

**EFFECTS OF INFLATION ON KENYA COMMERCIAL BANKS LENDING
BEHAVIOURS**

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**THIS RESEARCH PROJECT HAS BEEN SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTERS IN
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DECLARATION

I, declare that this is my original work and has not been submitted to any other college, institution or university other than the University Of Nairobi for academic credit.

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This project has been presented for examination with my approval as the appointed supervisor

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ABSTRACT

The motivation behind this study was to determine if there exists a connection between inflation yearly lending rate and Kenya Commercial Banks' loaning conduct, regarding loaning volumes financing costs and credit values. This examination was guided by the accompanying questions?(i) what is the connection between yearly rate of inflation and base loaning rates in kenya from the year 2012 to 2016?(ii)What is the connection between both inflation and base lending rate and lending volumes between the year 2012 to 2016? The investigation has adopted a clear research plan with the objective population containing top five Kenyan banks. Auxiliary information on inflation rates, new volumes of loaning to borrowers, and bank base lending rates were gathered. A sample size of five banks was chosen through multi arranged examining strategy. Secondary data was acquired from CBK and World Bank records while information on inflation was obtained from the Kenya National Bureau of Statistics, through their web site. In light of the findings, different suggestions were made. First, the bank will use the information to help formulate policies on minimum base lending rate to be charged on loans. In order to maintain this, the banks would need to diversify to other sources of income streams. For example, aggressively undertaking non interest related activities e.g. collection of commission and fees to cushion it during high inflation period when uptake of loans dwindle .Since the banks have no control of macroeconomic factors affecting inflation in the country The primary conclusion was the there exists a positive connection between inflation rate and the base loaning rate charged by the bank, as inflation levels rises, so will the banks base loaning rate both from the key informant figures and the investigation of the analysis, demonstrating that expansion significantly affects Banks base loaning rate. The second finding was that inflation has moderate impact on new loaning volumes; in any case, an expansion in base loaning rate contributed most towards the decrease in the loaning volumes. The third discovering uncovered that an increase in inflation prompted high rate of advance defaulting by customers in the bank.

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To God who gave me the strength and ability to do this work. In him, I live and have every breath of life.

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DEDICATION

To my family and my friend who have been very supportive during my studies and to my employer who supported me financially and time off duty to do my studies.

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LIST OF ABBREVIATIONS

CBK	-	Central Bank of Kenya
CDS	-	Credit Default Swap
ECB	-	European Central Bank
GDP	-	Gross Domestic Product
KBA	-	Kenya Bankers Association
KBC	-	Kenya Commercial Bank
KSH	-	Kenya Shillings
NPL	-	Non-Performing Loans
SAMA	-	Saudi Arabian Monetary Agency
SMEs	-	Small and Medium-sized Enterprises
SPSS	-	Statistical Package for Social Scientists
US	-	United States
VEC	-	Vector Error Correlation 1

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Loaning is an essential administration purpose that banks render to their clients. Banks grant advances to people, government and business organisations (Cheboi, 2012). Banks are important investment, savings and financial resource allocation institutions. This role makes them an important component in economic growth and development. In assuming out this role, banks have the potential to expansion and prospects for getting ready cash related resources and distributing them to beneficial individuals and organisation. Regardless of the source of income and the financial standing of the nation, business banks would be keen on giving out advances to their clients putting into considering, the three rules that guide their operation, which are, profitability, liquidity, and solvency (Cheboi, 2012).

Chodechai (2004) while study on components that influence interest rates, noted that banks must be cautious while giving their advances as they can't charge interest rates that are too low to get enough income to take care of their expenses, and general costs and the loss of income from a few borrowers that don't pay back their loans. Additionally, charging too high interest rates may create a moral hazard and risk to the borrowers. Nonetheless, banks choices to loan is affected by elements, for example, the inflation rate, the volume of deposits, the level of domestic and foreign investment, liquidity proportion, prestige and public knowledge . Inflation is a key determinant of banks' lending rates all around.

Taner (2000) in his study on the impacts of inflation vulnerability using a credit markets noted that unexpected inflation raises interest rates reduces loans supply and influence loans demand. He recommends that an increase in inflation may raise the bank loaning rates and prompt low bank-loaning volumes. Emon (2012) affirmed this and states that banks know that inflation decrease the value of cash over the term of a loan, therefore increasing the interest rate to adjust for the unforeseen loss. The increase in rates may affect the borrowing patterns for any bank. He additionally confirmed that there is a positive connection between the inflation rates and the interest rates despite the fact that the degree to which one influences the other for various periods is not certain.

1.1.1 Inflation

Inflation is commonly the steady increment of cost of products and services in an economy over a time. When cost of goods increases individual purchases power decreases and vice versa. Subsequently, inflation results into a decrease in the purchasing power per unit of cash (Boyd and Champ, 2004) Further observed that high inflation rates are caused by high supply of money in circulation compared to the economic growth, a lower rate of inflation is thus favourable it reduces severity of economic recessions and enables market to adjust more quickly. The main measure of price fluctuations is the inflation rate; this is the annual change in a price (normally the consumer price index) over a certain period. The consumer price index measures movements in prices of goods and services purchased by a consumer.

According to Santoni (1986), inflation reduces the value of money such that a small increase in inflation results into a similar change in value of the currency in a country's economy. Broadly, inflation theorists attribute inflation to monetary causes and mal adjustments in economic system (Chand, 2008). The performance of commercial banks has been a considered issue in the small countries. Further, the performance of banking is important to the customers, shareholders, potential owners and policy makers as banks execute the monetary policies of any government (Mian *et al.* 2013). This suggests that the volumes of bank lending may partly depend on the performance of commercial banks.

1.1.2 Banks lending Behaviour Versus Lending Volumes

In Kenya, the Economic Survey, 2013 shows that there has been negative association between inflation and commercial banks lending volumes. It indicates that as inflation increases, the commercial bank lending volumes in Kenya declines. Conversely, there exists positive relationship between the base lending rates and inflation rates. As inflation increases, so does the base lending rates. The study sought to establish if similar trend occurs in Kenya Commercial Bank Limited.

Ralf *et al.* (2000) undertaking a study on the determinants of bank lending performance in Germany showed that lending rate is a key factor in the commercial bank lending policy such that when commercial bank lending volume decreases, the commercial banks profitability on lending is depressed. He further observes that during economic boom in Spain over 1985-1997 period, the commercial banks increased their market share by increasing lending volumes even to borrowers of low credit quality thereby increasing the amount of bad loans.

Brownbridge, (1998) said that poor quality loan faced by the local commercial banks in developing countries are compounded by variables that determine macroeconomic stability such as inflation rate and commercial bank lending rate which have consequences in loan quality from local commercial banks. The net effects of this action are the negative impact on the commercial banks balance sheets. Quoting from assessment of the usefulness of total lending volumes by commercial banks as an indicator of commercial bank distress by Pesola (2001), observed that increase in interest rates above expected one and the growth of commercial bank lending volumes may have contributed to banking crisis in Finland and Sweden.

