THE IMPACT OF INTEREST RATE VOLATILITY ON BORROWINGS FROM COMMERCIAL BANKS IN KENYA (1997 - 2004)

BY

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D53/6171/2003

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AUGUST 2005

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The impact of interest rate
DECLARATION

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

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DEDICATION

This work is dedicated to my parents, Kibuthu and Wanjiku, my wife Njeri, and my two sons, Kibuthu and Wanjohi.
ACKNOWLEDGEMENT

During the entire period of this research project some people have continuously been of much help.

First and foremost my special appreciation to my supervisors, Mr. F. W. Ndende and Mr. J.N. Maingi for their tireless guidance, constructive criticism, suggestions, and advice on this work since its inception.

Heartfelt thanks to my wife Njeri for her persistent moral and spiritual support. I remain forever indebted to my parents (Kibuthu and Wanjiku) for laying a firm education foundation for me. It is on this foundation that I am and will continue building on.

My Pastor Rev. Dr. Mbatia has been supportive in many ways.

Above all I thank God for bringing me this far. To him be the glory and honour. Amen
DEFINITION OF TERMS

Interest: Interest is the charge made for borrowing a sum of money or the price paid for the use of loanable funds (interest rates are expressed as a percentage of the total sum loaned for a stated period of time usually one year. Thus for an interest rate of 15% per annum, the borrower has to pay a charge of Ksh 150 for every Ksh. 1,000 borrowed.

Simple interest rates involve a percentage return on the principal per period whereas compound interest involves a return based on both principal and accumulated interest already paid in which case they may be variable. In the latter case the interest rate may be changed in the period of the loan.

Deposit and lending interest rates for each bank are reported in table F of the C.B.K. BS (M) return. To obtain a representative rate for all the banks, weighted average rates are complied. Weighted average lending rate for a particular maturity is the sum of individual bank weighted lending rates.

Bank: An organization engaged in any of the functions of banking that is collecting, receiving, transferring, paying, lending, investing, dealing, exchanging and servicing money and claims to money both domestically and internationally. Banks are concerned mainly with making and receiving payments on behalf of their customers, accepting deposits and making advances to private individuals, companies and other organizations.

Loans and Lending: this is an arrangement in which a lender gives money to a borrower and the latter agrees to repay the money along with interest at a time in the future. The repayment is made in installments, which may be quarterly, yearly or monthly.
ABSTRACT

The research project provides a comprehensive analysis of the relationship between prevailing lending interest rates and the volume of borrowings. Data relating to prevailing lending rates and the volume of borrowings for the period of 1997 and 2004 was collected and analysed. The general objective of the study is to investigate the extent that borrowings respond to interest rate fluctuations.

The results of the study show that there exists a strong negative linear relationship between lending rates and volume of borrowings. Interest rate are an important factor determining amounts borrowed. Amounts borrowed will increase with declining lending rates, as the private sector will be more willing to take on more credit.

The policy lessons that emanate from these results relate to the management of interest rates as a monetary policy tool. Low interest rate policy will stimulate borrowings and consequently spur economic growth. A low interest regime has been associated with economic growth in many countries including Japan, Korea and USA.

The study therefore recommends to the monetary authorities to closely monitor interest rate movements. Even when the money market is liberalized and not determined by the government, it should be the responsibility of government agencies to act as market participants in attempts to achieve desired levels.
ABBREVIATIONS

NPLS: Non-performing loans

CBK: Central Bank of Kenya

NSE: Nairobi Stock Exchange

N.B.F.I: Non Bank Financial Institution
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CHAPTER 1

10 INTRODUCTION

1.1 Background Information.
In Kenya interest rates have remained an important instrument of monetary policy. Interest rates have direct effects on macroeconomic variables. It affects the exchange rate, capital investments in and out of the country, inflation as well as influencing business conditions and economic activity. Given the ensuing scenario is interest rates affects the money market and the economy's response in turn affects the interest rate. The need to establish the nature of relationship between interest rates and credit granted by commercial banks is therefore paramount (Nganda and Situma 1997)

Despite the importance of interest rates many developing countries, Kenya included have traditionally followed a policy of administratively setting interests rates. In Kenya that control regime covered the period to June 1991. The control of interest rates was then seen as desirable because it would promote investment, improve allocation of investment and avoid possible inflationary effects of interest rate liberalization.

