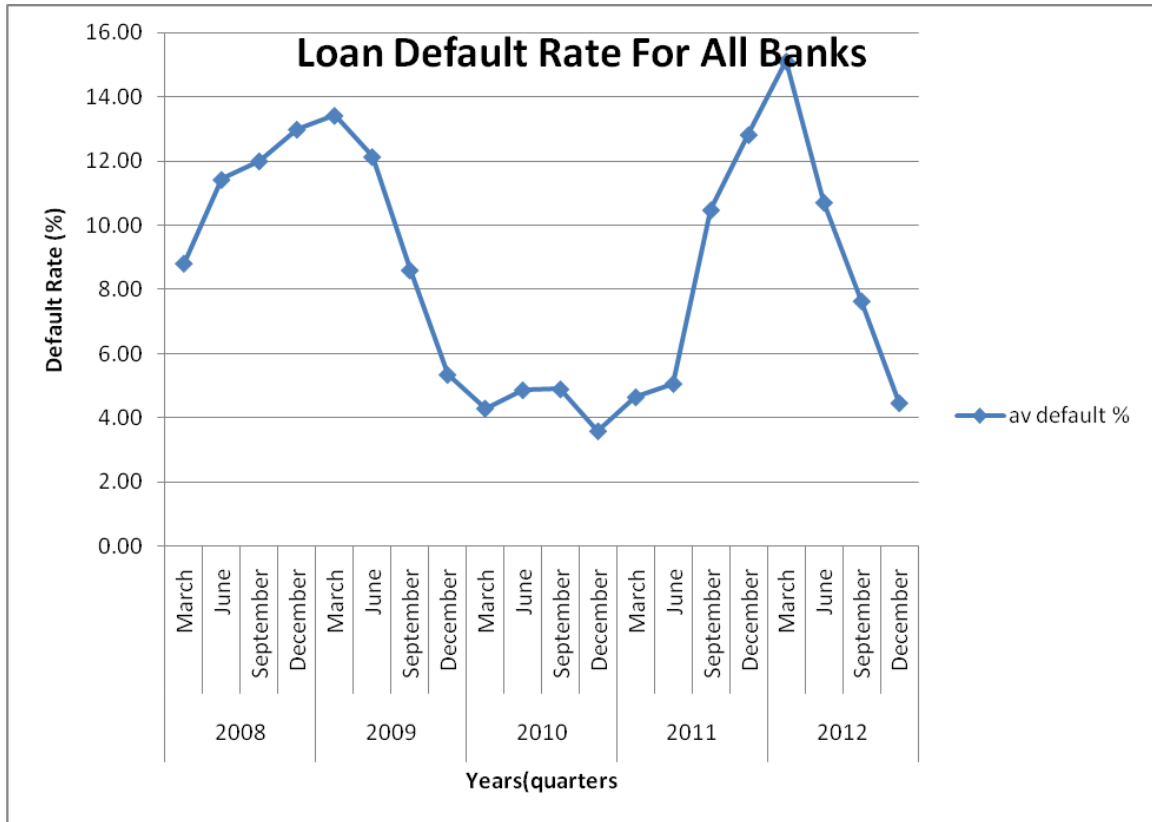
Figure 4.2 Percentage Loan Default for all Banks (5 Years)

Figure 4.2 shows the percentage credit risk on a quarterly basis for the ten banks over the period of five years from 2008 to 2012. This was calculated by dividing the total amount of non-performing loans with the total amount of advances. From the results, the highest rate of default was witnessed during the first quarter of the year 2012 at about 15.11%. The lowest rate of loan default was attained in the 4th quarter of 2010 at 3.6%. The high rate of default in 2012 can be attributed to the high rate of inflation during the same period when most businesses may have been unable to honour their financial obligations. This trend however is not observed during the 2009-2010 period when the rate of inflation was low.

4.2.3 Average NPLs & Inflation Rates

The study sought to determine the average NPLs and inflation rates for the sampled

commercial banks and the results are as presented in figure 4.3. The average NPLs was

computed by aggregating total non-performing loans for all the ten banks and obtaining