Gichuki *et al.* (2012) quote from Darryl (1969), noted that a reduction in the official interest rate encourages the commercial banks to borrow money from the Central banks, thereby increasing the money supply in the economy. Njagi (2012) presenting on the relationship between interest rates and money supply confirms that increase in interest rates is used by CBK to limit lending and money supply hence curbs inflation. This suggests that lending volumes depends on both inflation and interest rates. This study will therefore determine the effects of inflation on the KCB lending volumes.

1.1.3 Inflation and Bank lending Rates

Melnik *et al.* (1986) notes that loan volume is positively correlated with commercial bank lending rate whereas decline in deposit supply reduce loan supply. According to Economic Watch (2010), in most developed economies for instance the United States of America, banks try to keep the interest rates on commercial banks' lending equal to the inflation rate.

Taner (2000) in his study on the impacts of inflation vulnerability on credit institutions: unexpected inflation raises interest rates, diminishes loaning volumes and influence credits request. This infers that an expansion in inflation may raise the loaning rates and prompt low loaning volumes. Emon (2012) affirms that moneylenders know that expansions lessen the value of their cash over the term of an advance, so they raise the loan fees to adjust for the misfortune.

The expanded financing costs may hence influence the acquiring of loans by bank customers. This additionally depicts a positive relationship between the inflation rates and the loaning rates despite the fact that the extent to which they influence each other periods is not certain.

1.1.4 Inflation and Banks Lending Behaviour

According to Mangani (2009), both inflation rate and lending rate in Malawi between the years, 1970 and 2008 exhibited an upward trend. The nature of behaviour of these macroeconomic indicators may results into varying responses by the commercial bank borrowing and investment by both public sector and private sector.

Latifet *al.* (2009) study on the analysis of determinants of investment in Senegal for the period spanning 1994 and 2000 reveals that the desire to invest comes out of low and favourable lending rates that induce high lending volumes by the commercial banks. Felicia *et al.* (2011) asserts that in Nigeria, commercial bank deposits have the greatest influence on the banks' lending behaviour while Usman (1999) asserts that commercial banks' lending in Nigeria are influenced by the strict regulations on the percentage of interest they are required pay on deposits.

In Kenya(Economic Survey, 2013), there has been negative association between inflation and commercial banks' lending volumes and base lending rates. This is because as inflation increases, the commercial bank lending volumes in Kenya declines. Conversely, there exists positive relationship between the base lending rates and inflation rates. As inflation increases, so does the base lending rates (Economic Survey, 2013). The study sought to establish if similar trend occur and how they influence the banks financial performance.

1.1.5 Banks in Kenya

Banks in Kenya are private or public owned organizations that accept deposits, give credit facilities, and give monetary administrations services to individuals and organizations, for example, cross boarder banking, documentary collection and trade finance facilitation. In Kenya, the Central Bank of Kenya (CBK) manages licenses and controls business of banks, as indicated by the Banking Act (Cap 488).

In Kenya right now has 44 licenced banks and one home loan finance bank. Of these 44 organizations, local people own 31 and foreigners own 13 banks. The Kenyan Government has a generous shareholding in three of Kenya's banks. The rest of the banks are family owned entities. Business banks in Kenya accept deposits from people and organizations and make profits by utilizing the deposits to render advances to people and organizations with a higher loan interest.

Numerous business banks additionally offer a wide assortment of services. Banks are in charge of safekeeping of client deposits and loaning the returns to business, industries, legislative and non-profit making organizations, (KBA, 2014). Banks additionally give marketing services in metropolitan, government bonds and corporate securities. Banks give advisory and consulting services to clients and trust. Business banks assume big role in guaranteeing economic progress. The banks are open systems working in a turbulent environment. Their survival relies upon the capacity to anchor a fit with this environment (Central Bank of Kenya, 2011).

1.1.6 Inflation Rates in Kenya History/Trend

Kenya is constantly faced with high inflation from high food and fuel costs and in addition to demand pressures. The banks in Kenya are prone to many types of risks, which have realized incidental system crisis (KBA, 2014). They incorporate risks such as liquidity (investors may ask for withdrawals more than accessible funds), credit (there is a probability of default on advances), and loan fee risk (the bank may be unprofitable, in the event that they pay more interest on deposits than they make in loaning exercises) (Ndung'u, 2014). Due to these, the central bank has tight financial arrangement, to stem instability in the foreign trade markets to check cash speculation actions(KBA, 2014).

In Kenya, the average lending rates have been reducing from a figure of 19 percent in the year 2002 to an average of 13 Percent over the last five years. Commercial bank's average lending rates declined from 13.74 percent in December 2006 to 12.56 per cent in October

2007. There are a number of factors that have influenced the lending rates including inflation, government policies, the macroeconomic variables and banks specific factors such as return on investment and covering cost of operation (Ndung'u and Ngugi, 2000).

The Central Bank of Kenya (CBK) plays an important role in formulating and implementing monetary policy, this has helped in achieving, and maintaining low inflation as one of its key mandates (Ndung'u and Ngugi, 2000). Since its establishment in 1966, the CBK has used a key monetary framework to pursue the inflation objective. The monetary policy strategy has been based on the presumption that money matter. The behaviour of monetary institutions has major influence on the performance of the economy and especially on inflation (Ndung'u and Ngugi, 2000). Although commercial banks' lending rates are determined by numerous factors outside the CBK's control, the Monetary policy committee which is the key policy organ of the central bank notes that structural changes in the deposit and credits markets, including introduction of development banking products, can play a significant role in influencing a downward trend in the commercial bank lending rates (Njuguna, 1999) and volumes.

1.2 Research Problem

Commercial banks have been struggling with fluctuating lending volumes and lending rates by both retail and corporate customers (KBA, 2013). Kenya Commercial banks are not an exception to this yet there has been minimal study to show whether this may be due to high lending rates, or are influenced by inflationary forces. Economic Watch (2010) states that in most developed countries such as the United States of America, commercial banks march the interest rates on lending to the inflation rate. However, when the inflation rate increase, financial institutions issuing debt instruments are forced to lure investors with a higher interest rate.

Barajas *et al.* (1999) identified the interest rates as a factor that determines loan volumes in Colombia while Ziramba (2008) study on "Bank lending, expenditure components and inflation in South Africa" confirms this assertion and states that there exist correlation between bank loans and lending rates.

Chowdhury (2012) support the fact that there is relationship between current rates of lending and past rates of inflation. If commercial lending rates are not adjusted for changes in inflation then the real rate of return decreases.

Thulani (2012) study investigated the relationship between inflation and interest rate spread in Kenya and the extent to which the Fisher effect hypothesis holds. The study utilized annual time series data for the fifteen-year period starting from the year 1997 to the year 2011. The study found that inflation had a long-term relationship with interest rate.

In past studies such as Liu et al. (2000), Ubide (1997) and Khan et al. (2006) have addressed the determinants of banking lending rates, performance, and use of monetary policy by the central banks to control money markets.

From these previous studies, it is evident that none of the studies did a review the effects of inflation on Commercial Banks new lending volumes. This study attempted to bridge the gap by determining the effects of inflation on Kenya Commercial Banks lending volumes and rates and inflation with specific focus on new loans advanced annually for a period of five years. The study was done before interest rate capping was introduced by CBK.