The stated objectives of this control regime were not achieved since most developing countries continued to suffer acute macroeconomic imbalances and rising external debts.
Consequently developing countries adopted Structural Adjustment Programmes (SAPS) in an attempt to correct existing imbalances and promote competitiveness and growth.

Interest rate liberalization is meant to leave interest rate determination to market forces of demand and supply with resultant benefits of low borrowing
costs. However in Kenya with financial liberalization interest rates charged by commercial banks have been high. With liberalization the spread between lending rates and deposit rates widened to over 13%. This means lending interest rates remained high while deposit rates remained relatively low.

**Table 1.1 Deposit & Lending interest rates (per cent)**

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending rate</td>
<td>25.19</td>
<td>19.60</td>
<td>19.56</td>
<td>18.45</td>
<td>16.57</td>
</tr>
<tr>
<td>Deposit rate</td>
<td>6.15</td>
<td>4.51</td>
<td>5.095</td>
<td>3.98</td>
<td>2.39</td>
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</table>

*Source: Central Bank.*

This led to the passing of the Central Bank of Kenya (Amendment) Act 2000 with the aim of reintroducing interest rate controls. The Act required that deposit rates be pegged at 70% of the 91-day Treasury bill rate while lending interest rates be 4% above 91-day treasury bill rate. The objective of this monetary policy is to make credit affordable so that individuals, companies and other organizations can borrow for investment purposes and thus spur economic growth (Central Bank of Kenya, 2000)

Macro economic stability is vital for a successful financial liberalization process. Policy actions should be taken to ensure stability and sustainable growth of the economy. Stability of key prices including the exchange rate, commodity prices, and interest rates is crucial. This will stimulate high investment returns and reduce the credit risk consequently reducing the risk premium tagged on to the loan interest rate (Ndung’u 2000).

Despite the assumed benefits of financial liberalization (Mckinnon 1973, Shaw 1973), financial sectors in most developing countries are characterized by fragility, volatile interest rates, high risk investment and inefficiencies in the intermediation process.
Caprio (1994) argues that Liberalization of the financial sector can be expected to have a number of beneficial outcomes on the economy. Liberalization results in positive real interest rates which can be expected to raise savings thereby increasing funds that may be borrowed for investment purposes.

The market determines interest rates and thus lead to better allocation of domestic savings. A liberalized financial sector achieves these objectives because it is able to play the following roles.

1. It is able to identify most promising projects and monitor the behaviour of enterprises.
2. It is able to channel the resources from savers and investors which improves the efficiency of financial intermediaries and
3. It enhance the effectiveness of monetary policy (Situma 1994, Nganda 1997)

The rate of interest is a key factor in determining demand for loanable funds. Borrowers will demand less if the price they pay for loanable funds is high compared with the returns from investment.

High lending interest rates have a devastating effect on the economy because the cost of loanable funds is high. The price paid for borrowed funds is high and therefore investments are slow. One would not borrow to invest if the price of the money is higher than the expected return from investment.

Upto 1980 the Central bank's policy on interest rates was aimed at keeping interest rates as stable as possible. In 1981 due to spiraling inflation sparked by oil prices, the bank adjusted interest rates upwards by about 2.0 to 2.5% points. The treasury bill and the lending rates averaged 7.6% and 12.8%
respectively. In 1983 the Central Bank began to reinforce its surveillance over financial institutions with the aim of securing closer compliance with monetary policy requirements in particular the methods used in computing interest rates.

The major determinants of loan rates are the cost of funds, the interest rate the bank can earn on other investments, and the risk of default. Banks cannot afford to lend money at 5% and pay the depositors 7%. Banks generally require an average spread between the deposit rates and loan rates in order to cover their administrative costs. Bank loan rates also depend on the interest rates available on Treasury Securities and other potential and risk free securities.

The rise in Treasury bill rates is largely driven by market sentiments that interest rates would rise particularly the expectations for increased government borrowing in the domestic money market to bridge the budget deficit.

During the year ending August 2004 the balance sheet of the banking industry expanded with total assets increasing by Ksh 59.5 billion or 12% to 554.9 billion from Kshs 495.3 billion as at August 2003. Loans and advanced from all financial institutions to the various sectors of the economy increased by Ksh. 262.8 billions in August 2003.