the ratio from the total advances.
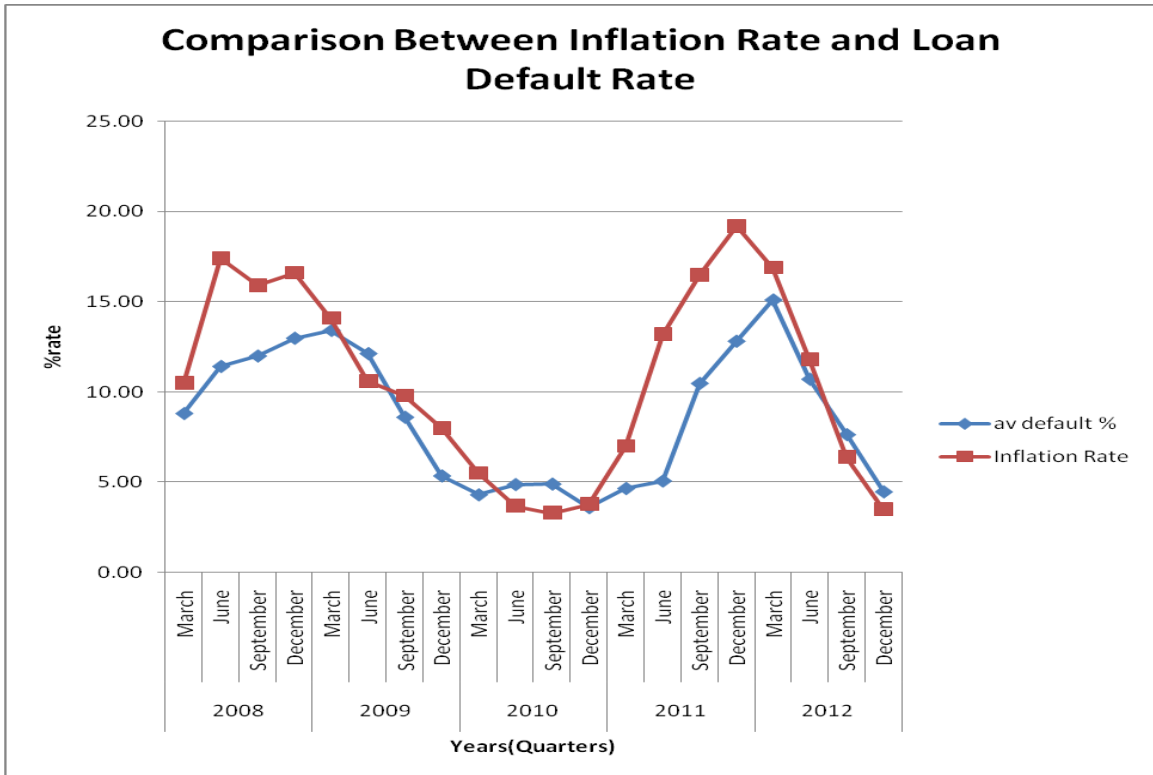
Figure 4.3 Average NPLs & Inflation Rates

Figure 4.3 illustrates five year trend in terms of average Non-performing loans and

inflation rates. Inflation rate was highest at 19.2% with the corresponding non-

performing loans/credit risk at 12.83%. The figure also shows that as inflation rates

continue on a downward trend, the average rate of loans defaults also drops though at a

different rate as observed during the 2009-2010 period. Likewise as inflation increases

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the rate of non-performing loans also begin to rise. This indicates that there is a linear relationship between inflation and loan repayment.

4.2.4 Regression Analysis

Table 4.1 Correlation co-efficient

	average default %	Inflation Rate
Average default %	1	
Inflation Rate	0.854673	1

The correlation co-efficient between inflation rate and loan default has been calculated at +0.85. This shows that as inflation rate increases, the rate of default is also expected to rise and vice versa. This shows a strong positive correlation between the two variables.

Table 4.2 Regression Analysis

SUMMARY
OUTPUT

Regression Statistics	
Multiple R	0.8548126
R Square	0.7307046
Adjusted R^2	0.7148637
Standard Error	2.0692979
Observations	19

ANOVA

	Df	SS	MS	F	Significance F
Regression	1	197.518	197.519	46.13	3.14E-06
Residual	17	72.7939	4.28199		
Total	18	270.312			

		Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%
Intercept		2.2004423	1.06361	2.06883	0.054	-0.04359	4.44448	-0.04359
	10.5	0.6044412	0.08899	6.79174	3E-06	0.416675	0.79221	0.416675

Table 4.2 above illustrates the regression model summary results. It's evident that the independent variable can predict 85.48% of the variations in the dependent variable (Loan Repayment). Likewise the coefficient of determination denoted (R^2) explains how well the data fits the regression line or line of best fit. The results show that the data fits/falls on the regression line 73% of the time.

The results therefore show that inflation is a major predictor of the rate of loan default as it may explain 85.48% of the variation. The remaining 14.52% can be predicted by other factors other than inflation. Consequently, further research can be conducted to investigate into the other factors that influence Loan Repayment among commercial banks in Kenya.

The study developed a regression equation to determine the association between the independent variable (inflation) and the dependent variable (loan repayment). This was made to establish whether there exists any significant relationship between the two variables. As indicated by the coefficient from the regression analysis, the regression may be represented as follows;

$Y = 2.200 + 0.604X_1 + \varepsilon$

Table 4.2 shows that the relationship between the two variables is significant at p<0.005 with a P value of 3.14 thus the independent variable is a good predictor of the dependent variable. The regression equation shows that holding all other factors constant a unit

change in the independent variable (inflation) would result to 0.855 change in the dependent (variable loan repayment).