1.3 Research Objectives

The aim of this research is to determine the effects of inflation on commercial banks' lending volumes and value.

1.3.1 Specific Objectives

To determine the relationship between:

- Annual inflation rate and Kenya Commercial Banks lending rates
- Lending volumes
- Banks deposit Rates
- Banks deposit volumes

1.4 Significance of the Study

The study will provide commercial banks with the basis for explaining some of the factors that contribute to the changing patterns in lending volumes by the commercial banks in

Kenya. It may also trigger the commercial banks to innovate new policies on bank lending that are attractive to the borrower.

The study would therefore help them understand how the inflation rate fluctuation pattern is affecting the banks overall lending volume and loan default rate thus prompt the senior management to look into ways of navigating it either through policy change in order to maximize their earnings.

The study will be of interest to both researchers and academicians who seek to explore or investigate the contribution of inflation rate on Commercial Banks lending pattern in Kenya and thereby lay a foundation for carrying out further related studies.

CHAPTER TWO

2.0 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 banks' lending behaviour. It also provides a conclusion identifying the gap of the study.

2.2 Review of Theories

This segment looks at the hypotheses under which the investigation depends on. A hypothetical writing depicts courses by which even unpredictable increments in the rate of inflation influence the capacity of the financial sector to apportion assets adequately. Recent theories emphasize the importance of informational availability in the banking sector and demonstrate how increases in inflation negatively affect credit market with adverse repercussions for financial sector performance and therefore long-run real activity.

2.2.1 The Classical Quantity Theory of Money

Fisher (1911) built up this hypothesis. Observational investigations of quantity theory of money (QTM) have a focus specifically on the connection between the rate of change of the cash stock and inflation. In financial matters, the quantity theory of money is the hypothesis that cash supply has an immediate, corresponding association with the price level (Fisher, 1911).

While renowned business examiners agree that the amount speculation stays consistent as time goes on, there is still inconsistency about its application in the short run. commentators of the theory contend that money changes isn't steady and, in the short-run, costs are sticky, subsequently the association between money supply and value of the same money (Friedman, 1987). The quantity hypothesis of money, has for some time been one of the acknowledged doctrines of the socialist monetary authority. The rendition of the quantity approach adopted is obviously the classical transaction based other than the modern one, Friedmanite expansion, which incorporates contemplation on loan fees, assets and wealth, and versatile desires, among different factors (Friedman, 1987).

2.2.2 The Keynesian Theory

Keynes contended that an expansion or diminishing in money supply just influences the interest for products and enterprises indirectly and the level of income. For instance, an expansion in money supply prompts a fall in the rate of interest, which in turn makes private venture to reduce and ultimately results in a reduction in the level of national income. The effect on the economy of the increase in money supply relies upon the impact of the financing costs created. As per Keynesian view, both speculation request and shopper request are not responsive to loan interest changes. That is the reason the premium is inelastic, Keynes contended that the volume of ventures depends intensely on innovative changes and business certainty and desires, henceforth an expansion in the supply of cash will have limited affect total interest and therefore generally have little impact on yield and employment. Keynesian contends that financial arrangement will have restricted impact on the economy and national income, since increment in money supply will have a counter influenced in the decreases in the velocity of cash available for use. As indicated by Keynes, increment in cash supply does not mean a relative increment in the price level.

2.2.3 Monetarist Theory

Monetarists contend that since cash is an immediate substitute for every other asset, an increase in the supply of cash, given a steady velocity of circulation, will directly affect the need for different resources. In the event that the aggregate yield of the economy is settled, an increase in the cash supply will lead specifically to more expensive rates (Friedman, 1987).

Monetarists accordingly achieve indistinguishable end from the hypothesis of cash that an increase in cash supply will lead directly to an increase in prices and most likely income, an expansion in genuine yield thus an increment in employment (Friedman, 1987). Over the long haul , the contention changes to, increments in the money supply will mean more expensive rates except if there is a growth and development in the economy. Monetarist school of economics thought that cash supply is a key determinant of the level of creation of goods and services in the short run and the rate of inflation over the long haul. With the end goal to limit vulnerability monetarist theory is upheld for the support of a steady rate of development of money supply (Friedman, 1987).

2.3 Determinant of Commercial Banks Lending Behaviours

This refers to the components influencing the credit extension by banks. Banks consider various factors in deciding the loaning decision, which identifies which area of economy to loan to, customers to take risk on and the sum to be credited. These variables are financing costs, liquidity, security quality and capital availability. Advance pricing or financing cost is the most essential elements considered by both the borrower and the loaning bank during the loaning process. Banks can't demand low interest charges that are too low, this will translate to insufficient income to repay their depositors, cater for their general costs and cater for non-performing advances. Similarly, they can't impose too high charges that will strain the relationship with their customers.

According to the Neoclassical Credit Market Model, the credit terms placed by banks determines the market dynamics. If collateral and other covenants attached to loans are held constant, the only price mechanism becomes the interest rate. The model therefore postulates that an increase in need for credit facilities will result in high interest rates and vice versa. It is believed that the higher degree of failure by the borrower to honour debt obligation. Low interest rate might trigger high demand for credit, which in turn may lead to currency devaluation. To maintain currency value, the interest rate must be adjusted by central banks from time to time to make loans more expensive.

This can be countered by adjusting the Central Bank Rate (CBR) upward thus making the loans less attractive. Commercial banks on the other hand, will have to increase their interest rates leading to reduced lending as credit becomes expensive. The cost of borrowing is reduced by low interest rate, which in turn drives the investment activities and high consumer durables purchase. Banks may also ease lending policy given an expectation that economic activities will strengthen, thereby boosting spending power by businesses and households. Low interest rate may trigger investing into stocks, raising households' financial assets. The impact of this may be increased consumer spending, making firms' investment projects more attractive. The main concern for the empirical analysis arises from the fact that banks heterogeneously react to changes in monetary policy. These varied responses by commercial banks emanate from their diverse balance sheet dynamics.

A borrower of sound financial position is usually granted long-term interest rates on loans for a longer period. These rates are mirrored in Kenya by the interest rate charged on long-term financial securities such as bonds. On the other hand, short-term interest rates are based on rates charged on treasury bills. The short-term rates have higher fluctuations but at the same time averages lower compared to the long-term rates. Liquidity refers to a bank's ability to honour its financial obligations, mainly to depositors, whenever they are in need of their deposits. The largest asset in a bank's balance sheet is probably loan portfolio, which contributes heavily to banks revenue. This makes it to be the largest source of commercial banks' risk to its safety and sound position.

A lower demand for credit facilities leads the commercial banks to keep more of short-term assets, whereas a higher loan demand triggers holding of less liquid assets, which is caused by the high profits associated with the long-term loans. Thus, loans and advances posit an inverse relationship with the banks liquidity.

Ituwe (1983) mentions that the availability of cash in a banks vault determines a banks capacity to extend credit facilities. This is informed by the fact that the bank should be able to pay the client money on demand, which is done in two ways, either through cash withdrawal or banks accounts, which is basically use of cheques. Banks are therefore required to keep sensible amount of cash to cover their clients demand.