Besides the aggressive marketing campaigns by most institutions, the increase was largely attributed to reduced lending rates that the market experienced after a long period of very high lending rates in the country.
Table 1.2 and 1.3 shows the downward trend of lending interest rates for the years 2003/2004 and its impact on loan advances.

**Table 1.2**

<table>
<thead>
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<th>2003</th>
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<th>2004</th>
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**Table 1.3**

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<tr>
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<th>August 2003</th>
<th>August 2004</th>
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<tr>
<td>Total Loan Advances</td>
<td>262.8bn</td>
<td>312.90bn</td>
</tr>
<tr>
<td>Total Non-Performing Loans</td>
<td>74.53 bn</td>
<td>72.47 bn</td>
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<tr>
<td>Total NPLs as % total Advances</td>
<td>28.4</td>
<td>23.20</td>
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*Source: Central Bank of Kenya.*

Total assets in the banking sector increased by 2.5% to Ksh. 432.8 bn in September 2000 from Ksh. 422.3 by as at September 1999. Loans and Advances which form the majority share of banks assets decreased by 2.6% from Kshs 233.1bn, to Ksh. 227bn over the same period.

The level of non performing loans over the same period was estimated at Ksh 113.5bn or 38.7% of gross loans in September 2000 compared with Kshs 98.0bn or 34.3% of gross Loan’s in September 1999.

This trend can be attributed to the high interest rates prevailing over the period as shown in table 1.4 below.
Table 1.4 Trend in lending rates

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Source: Central Bank of Kenya.

1.2 Problem Statement.

During periods of high lending interest rates there is reduced bank borrowings. This is occasioned by the high cost of funds that discourages borrowers. Higher interest rates can dampen the economy by making it more difficult for consumers and business to secure loans.

To invest many firms will borrow. They will borrow if they think that the rate of return on their investment is greater than interest charged on borrowed funds. If interest rates rise then fewer investments are likely to be profitable and thus the demand for investment borrowings declines.

Consumption reduces when interest rates are raised. It is now more expensive to borrow money. Many consumers fund their purchases through borrowing. This may be personal loans from their banks or may be in credit cards. It will become less attractive to borrow with high interest rates as repayments will be greater.
1.3 Objectives

The general objective of the study was to investigate the relationship between prevailing lending interest rates and the volume of borrowings. In order to achieve this objective the study specifically intends to:

1. Determine the extent that borrowings respond to interest rate fluctuations.
2. Make policy recommendations to the monetary authorities on the management of interest rates.
3. Establish how changes in interest rate affect investments.

1.4 Research Questions

In order to address the specific objectives the Study was guided by the following questions:

1. How does interest rate affect borrowing?
2. What is the level of interest that will discourage borrowers?
3. How does the volatility of interest rate affect investments?

1.5 Significance of the Study

The study will seek to contribute relevant information in the following areas.

Government

The government will find the results of the study valuable for formulation of monetary and fiscal polices that will trigger economic growth. If increased borrowings lead to enhanced investments and hence faster economic growth the government will find the study to be of much value.
Commercial Banks
Commercial banks would wish to maximize their returns through increased lending with less events of default.

Investors are more willing to borrow and repay with ease when interest rates are reasonable. Banks will therefore increase their income from interest income by making the price of loanable funds more cheap.

Investors
Investors will welcome reasonable lending interests rates. They will easily borrow funds availed cheaply. This will double their investments and consequently increase their returns.

Society
The society stands to gain through increased accessibility of credit. Easy access to credit both for investment purposes and personal development raises the standard of living of the society.

Research Institutions
Private and public research institutions (Example KIPPRA) will find the results of this study relevant for their future studies.

1.6 Scope and Location of the Study
The research was carried out in the Head Offices of the sampled commercial banks most of which are based in Nairobi. The study covered the period 1997 to 2004. The study will focus on the interest rates charged on personal loans and corporate loans.
1.7 Limitations of the Study

(i) The reliability of the secondary data collected posed a challenge to the study. The study relied on secondary data available in CBK reports, financial statements of commercial banks and information available at the NSE. The study was therefore subject to the accuracy of the secondary data collected.

(ii) Though the factors that influence the level of borrowing are many, the study was limited to interest rates prevailing at a given time.

(iii) Data analysis tools may also cause inherent errors in the study findings.
CHAPTER 2

2.0 LITERATURE REVIEW
This Chapter looks at the theories of interest rates, interest rates in Kenya, empirical studies in other countries.