4.3 Summary and Interpretation of the Findings

The study established that the rate of inflation affects loan repayment due to increased interest rates driven by the central Banks effort to mop up excess liquidity in the market. This exercise leads to increase of lending rates in order to limit borrowers' access to credit. This concurs with (Glogowski, 2008) who found that inflation is important for banks in their capacity of financial intermediation having adjusted for anticipated inflation, and can suffer massive default risk depending on the fluctuation of inflation between the anticipated and actual inflation rates on their fixed instruments. Rising inflation tend to lead to an increase in non-performing loan, credit risk. In this view Mileris (2012), studied the macroeconomic determinants that significantly influence the changes of loan portfolio credit risk among banks and to develop the statistical model for prediction of the proportion of doubtful and non-performing loans and employed an OLS regression model for 22 EU countries that were grouped into 3 clusters according to their similarity in changes of the doubtful and non-performing loans percentage in banks for the time period between 2007-2011 and found that an increase in inflation rate had a profound positive relationship to non-performing loans. On the contrary Warue, (2013) found that there exists a negative relationship between credit risk and inflation. This implies that Non-performing loans are not responsive to changes in inflation. A probably interpretation of these results is that inflation leads to more profitability as more money chases few goods. Most borrowers are business people who seem to pass over the cost of inflation to consumers. For instance, when fuel prices go up, road transport players raise

fare to consumers of their services thus business people retain their ability to repay their loans. These findings may be negated by recent increase in consumer credit in Kenya in the last 10 years.

This study found that there is a linear relationship between credit risk and inflation in that during periods of high inflation the rate of credit default increases owing to borrower's inability to cope up with high interest rates. The estimates in the regression model suggest that Lending interest rates have a positive and significant relationship with credit risk at 95% significant level. This concurs with studies by Vogiazas & Nikolaidou, (2011), Ngetich (2011), along these lines where the study applies a similar measure of Credit Risk. Similarly these findings are consistent with other studies by Warue, (2013), Beck, *et al.*, (2013), Souto, *et al.*, (2009), and Aver, (2008). A probable interpretation of these results is that an increase in the lending interest rates will lead to a significant increase in the credit risk since banks attach most loans to a floating lending interest hence with an increase in the rate the borrower will find it hard to repay the amount since their income is most likely fixed and with increased burden of higher rates on a fixed income will lead to defaulting of loans by the holders of the loans.

CHAPTER FIVE

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

5.1 Summary

This study set out to determine the effects of inflation on loan repayment in listed commercial bank in Kenya. The sample comprised of ten banks consisting of 2 (two) foreign and 8 (eight) local ones. The study sampled net Non-performing loans for the ten banks over a five year period beginning 2008-2012 and inflation rates for the same period. Descriptive research design was employed to describe the phenomena (inflation) and its effects on loan repayment in commercial banks in Kenya.

This study established that inflation affects loan repayment in that during periods of high inflation rates interests charged on loans increase thereby leading to increased interest payments by borrowers which in turn results to total default. The study found that Inflation has a significant positive relationship explaining the credit risk in Kenyan commercial banks. This is explained by the fact that inflation will lead to the CBK adjusting its base lending rate upwards as a way of mopping too much liquidity from the market, as a result commercial banks increase their lending rates which increases the cost of servicing loans. With high interest rates borrowers take the burden of repaying their loans at higher interest rates and as a result a number default their loans.

The study also established that while macroeconomic variables affect loan repayment in financial institutions, state owned financial institutions have a higher rate of default compared with other financial institutions in the private sector. This disparity may be as a result of borrowers and especially politically influential persons and associated

institutions or companies easily obtain credit without the required due process being followed and as a result this leads to high levels of non-performing assets.

5.2 Conclusions

Internationally, the number of empirical studies trying to link macroeconomic factors and the asset performance of the banking sector has been growing rapidly in recent years. Addressing the high level of nonperforming loans remains a major challenge as important post crisis effects are still unfolding. Financial institutions need to put in place proper policies in order to curb the increase in non-performing assets and thus reduce the level of credit risk.

Whereas this study focused on inflation and its effects on loan repayment among commercial banks in Kenya, there are other factors that affect loan repayment such as credit risk of borrowers which may arise due to the relationship between the lender and the borrower (insider loans). Conflict of interest that may be propagated by managers or directors of a company will most likely result to bad and doubtful debts and therefore it is important that financial institutions especially credit risk department to monitor insider loans.