In Kenya, according to CBK (2007), liquidity is determined as a ratio of a bank's net liquid assets to its net deposits and short-term liabilities. This shows ability of an institution to honour its maturing obligations. The banking sector continued to register a strong liquidity position. A strong liquidity position in economy is a demonstration of the sectors liking for liquid assets, which are generally government related financial securities, which are risk free in nature.

The regulator (CBK) has set a minimum requirement of 20 per cent to be maintained by the commercial banks in Kenya. Asset quality refers to the relationship between loan provisions and the total loans. The loan provision is an expense to the profit and loss statements and therefore needs to be mitigated appropriately. It therefore measures the efficiency of a bank management in raising revenues by extending loans and advances. The lending efficiency here refers to the relationship between non-performing loan book to the total loan book.

Lending carries with it risks in that the loan repayments is not guaranteed all the time and largely depend on other factors which are within the borrowers control. Managing loans therefore in an appropriate way has positive effect on both the performance of the bank and on the borrower and the economy of a country as a whole.

Amidu and Hinson (2006), lending portfolio portrays the bank loans quality, which in turn shows the relationship between credit risk and bank lending. The banks' capital serves as a protection of the bank's depositors' funds. The capital size compared to deposits determines the risk level that a bank can take. Banks with bigger capital structures can extend loans that have longer maturities and relatively high risk.

Kishan and Opilela (2000) on the other hand mentions that size of the bank's asset and its capital had an inverse relation to the bank's ability to raise funds and continue growing its loan portfolio during economic contraction period. Capital adequacy illustrates the potency of a bank's capital against other financial and economic variation.

2.4 Empirical Studies

According to Olga (2010) using CPI data from USA on a study entitled the relation between interest rates and inflation, inflation rises or falls much earlier than compared to the interest rates rise or fall. This imply that interest rate can be partially predicted by inflation.

Plosser (2008) takes note of that the lower the inflation rate, the lower the ostensible financing costs. The Author presents information recommending that the normal genuine momentary financing cost over a monetary cycle decidedly relate with the rate of inflation for an number of developed economies in the course of the recent decade. He further calls attention to various variables that may represent this relationship, incorporating a decrease in large scale monetary unpredictability, lessened tax wedge between real interest and nominal loan costs at lower inflation.

Beck et al. (2013) in an investigation on bank loaning in an economy in connection to inflationary changes within an economy noted that inflation influences commercial banks loaning rates even when inflation rates are generally low. They further noticed that even in the wake of controlling different factors consistent in a multivariate factual investigation,

despite everything they found huge negative relationship between inflation and bank loaning size.

Eco bank Stockbrokers Limited, Mr. Iddrisu Mahama, in a study by Cobbinah Nicholas (2011) looked at the Impact of the Bank of Ghana policy rate on commercial bank lending rate. He noted that there was expectation of a two hundred basis point reduction in the policy rate from 15% to 13%. He was of the view that economic fundamentals such as inflation and Government dated securities were all going down. He stated that these should signal policy direction to further reduce the base rate.

Kamisky and Reinhart (2006), noticed that there is a positive relations between inflation and loan fee. An change in inflation results into an increase loan cost charged, this is clarified by the fact that banks need to make profit for the cash they loan and if there is inflation this implies that genuine estimation of the speculator's value is being minimized at the yearly inflation rate.

Nicholas (2011) further clarified that inflation lessens the value of money. This means moneylenders request higher financing costs on credits. Banks need to be redressed, not just to forfeit the utilization of their cash and accepting a less return, but also in forgoing the value of money in the term of the loan .The borrowers, likewise expecting the estimation value of the cash to decrease before they reimburse the credit, will pay higher rates to get cash now. The ability to pay higher rates to obtain loans is fortified if the borrower utilizes the cash to purchase something that is expected to increase in return with the inflation. In this way, inflation and inflationary speculations can force base rates upward.

2.5 Chapter Summary

From the literature review, several studies have been carried out on various aspects of inflation. The discussion was broken down into various specific objectives with a discussion on what other studies have found on the effects of inflation on other lending parameters such as base lending rate, lending volumes and rate of loan defaulting was done.

However , an in depth study on the effects of inflation in commercial banks' lending behaviour in Kenya with a specific focus of five major commercial banks in Kenya was not looked at in this literature review; hence the purpose of this research so as to close this gap.

The following chapter on the research methodology was used to determine the effects of inflation on commercial banks' lending in Kenya.

This chapter reviewed the empirical and theoretical work brought out by different researchers in relation to inflation, commercial bank lending volumes, lending rate and default rate. Comparable investigations done in various economies uncovered diverse reaction with a large portion of the research indicating solid relationship between the macroeconomics factors under study while others gave an opposite sentiment.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This part includes the strategy or system that was utilized to distinguish, select process and break down data about the subject of study. The examination approach exhibits the plan, population, test estimate, inspecting method, nature of information utilized in the investigation, information gathering devices, pretesting of research instruments, information collection strategy, estimation and examination. This area answers the exploration question brought up in the examination. It incorporates the inquiry structures of the study, target population, information collection instruments, information gathering strategies and lastly information investigation procedures.

3.2 Research Design

The investigation utilized an unmistakable research plan that portrays the situation all things being considered at present. A descriptive report endeavours to depict or characterize a subject, by making a profile of the findings, individuals, or events, through the collection of data and organization of the frequencies on research factors or their interactions as demonstrated by Cooper and Schindler (2003). Descriptive research is more unbending than an exploratory research and looks to depict uses of items, decide the extent of the population that utilizes an item, or foresee future interest for that item. Kombo and Tromp (2006) takes note that the decision to use descriptive research review is made if an investigator or the researcher is intrigued on the situation effectively existing in the field and no factor will be changed.

This illustrative research match the purpose for this investigation, as the motivation behind this examination is to investigate the impacts of inflation on loaning conduct of banks in Kenya taking sample of the five (5) most profitable banks in Kenya. Through collection of secondary data from publication from CBK, journals and World Bank reports, the analyst was able decide the degree to which inflation and loan interest rates influence the lending behaviour.

3.3 Population of Study

The sample of this examination was the five (5) most profitable Banks working in Kenya. The research information was from published data. The population incorporated the below banks.

1. Equity Bank
2. Kenya Commercial Bank
3. Standard Chartered Bank
4. Barclays Bank
5. Cooperative Bank

3.4 Sampling and sample size

This study utilized quarterly time series secondary information from January 2012 to March 2016 of banks' lending conduct, inflation and economic development. This investigation will concentrate on loaning rates in general as charged by various banks.