2.1 Theories of Interest Rates.
Though a number of theories of interests rates have been formulated, this study shall look at the following: -

2.1.1 Keynesian Liquidity Preference Theory
2.1.2 The Neoclassical and Loanable Funds Theory
2.1.3 Hicksian IS-LM Framework.

2.1.1 The Keynesian Liquidity Preference Theory.
This theory by John Maynard Keynes postulates that the rate of interest is determined by the intersection of the supply schedule and demand schedule of money (Liquidity Preference Schedule). The theory explains that the rate of interest is determined where the liquidity preference curve equals the supply of money curve. If money supply is increased by the monetary authorities, but the liquidity preference curve remain the same, the rate of interest will fall. However if the demand for money shifts upwards given the supply of money, the rate of interest rises. Keynes theory has been criticized on the basis that it is indeterminate. Keynes asserts that liquidity preference and quantity of money determines rate of interest. This is not correct because liquidity preference will shift as income level changes. Therefore unless the income level is already known, the demand curves of money cannot tell what the rate of interest will be. Besides, the theory treats interests rates as a purely monetary phenomen and by neglecting the real factors makes the theory narrow and unrealistic (Hardwick 1986, Shapiro 1992).
2.1.2 The Loanable Funds Theory.

This focuses on the supply of and demand for loanable funds throughout the economy. The theory divides market participants into four categories: Consumers, businesses, governments and foreign participants. Each category has units presenting both borrowers and lenders.

Borrowing takes the form of issuing debt securities while lending takes the form of saving, new money creation by government and the dishoarding of money. The theory posits that when all debt markets are aggregated, the risk free rate of interest is determined by the interaction of the demand for and supply of all loanable funds.

The level of interest rate will rise when the demand for loanable funds increases relative to the supply of loanable funds at the prevailing rate. The level of rates will fall when the demand for loanable funds decreases relative to the supply of loanable funds (Koch 1995). The Theory was elaborated by Robertson (1959), Pigma (1993) and other neoclassical economists. Demand for loanable funds has three sources; government, businesses and consumers, who need the funds for investment, hoarding and consumption. More funds are borrowed at a lower rate than a higher rate. Supply of funds comes from savings, dishoardings and bank credit.

In this theory savings are seen as providing the supply of loanable funds while investments on the other hand providing demand for loanable funds. The higher the rate of interest the more willing households and individuals are to save and so sacrifice some present consumption for uncertain future consumption (Shapiro 1992, Situma 1997, Hardwick 1986).
The supply of loanable funds is determined by the saving in the economy. This is in turn determined by basic economic factors such as current and expected personal wealth and income as well as a whole range of intangible factors. It is also determined by the prevailing interest rate. The demand for loanable funds is determined by the actual and prospective productivity of capital. The rate of interest is a key factor determining demand since the amount borrowed will be determined by its cost. This is so because capital equipment will be purchased only if the expected net return is greater than some acceptable minimum internal environment (Johnson 1993).

This theory has been criticized for combining monetary factors like bank credit and hoarding with real factors like savings and investments without bringing in changes in the level of income. This makes the theory unrealistic. A basic conclusion of the neoclassists in that, falling interest rates will induce greater investment.

2.1.3 The Hicksian IS – LM Framework
This is a theory of interest advanced by J.R Hicks (1946). He combined the neoclassical and the Keynesian formulations. Hicks utilized the Keynesian tools in a method of presentation which shows that productivity thrust, liquidity preference and money supply are all necessary elements in a comprehensive and determinate interest theory. Thus the modern theory of interest integrates savings, investments, liquidity preferences and the quantity of money at various levels of income. This gives a synthesis of the loanable funds theory with the liquidity preference theory. Given the quantity of money and the family of liquidity preference curves (Keynesian Liquidity preference schedules), the LM curve relates different income levels to various rates of interests but does not show what the rate of interest will be.
Given the investment demand schedule and family of saving schedule (Neoclassical) the IS curve shows that the various levels of income will be at different rates of interest but does not show what the rate of interest will be. Interest rate and income are determined at the intersections of the two curves such that investments and savings are in equilibrium as well as demand and supply of the money (Shapiro 1992, Jhiingan 1992)

To the monetarists led by Professor Milton Friedman (1956) interest rates is not only determined by money supply, money demand but also by price expectations factor. According to the monetarists an increase in money stock will have three major effects. Initially the interest rates fall (liquidity effect). Due to the increase in liquidity position people will increase the demand in the market leading to an expansion in the economy (income effect). This in turn puts upward pressure on goods and services and prices rise causing an inflationary effects on the other hand. Suppliers will expand their investment outlay to supply more while financial institutions increase interest rates on their liabilities. On the other hand customers will spend more as they expect higher prices in the future hence for durable materials, they would demand more credit causing an increase in interest rates.