5.3 Recommendations for policy and Practice

The cost of loans does influence asset non-performance, the study recommends that commercial banks in Kenya should assess their clients and charge interest rates accordingly, as ineffective interest rate policy can increase the level of interest rates and consequently the amount of non-performing assets. Given that the type of interest rates charged on loans (fixed and floats) dictates on the ability and flexibility of borrowers to

repay loans, the study recommends that commercial banks should adopt a fixed interest rate policy as this gives the borrower the chance to plan the loan repayment accordingly.

The central banks should apply stringent regulations on interest rates charged by banks so as to regulate their interest rate spread. Commercial banks should also apply rigorous policies on loan advances so as loans are awarded to those with ability to repay and mitigate moral hazards such as insider lending and information asymmetry. Commercial banks should also make use of the credit reference bureau in order to establish the credit worthiness of potential clients. The credit rating will help commercial banks ascertain the level of credit risk of its borrowers. Banks should also apply efficient and effective credit risk management policies that will ensure that advances are matched with ability to repay, no or minimal insider lending, loan defaults are projected accordingly and relevant measures taken to minimize the same. The banks should also enhance periodic/regular credit risk monitoring of their loan portfolios to reduce the level of NPA. The central bank being at the core of financial regulation in the country should put in place monetary as well as fiscal policies that help curb inflation. Such policies will help in maintaining low rates of inflation that are acceptable.

5.4 Limitations of the Study

A number of macroeconomic factors influence loan repayment among commercial banks in Kenya such as GDP growth, interest rates among others, this study focused only on inflation and thus limited to a single macroeconomic variable whereas other macroeconomic variables influence loan repayment among commercial banks in Kenya.

Another limitation of this study arises from the fact that the sample selected comprised only of 10 (ten) commercial banks whereas there are 48 financial institutions in Kenya and therefore this may not illustrate the correct position due to generalization. Further this study also selected only listed commercial banks and generalized the results across other non-listed commercial banks.

The data used was secondary data which may have been generated for other purposes. The measures used may keep on varying from one year to another subject to the prevailing condition. Inflation rate was used which depends heavily on the base year statistics. This may lead to different results being obtained.

5.5 Suggestions for further studies

The effect of Macroeconomic variables such as inflation on credit risk in Kenyan commercial banks is a research area where a lot of research has not been carried out and also varying results have been put forward on the same. Domestic credit as a variable has not been explored as a factor influencing credit risk in Kenyan commercial banks and research on the same would be an area of interest.

This study focused on inflation and its effects on loan repayment among commercial banks in Kenya however the inclusion of other financial institutions in the micro finance sector was sidelined as such future research should be done to find out the effects of the same (inflation) on loan repayment among microfinance institutions in Kenya. A study in this area will be of great importance to all stakeholders in the financial sector owing to the rapid growth being witnessed in the micro finance sector.

Studies need to explore this effect further by using monthly data to examine the effect of inflation on loan repayment. This was a major limitation of the present study as the time did not allow the collection of monthly data and therefore use of such may enhance the reliability of results.

There is also need to use a combination of both primary and secondary data in order to gather qualitative data on the subject as such methodologies have not been explored in this area.

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APPENDICES

Appendix I

Listed commercial banks in Kenya

1.   Barclays Bank (Kenya)

2.   CFC Stanbic Holdings Ltd

3.   Cooperative Bank of Kenya

4.   Diamond Trust Bank Kenya Ltd

5.   Equity Bank Ltd

6.   Housing Finance Company of Kenya

7.   Kenya Commercial Bank Ltd

8.   National Bank of Kenya

9.   NIC Bank

10.   Standard Chartered Kenya

Appendix II

Total Amount of Loans, NPLs & Inflation Rates

Year	Quarter	Total Loans (Ksh.Millions)	Loan Defaults (Ksh Millions)	Default Rate(%)	Inflation Rate(%)
2008	March	670,000	59,094	8.82	10.5
	June	687,420	78,562	11.43	17.4
	September	852,130	102,310	12.01	15.9
	December	659,210	85,642	12.99	16.6
2009	March	895,610	120,230	13.42	14.1
	June	701,250	85,120	12.14	10.6
	September	910,256	78,360	8.61	9.8
	December	1,402,310	75,120	5.36	8
2010	March	689,520	29,688	4.31	5.5
	June	625,492	30,502	4.88	3.7
	September	579,210	28,405	4.90	3.3
	December	980,410	35,287	3.60	3.8
2011	March	986,210	45,935	4.66	7
	June	865,230	43,903	5.07	13.2
	September	756,210	79,287	10.48	16.5
	December	765,870	98,147	12.83	19.2
2012	March	895,230	135,290	15.11	16.9
	June	965,251	103,450	10.72	11.8
	September	865,251	66,140	7.64	6.4
	December	625,430	27,980	4.47	3.5