3.5 Data Collection

This investigation will gather information from daily papers, published books, journals, magazines and company handbooks. The examination is concerned about factors, which are promptly accessible from published sources. Published information was gathered from Journals, in house publications by banks, the banking survey, CBK reports, banks financial report and the internet

3.6 Data Analysis

The specialist edited the information for fulfilment and consistency. SPSS adaptation 20 and Excel helped the analyst to portray the information. The Likert scale was helpful in analysing the mean score and standard deviation. The outcomes of the study were presented on charts and tables to help in comparison and further investigation. This came up with quantitative reports through measure of central tendency tabulation. The content analysis was utilized to investigate the researchers view on the effects of inflation on the top five banks in Kenya. On testing the connection between inflation and loaning behaviour's in Kenya, the examination looked specifically at credit portfolio performance over a period of January 2012 to June 2016 quarterly. The researcher further utilized a Pearson's product moment correlation analysis multivariate and regression model to examine connection between inflation and the loaning practices in banks. The researcher used regression method, as it is helpful for its

ability to show the nature of influence of independent factor on an independent factor. Further, correlation analysis was used to demonstrate the magnitude of the connection between the independent factors and the dependent variable.

3.7.1 Analytical Model

To find out the relationship between inflation and the lending behaviours of commercial banks, the following regression model was applied:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where: Y = Bank Lending (ksh);

β_0 = Constant Term;

β_1 and β_2 = Regression coefficients;

X1= Inflation (%); X2= Banks Weighted Average Interest rate;

ε = Error term

The hypothesis of the study:

H0: Inflation has a relationship with Bank lending volumes

H1: Inflation has no relationship with Bank lending volumes

The Equation:

- i. Dependent Variable = Bank Lending (Shs)
- ii. Independent Variable = Inflation
- iii. Control Variables= Banks Weighted Average Interest rate

The research tested 95% confidence level and 5% significant level. For a significance number found to lie outside the constructed confidence interval, the null hypothesis was rejected

CHAPTER FOUR

4.0 DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The Statistical Package for Social Sciences (SPSS) Version 24 computer package was utilized. The years under investigation were between 2012 – 2016.

The examinations, frequencies and correlation between the factors were then determined using the analysis method on the software to give a various results that were displayed in the subheadings as follows.

4.2 Data Presentation

Appendix I is a Table on data collected on various variables that is Bank Lending (in Kshs), Inflation (%), and Weighted Average interest rates data series for the period 2012 to 2016.

4.2.1 Descriptive Statistics

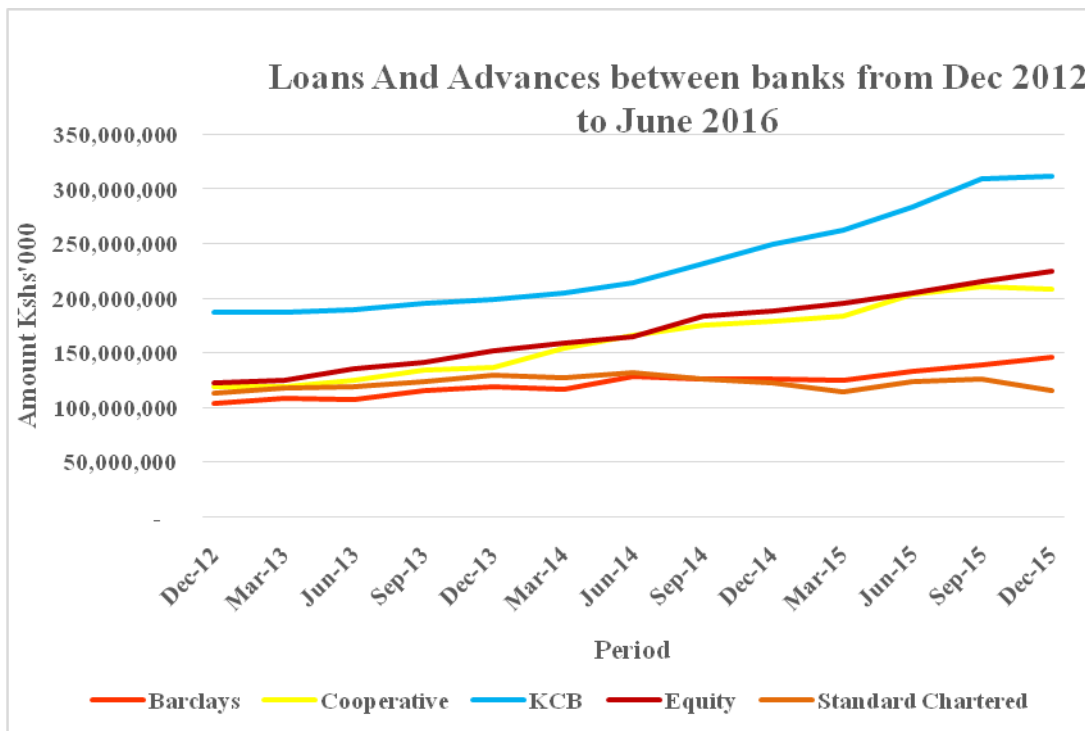
Table 1 Summary of Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Weighted interest rate	15	15.46%	18.30%	16.9793%	0.90063%	.811
Inflation rate	15	3.20%	8.29%	6.2340%	1.36673%	1.868
Average Loans	15	129083869	205134454	167664192.10	27639367.630	763934643000000.00
Valid N (list wise)	15					

Table 1 above shows Interest rates fluctuated between a high of 18.30% in December 2015 and a low of 15.46% in March 2015 averaging at 16.98% for the period. Inflation rate fluctuates between a high of 8.29% in September 2013 and a low of 3.20% in December 2012 averaging at 6.23% over the period. The Average volume of Loans advanced by the 5 sampled banks for the time span range between a maximum of in 205,134,454,000Kshs June

2016 to a minimum of 129,083,869,000Kshs in December 2012 averaging at 167,664,192,000Kshs.

Figure 1: Loans advanced by the Various Banks



From the Figure 1 above, Loans advanced by different banks have maintained an upward trend across the board with the exception of Standard Chartered which has experienced a downward trend from June 2014 to June 2016. The difference in the volume of loans among the sampled banks is mainly due to the customer base and the asset level of the bank. From the figure KCB has maintained leadership in the volume of loans advanced.