According to Ricardian equivalence theory (1772 – 1823) governments must service their debts with future taxes. Households anticipate these future taxes liabilities. As a result households do not raise consumption when their governments budget deficit increases through reduced taxation. Therefore aggregate demand, nominal and real interest rates and the price level are unaffected.

The traditional method of determining interest rates may be summarized as follows,
\[ R_n = R_r + R_f + P_u + P_v + e + d \]

- **Rn**: Interest rate in nominal terms (91 - day Treasury bill rate).
- **Rr**: Real interest rate to cover the cost of using someone's money. For example, the rate of interest that investors would expect to receive for a deposit in a stable interest rate environment.
- **Rf**: Expected rate of inflation.
- **Pu**: Premium of risk.
- **Pv**: Additional premiums to cover general economic uncertainty within a given economy.
- **e**: Expected depreciation of a given currency.
- **d**: Disturbance factor reflecting all other factors.

### 2.2 Determinants of Interest Rates

Several factors seem to influence the performance of the banking sector. They include market structure of the banking sector, the policy environment, the macro economic environments and the risk factors.

#### 2.2.1 Market Structure

Internal organization and management, including government ownership and control and the regulatory framework define market structure.

A repressive financial system is characterized by credit ceilings that impose uneven credit rationing criteria and reduce efficiency in resource allocation. A repressed financial system has interest rate ceilings that create a disincentive for resource mobilization. This is so because investors are poorly rewarded while banks have no incentive to compete for deposits as
extra deposits represent idle cash reserves. Consequently deposit supply and demand is suboptimal (Fry 1995)

Financial liberalization calls for the abolition of interest rate ceilings and the promotion of free competition among financial intermediaries. It emphasizes reducing government ownership and control of banks and the establishment of a strong regulatory and legal framework to facilitate competitiveness.

2. 2.2 Legal and Regulatory Framework

Functional efficiency is influenced by the regulatory and legal framework. Financial instability with unsound and improperly supervised lending practices may result in high real loan rates. Imposing different regulatory guidelines for banks and NBFI's also results in financial sector instability by diverting intermediation into the informal, less regulated and less taxed part of the financial system.

Weaknesses in enforcement of financial contracts will create credit management problems so that the risk premium charged on credit increases. This is so because banks face a credit risk associated with their inability to make agreements that restrict the ability of the borrowers to divert funds away from the intended purpose. Banks also lack power to have borrowers disclose accurate information or make legal contracts easily enforceable.

In their study, Demirguc – Kunt and Huizinga (1997), found that better contract enforcement, efficiency of the legal system and lack of corruption are associated with lower realized interest rate margins. This is because they reduce the risk premium attached to the bank lending rate. Fry (1995) showed
that liberalisation in the presence of inadequate prudential supervision and regulation magnifies the impact of exogenous shocks by accommodating distress borrowing.

2.2.3. Taxation.

Reserve and liquidity requirements and mandatory investment and interest controls are categorized as implicit taxes. A reserve requirement with no interest payment tends to have a high opportunity cost as it squeezes the excess reserve available for banks' to advance credit, reducing the scope of the banks' income earning assets. Mandatory investment implies inefficient allocation of resource where banks continue giving funds to prioritized sectors despite a non optimal rate of return, while interest rate controls limit the banks' efforts to capture high yielding investments.

Explicit taxes may provide a negative effective protection to the domestic financial system and encourage financial intermediation abroad, especially if there is tax discrimination. Tax discrimination leads to financial sector instability by driving intermediation into the informal less regulated and less taxed part of the market. The presence of implicit and explicit taxes also discourages the development of an interbank market. An interbank market plays a major role in improving resource allocation and effectiveness of monetary policy.

Barajas (1997) and Demirguc-Kunt and Huizinga (1997) found a positive relationship between high interest rate spreads and high levels of taxation of the intermediation process. Fry (1995) argues that the impact of the reserve requirement depends on the loans and deposit interest rate elasticity.
2.2.4. Macroeconomic Environment

Macroeconomic instability is both a cause and effect of banking sector performance. It increases uncertainty and adversely impacts on the credit worthiness of the borrower thus increasing the risk premium charged by banks on lending rates.

Inflation, for example is associated with a high interest margin as it creates uncertainty and therefore raises the risk premium charged. Low output prices and a slowdown in production and economic activity reduces the value for collateral and therefore credit worthiness of borrowers diminishes. This pushes banks to charge higher interest rates to cover for default risk. In an environment where the exchange rate is volatile and the interest rates are sticky downward expectations of exchange rate depreciation will result in higher lending rates.

Cukierman and Hercowitz (1990) found that when the number of banking firms is finite an increase in anticipated inflation leads to an increase in interest rate spread. As the number of banks approaches infinity, that is the number increases (competitive case) there is no correlation between interest spread and inflation as the spread tends towards marginal cost of intermediation with increasing number of banks.

2.2.5. Risk Factors

Banks are exposed to various risks including interest risk credit risk foreign exchange risk and legal risk as a result of uncertainty, information asymmetry and the policy environment. A decline in market interest rate lowers the present value of the outstanding amount of loan even if the credit risk is low.
Banks are exposed to risk in the credit market as they do not know what proportion of loans that will perform. To cover this risk, banks charge a premium whose magnitude depends on the credit policy, the interest rate on alternative assets, amounts borrowed, and types of client. This increases the effective rate to borrowers and may reduce the demand for loans. If lending rates are high investors find it costly to finance the loans.

Foreign exchange risk arises especially when banks borrow abroad. Legal risk is faced when the legal framework for collateral and bankruptcy is not clear. Liquidity risk arises if depositors demand to withdraw their funds leaving the banks with insufficient reserves. Considering risk management by banks, Zarruk (1989) found that risk-averse banks operate with a smaller spread than risk-neutral banks. Paroush (1994) showed that risk aversion raises the bank optimal interest rate and reduces the amount of credit supplied.

2.3 Interest Rates Policy in Kenya

Ngugi and Kabubo (1998) did study to investigate interest rates structure and their determining factors. According to their study interest rates are influenced by inflationary conditions, open market factors including foreign interest rates and the expected depreciation of local currency, monetary conditions and output levels. They concluded that both inflationary conditions and monetary checks influence interest rates in a positive and significant way.

Barro (1986) investigated the effects of temporary and permanent increases in government expenditure on the rate of interest, money supply, price level and government budget deficit. Using time series data in the United Kingdom his
results show that temporary increase in government expenditure do affect long-term interest rates positively.

Interest rate levels are influenced by markets forces, supply and demand factors, inflation and default risk. Government's policy also plays an important role. While national approaches to interests rate management differ from one country to another and over time, no country permits its interest rates to be determined solely by market forces. Even when interest rates are not actually determined by government, it is not uncommon for government agencies to act as market participants in attempts to achieve desired levels.

After independence in 1963 interest rates were relatively low with inflations averaging 2%. This ensured positive real rates of return on financial assets. However with the onset of the 1973/74 oil crises, Kenya experienced sharp deteriorations in balance of payments. This consequently led to sharp increase in inflation to rates above the prevailing statutory interest rates. This led to upward adjustments in the interest rates. Commercial banks lending and deposit rates were first adjusted in June 1974 and again in 1980. Since then they have been adjusted frequently particularly to take into account the movements in domestic prices.

In 1974 banks were required to give preference in lending to agriculture, manufacturing, export business, tourism and Small African Enterprises. In mid 1974 the interest rate structure was changed. Saving deposit rates were raised from 3 to 5% while prime lending rates from 7 to 8%. Lending rates were permitted to rise to an effective rate of 10%. Further measures were introduced in April 1977 to increase credit expansion so as to facilitate

With liberalization the spread between lending rates and deposit rates widened to over 13%. This means lending interest rates remained high while deposit rates remained relatively low.