Figure 2: Average Loans Advanced

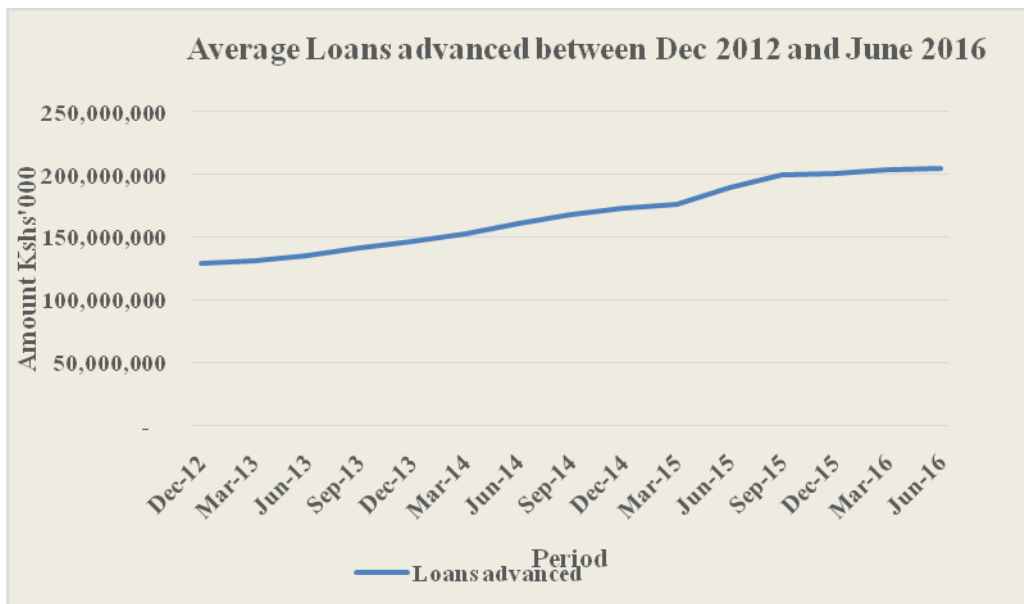
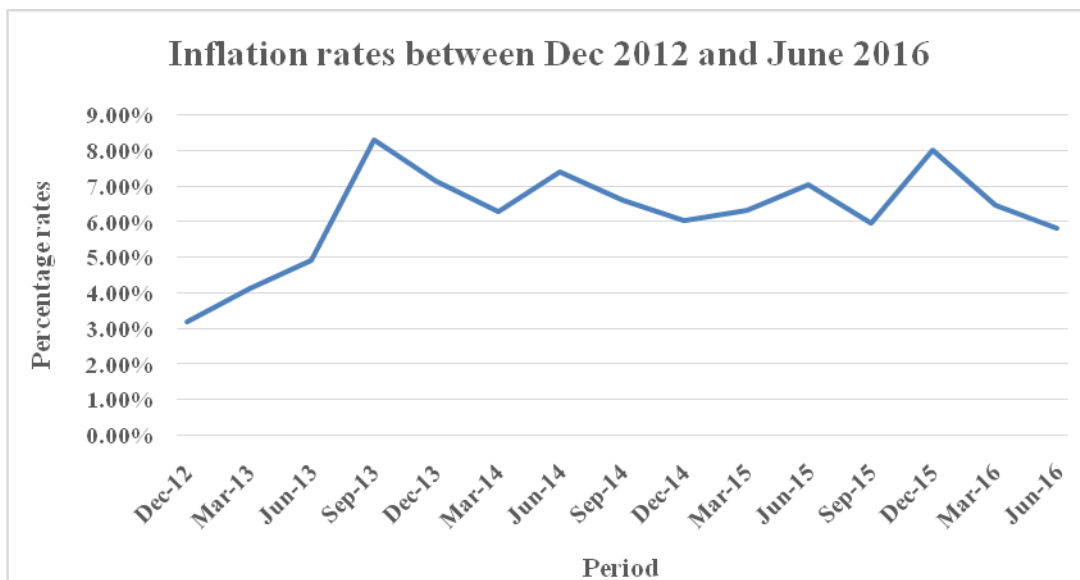


Figure 2 above shows a steady increase in the loans advanced since December 2012 to June 2016. This is mainly due to the continued uptake of loans by customers, increase in development projects in the country and the sensitization by the government towards entrepreneurship.

Figure 2: Inflation Rates



From the above Figure 2, illustrates the trend of inflation rates in the period December 2012 to June 2016. It shows low inflation from December 2012 to June 2013 due to economic variables at play in anticipation of the 2013 general election. There was a rise in trend from June 2013 with the highest level of inflation in September 2013 at 8.3% due to a change in government and politics and this position has been maintained with minimal variations since the same government is in place.

Figure 3: Trend Analysis for Weighted interest rate and Inflation

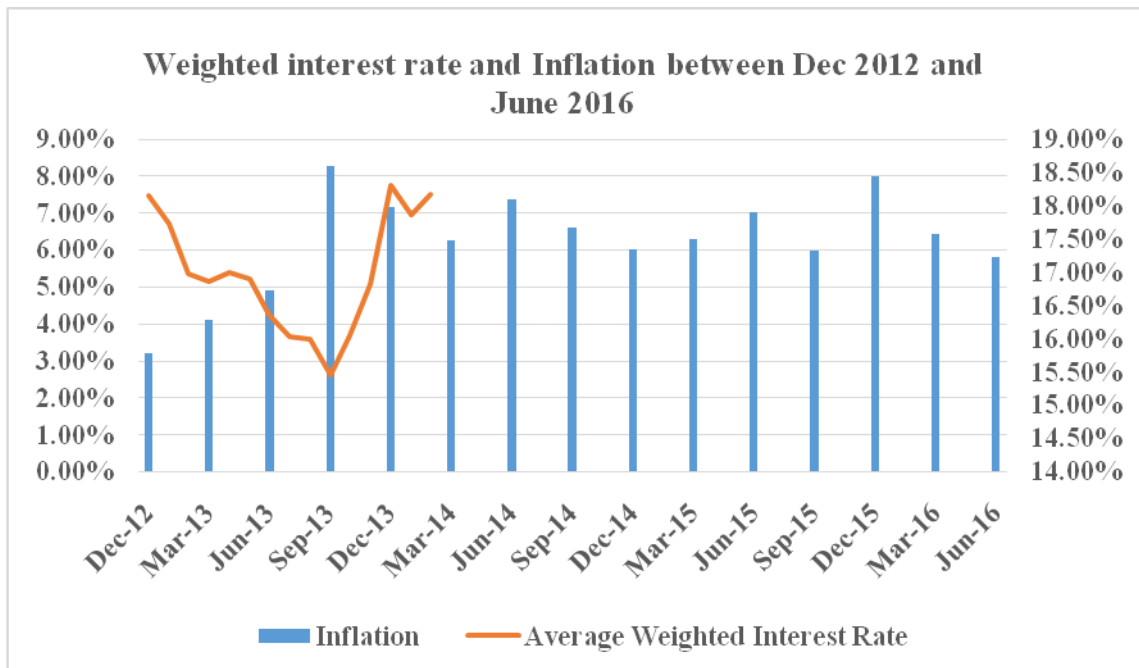


Figure 3 above shows a steady increase in the inflation rates since December 2012 with the highest rate achieved in September 2013 and December 2015. This is mainly due to change in government and the uncertainties that arise as we near the election period. The Interest rate have on the other hand fluctuated with the minimum interest rates charged by banks in March 2015 at 15.46%.