**Table 2.1 Deposit & Lending interest rates (per cent) Source Central Bank.**

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending rate</td>
<td>25.19</td>
<td>19.60</td>
<td>19.56</td>
<td>18.45</td>
<td>16.57</td>
</tr>
<tr>
<td>Deposit rate</td>
<td>6.15</td>
<td>4.51</td>
<td>5.095</td>
<td>3.98</td>
<td>2.39</td>
</tr>
</tbody>
</table>

This led to the passing of the Central Bank of Kenya (Amendment) Act 2000 with the aim of reintroducing interest rate controls. The Act required that deposit rates be pegged at 70% of the 91-day Treasury bill rate while lending interest rates be 4% above 91-day treasury bill rate. The objective of this monetary policy is to make credit affordable so that individuals, companies and other organizations can borrow for investment purposes and thus spur economic growth (Central Bank of Kenya, 2000).

Two revisions aimed at stimulating private sector demand for credit were made in 1983 and 1984. The maximum lending rate for banks were lowered from 16% to 15% per annum in November 1983. The lending rates for Non bank financial institutions (NBFI) was lowered and fixed at 20% per annum. In June 1984 the maximum lending rates for banks and NBFI's was lowered and fixed at 14% and 19% respectively. The government was at the same
time initiating measures to free the interest rates and placing reliance on market forces.

The measures towards freeing interest rates began in 1989 when the maximum lending rates for banks on loans and advances not exceeding 4 years was raised to 15% p.a. Interest rates on loan and advances with maturities greater than 4 years was raised to 18% to be at par with rates changed by NBFIs. The deposit rates for banks and NBFI's was set at 12%. Interest rates in Kenya were finally fully liberalized in 1991 with the determination of interest rates being left to market forces of demand and supply. (CBK 1991, 1992, Musoke, 1990 Kagame 1990)

The impact of government is always more powerful on short term rates. However the close linkages between various financial markets, mean that changes in short term rates generated by the authorities money market interventions are felt along the wider market system. Even at the short end of the interest spectrum government influence cannot amount to full control. The money markets cannot be divorced from the fundamental demand and supply and exceptional factors determining interest rates.

The government reinforces rising trends in interest rates through its borrowing needs. In the 1992/1993 fiscal year there was significant increase in all interest rates brought about by enhanced sale of treasury bills. The average lending rate increased by 5.81% to 24.51% in June 1993 from 18.7% in June 1992. the 91-day T-bill rate went up to 70.6% compared to 16.99% under the same period.

In 1993 following the first multiparty elections there was excess liquidity in the economy. Central bank moved in to mop the excess liquidity through the
sale of government securities. The rates of the securities went as high as 70%. The economy was devastated as all meaningful investment in production took a back seat. Commercial bank rates rose to 30% with corresponding increase in new and existing loans. This resulted in a dramatic increase in non performing loans due to inability of borrowers to finance the high cost of funds.

Table 2.2 Interest rates % (p.a.)

<table>
<thead>
<tr>
<th></th>
<th>June 1992</th>
<th>June 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>91 day – T- bill</td>
<td>16.90</td>
<td>70.60</td>
</tr>
<tr>
<td>Deposit rate</td>
<td>13.45</td>
<td>17.27</td>
</tr>
<tr>
<td>Lending rate</td>
<td>18.70</td>
<td>24.51</td>
</tr>
</tbody>
</table>

Banks in Kenya continue to earn huge profits due to high interest spreads. For the year ended 31.12.2001 Barclays Bank of Kenya pretax profit stood at Ksh. 4.2 billion. The bank paid only Ksh. 1.3 billion on customers deposits while it rated Kshs. 6.3 billion on interest in advances.

In 1993 the CBK began to reinforce its surveillance over financial instructions with the aims of securing closer compliance with monetary policy requirements in particular the methods used in computing interest rates. At the end of June 1985 CBK’s minimum lending rate was 11%. The maximum lending rate chargeable by the commercial banks and NBFI’s was 14% and 19% respectively. The minimum deposit rate for both institutions was 11%. While the interest rate differential was kept under review to to ensure competition on equitable terms, the policy intentions was to move towards interest rates determined by market forces.
According to Mugo (2000) increased interest rates on loans leads to borrowers default. This increases NPLS in a banks loan portfolio which may ultimately lead to bank failure. In 1993 there was a 35% increase in annual average lending interest rates. This period experienced the largest number of bank failures. In this period 14 banks or 16% of total banks failed. Lending rates and other tariffs charged by banks are published weekly in the local newspapers.