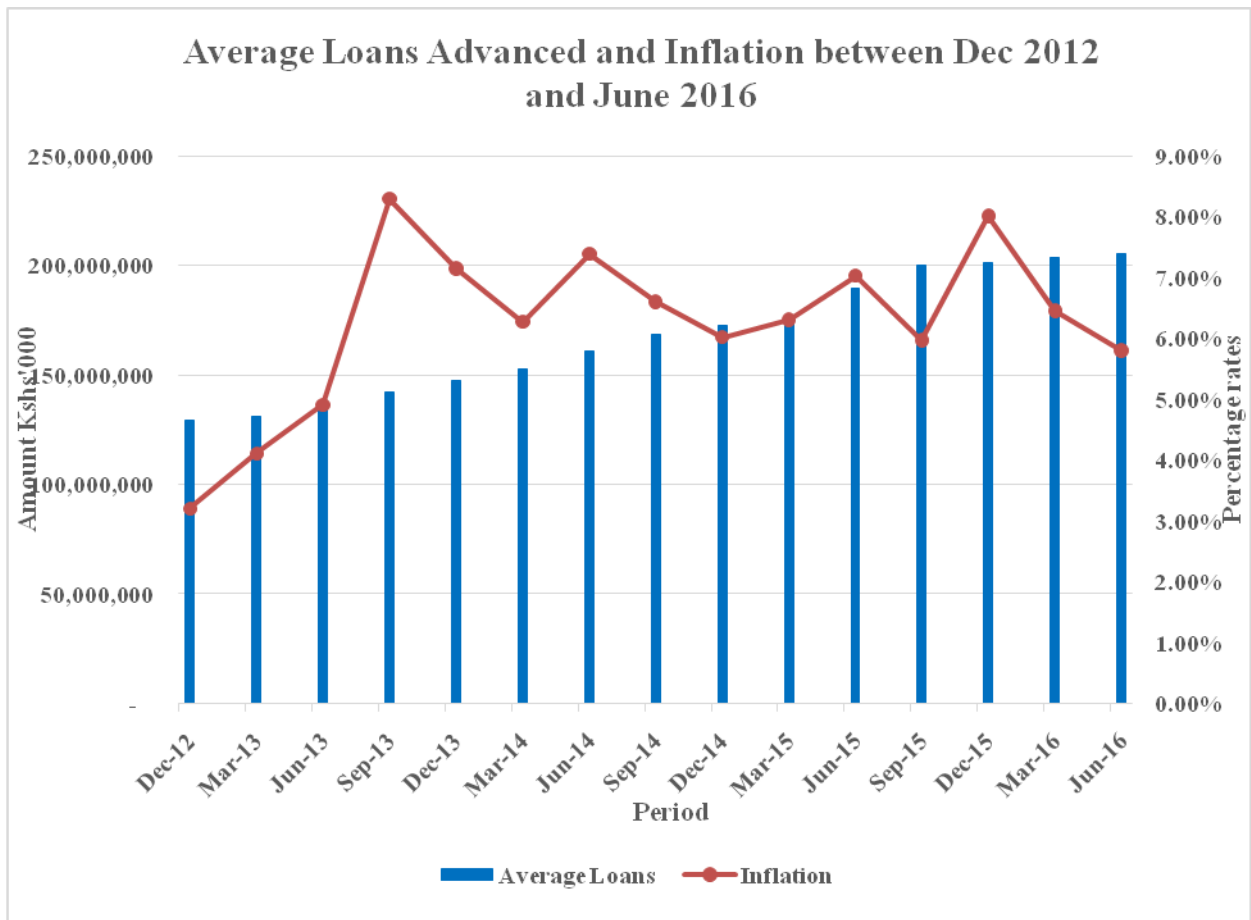


Figure 4: Trend Analysis for Average Loans Advanced and Inflation rates

Figure 4 above shows a steady increase in the loans advanced since December 2012 to June 2016. This is mainly due to the continued uptake of loans by customers, increase in development projects in the country and the sensitization by the government towards entrepreneurship. The inflation rate have on the other hand also increased but also have been fluctuating throughout the period.

4.2.2 Inferential Analyses

Inferential statistics is useful in making estimates or inductions about a population from observations and examining the sample.

Correlation examination was done on the information to build up relationship between the factors in consideration; investigations were first done between Average Loans and Inflation then between Average Loans, Inflation and interest rates

Table 2: Correlation Analyses Average Loans and Inflation

		Average Loans (Kshs)	Inflation rate
Average Loans	Pearson Correlation	1	.411**
	Sig. (2-tailed)		.128
	N	15	15
Inflation rate	Pearson Correlation	.411**	1
	Sig. (2-tailed)	.128	
	N	15	15

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

The Pearson Correlation was computed for Average Loans and Inflation data series resulting in a correlation coefficient of 0.411 at the 0.05 (2-tailed) significance level which indicates a positive correlation between the variables; this means that there is a huge relationship between bank lending measured by loans advanced, and inflation.

Table 3: Correlations Analyses for all the Variables

		Average Loans	Weighted interest rate	Inflation rate
Average Loans	Pearson Correlation	1	.037	.411
	Sig. (2-tailed)		.895	.128
	N	15	15	15
Weighted interest rate	Pearson Correlation	.037	1	-.291
	Sig. (2-tailed)	.895		.293
	N	15	15	15
Inflation rate	Pearson Correlation	.411	-.291	1
	Sig. (2-tailed)	.128	.293	
	N	15	15	15

From the Table 3 above, it's evident that bank lending has positive correlation with interest rate and inflation. However, Inflation has no significant correlation with Interest rate. This implies that an increase in inflation will not have a significant impact on the interest rate charged by banks.

4.2.3 Regression Analysis and Hypothesis Testing

Notwithstanding the above examination, a multiple regression investigation was conducted to test the relationship between the independent factors. The researcher used SPSS Version 24 to help in measurement and estimations of the various regressions for the study. The results are as in the table 4:

Table 4: Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate	Durbin-Watson
1	.422 ^a	.196	.062	26774653.410	.321

Predictors: (Constant), weighted interest rate, Inflation rate
Dependent Variable: Average Loans

The two independent variables that were under review, explain only 19.6% of the changes in Loans advanced as represented by the adjusted R^2 . The R column represents the multiple correlation coefficients, this measures the quality of the prediction of dependent variable. In this case the value of R is 0.422 which shows a moderate level of prediction. However, the R^2 , which is the coefficient of determination, is 0.196 indicating that 19.6% of loans advanced by commercial banks in Kenya can be explained by inflation and interest rate, the other 81.4% can be explained by other variables, which were not in the model.

Table 5: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2092500221000000.000	2	1046250111000000.000	1.459	.271b
	Residual	8602584781000000.000	12	716882065100000.000		
	Total	10695085000000000.000	14			
a. Dependent Variable: Average Loans						
b. Predictors: (Constant), Weighted interest rate, Inflation rate						

To test for the probability of a linear relationship between bank lending measured by loans advanced and, weighted interest rate and Inflation rate, ANOVA was used . The results from the analysis of variance as per table 5 shows that the regression relationship between bank

lending measured by loans advanced and Weighted interest rate and Inflation rate are statistically insignificant at 5% level of significance (F value = 1.459, p-value = 0.271 > 0.05), meaning that there is an insignificant effect of the weighted interest rate and Inflation rate bank lending in Kenya. This can be shown by the significant level which is 0.271 which is higher than 0.05.

Table 6: Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20326193.730	154550619.200		.132	.898
	Inflation rate	9315073.126	5471912.985	.461	1.702	.114
	Weighted interest rate	5257440.371	8303776.854	.171	.633	.539

a. Dependent Variable: Average Loans

The researcher conducted a multiple regression analysis so as to determine the connection between commercial bank lending and inflation and the estimated model was:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$$

$$Y = 20326193.730 + 9315073.126X_1 + 5257440.371X_2 + \dots \dots \dots \text{Unstandardized Equation}$$

$$Y = 0.461X_1 + 0.171X_2 + \dots \dots \dots \text{Standardized Equation}$$

Std. Error [154550619.200] [5471912.985] [8303776.854]

t- Statistics [0.132] [1.702] [0.633]

$$R^2 = 0.196$$

$$\text{Adjusted } R^2 = 0.62$$

$$\text{Multiple } R = 0.422$$

$$\text{Durbin Watson Statistic} = 0.321$$

The variation as explained by the regression model as indicated by R square and adjusted R is 0.196 or 19.6 % and 0.62 or 62% show that the model is strong for the study. It is clear that there exists other factors that affect commercial banks' lending not explained by the model.

The mean bank lending intercept of 20326193.730 indicates that for every increase on the variables considered, there are 20326193.730 increases in loans advanced. The Durbin Watson Statistic of 0.321 falls between 0 and 4 and more closely to 0 indicating that the model is good. This means if inflation will change by 1%, Log of loans advanced will change

by 9315073.126, which means bank lending (loans advanced) will increase by 9,315073.126 million. The regression coefficient represents the amount of change in the dependent variable for a one unit change in the independent variable. (Hair, 2006)

The multiple R of 0.422 indicates that there is moderate relationship between bank lending as measured by loans advanced and variables considered. The regression model result is pointing out that Inflation has a positive impact on commercial bank lending (loans advanced).

The t – statistics were used to test the hypothesis that there is a relationship between Commercial banks' lending(Average Loans advanced) and inflation in Kenya in the regression equation above.

H0: $\beta_1 \neq 0$: Inflation has a relationship with Commercial banks' lending

H1: $\beta_0 = 0$: Inflation has no relationship with Commercial banks' lending

From the analysis, the t – statistics is 0.196, the F value is 1.459 and the p value is 0.271

P value $> \alpha$ (0.05) and the p value $\neq 0$; thus accept the null hypothesis.

The general conclusion is there exists a positive significant relationship between Commercial banks' lending and inflation in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The target of this investigation was to determine the impacts of inflation on banks loaning in Kenya. This part is a recap of the detailed findings in the past sections and proposals for further research to specialists and policy makers.

5.2 Summary

In summary, there is a positive significant relationship between inflation and banks lending in Kenya. This is because inflation influences the volume of loans advanced to customers. Customers who borrow to finance something whose value is expected to increase, for example real estate and other infrastructure, will borrow more when the inflation is high.

Inflation diminishes the value of money and the banks therefore request higher financing returns on advances. Regardless of this reality, the investigation demonstrates that there is no significant connection among inflation and the financing costs charged by banks in Kenya. This is as a result of the fact that there are a number of clients in Kenya willing to pay high rates to get cash whose value may decline before they repay the facilities advanced..

5.3 Conclusions

From the period of study, there is a significant positive relationship between inflation and commercial banks' lending in Kenya. That is, inflation greatly influences the volumes of loans advanced by banks. Inflation reduces the purchasing power of money and leads to increase in prices of commodities leading to more borrowing. Consequently, expectation of an increase in inflation increases the willingness for customers to borrow to finance things that will increase in value as inflation rises. However, commercial banks' lending rates may also as a result by other factors not considered in this research.

5.4 Policy Recommendations

In this research, the connection between inflation and Commercial banks' lending in Kenya is significant. Since the study focussed on only 5 commercial banks out of a total of 42 in Kenya, various stakeholders in this industry should strive to carry out researches on all the banks in Kenya. This will enable them establish whether this relationship still holds for the country since most of Banks studied serve a certain market niche. A study of other lending institutions is also recommended such as the Micro Finance Institutions, Savings, and Credit Cooperative Societies since they serve different categories of customers whose borrowing trends differ with relation to inflation and interest rates.

The Banking industry in Kenya has been quite dynamic especially in the period of study due to revised policy and regulation guidelines, which affected the reporting mechanisms for financial reports. Despite the fact that the banks are supposed to publish their periodic reports quarterly, information relating to interest rates charged by banks is not easily available. The researcher opted to use the Central Banks commercial banks' weighted average interest rates for reliability. We recommend that a policy be developed requiring banks to publish the applicable interest rates charged to customers periodically to enable customers make better financial decisions.

5.5 Limitations of the Study

This research has focussed on the five largest banks in Kenya to establish the connection between inflation and commercial banks lending behaviour and hence there is need to focus on all the commercial banks in Kenya.

The banks are not obligated to disclose the interest rates charged on loans and advances in their financial reporting. Obtaining the information directly from the bank is also a challenge due to the sensitivity of the matter. There is need to establish a mechanism or policy to ensure full disclosure to the public of the actual interest rates charged to enhance healthy competition among the banks as well as enable customers make better financial decisions.

5.6 Suggestions for Further Research

Further research could be done on the relationship of inflation and financial institutions lending in Kenya. This could be through the study of all licensed and regulated financial institutions such as banks, microfinance institutions and savings and credit cooperative societies.

Another important extension of this study is to extend this research to the East African Community (EAC) as the EAC propagates to have a well-established and feasible trading bloc.

ANNEX 1

Period	Weighted interest rate	Inflation	Loan Advanced					
			Barclays	Cooperative	KCB	Equity	Standard Chartered	Average Loans
Dec-12	18.15%	3.20%	104,204,295	119,087,748	187,022,664	122,410,013	112,694,623	129,083,869
Mar-13	17.73%	4.11%	108,213,447	119,107,304	186,542,815	124,985,393	117,304,968	131,230,785
Jun-13	16.97%	4.91%	107,050,039	124,922,159	190,000,000	134,941,450	118,369,916	135,056,713
Sep-13	16.86%	8.29%	115,000,000	134,304,764	195,568,503	141,152,830	123,633,648	141,931,949
Dec-13	16.99%	7.15%	118,361,911	137,051,537	198,370,069	152,028,916	129,672,004	147,096,887
Mar-14	16.91%	6.27%	116,775,176	154,597,026	204,646,324	159,188,825	127,687,091	152,578,888
Jun-14	16.36%	7.39%	128,446,955	165,600,406	213,663,852	165,138,876	131,699,706	160,909,959
Sep-14	16.04%	6.60%	126,257,900	175,702,704	231,654,020	183,167,801	125,392,306	168,434,946
Dec-14	15.99%	6.02%	125,423,371	178,978,586	248,823,710	187,976,229	122,749,233	172,790,226
Mar-15	15.46%	6.31%	125,295,377	183,139,637	262,311,085	195,503,777	114,060,421	176,062,059
Jun-15	16.06%	7.03%	133,554,804	203,407,985	283,200,200	205,249,347	123,256,075	189,733,682
Sep-15	16.82%	5.97%	138,997,894	210,607,227	309,091,297	215,695,120	126,513,732	200,181,054
Dec-15	18.30%	8.01%	145,378,553	208,074,513	312,079,984	225,036,662	115,125,427	201,139,028
Mar-16	17.87%	6.45%	152,442,482	213,234,193	313,053,740	229,474,440	109,787,058	203,598,383
Jun-16	18.18%	5.80%	153,304,211	220,425,621	315,326,989	222,350,434	114,265,013	205,134,454

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