In an attempt to bring sanity to the banking industry, CBK has embarked on an information campaign enlighten the general public on the various tariffs being charged by individual banks. In an effort by C.B.K. to promote transparency and disclosure in the pricing of loan facilities by banks lending rates are published in the local dailies. This is expected to assist customers source finances from the most competitive banks and therefore promote competition in the banking sector.

Table 2.3 Lending rates, (% p.a) for selected banks as at June 2005 for term loans for small businesses.

<table>
<thead>
<tr>
<th>Bank</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Baroda</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>National Bank of Kenya</td>
<td>6.25</td>
<td>20</td>
</tr>
<tr>
<td>Stanbic Bank</td>
<td>9.45</td>
<td>19.25</td>
</tr>
<tr>
<td>I &amp; M</td>
<td>5.5</td>
<td>20</td>
</tr>
<tr>
<td>Barclays Bank of Kenya</td>
<td>17.9</td>
<td>22.9</td>
</tr>
<tr>
<td>Cooperative Bank of Kenya</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Commercial Bank of Africa</td>
<td>8</td>
<td>19.5</td>
</tr>
<tr>
<td>Standard Chartered Bank (k) ltd</td>
<td>11.75</td>
<td>18.75</td>
</tr>
<tr>
<td>Dubai Bank</td>
<td>17</td>
<td>27</td>
</tr>
</tbody>
</table>
Table 2.4 Lending rates, %, for selected banks as at June 2005 for term loans for corporate borrowers

<table>
<thead>
<tr>
<th>Bank</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Baroda</td>
<td>6.5</td>
<td>15.0</td>
</tr>
<tr>
<td>National Bank of Kenya</td>
<td>6.25</td>
<td>20.0</td>
</tr>
<tr>
<td>Stanbic Bank</td>
<td>4.35</td>
<td>20.25</td>
</tr>
<tr>
<td>I &amp; M</td>
<td>1.0</td>
<td>17.0</td>
</tr>
<tr>
<td>Barclays Bank of Kenya</td>
<td>9.75</td>
<td>19.75</td>
</tr>
<tr>
<td>Cooperative Bank of Kenya</td>
<td>5.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Commercial Bank of Africa</td>
<td>6.0</td>
<td>19.5</td>
</tr>
<tr>
<td>Standard Chartered Bank (k) ltd</td>
<td>9.14</td>
<td>16.75</td>
</tr>
<tr>
<td>Dubai Bank</td>
<td>10.0</td>
<td>27.0</td>
</tr>
</tbody>
</table>

Source: Central Bank of Kenya

2.4 Empirical Studies in Other Countries.

In economic theory the cost of capital has an important influence on decisions to invest and therefore on business cycles. Since the rate of interest is a major item in capital costs, empirical studies have looked for effects on investment decisions and expenditures. Short term rates are supposed to influence inventory, investment and trade creditors. Long-term rates influence plans for plant and equipment installations and for residential housing (Cagan 1969).

Korean credit policies in the 1960’s were effective in reducing the cost of and enhancing the access to funds for private sectors. Export oriented firms had greater access to credit and lower borrowing costs than did domestically oriented firms. The general assessment is that this credit policies fueled the
rapid expansion of this sectors especially in their take off stages. The consensus is that exports were the main engine for Korean economic growth in 1960s and 1970s. To the extent that credit support was indispensable to the growth of exports, credit support must have contributed to Korean rapid economic growth. Loan rate increases were selective leaving out export, agricultural and many categories of investment loans which were discounted by Bank of Korea at to lower rates. Interest rates on loans to exporters remained at 6.5% while the general rate was 26% (Cho Je and Kyung K.M. 1995)

It is often said that Japanese policy authorities adopted a low interest rate policy and this policy enabled the Japanese economy to perform relatively well. The reason is that it provided the private sector with higher investment incentives (Teranishi 1982). This policy was quite effective during the period of rapid economic growth. The interest rates kept lower artificially by the public authority were; the official discount rates by the bank of Japan, interest rate on bank deposits, money market rate, and the banking lending rate.

The authorities monetary policy and level of interest rates have an impact on amount borrowed.

![Diagram](image)

Independent valuables  Dependant Valuable
3.0 RESEARCH METHODOLOGY

This chapter gives a description of the process used in carrying out the study. It covers research design, population of the study, sampling techniques, data collection procedure, and data analysis techniques.

3.1 Research Design

This is a longitudinal survey study to investigate the impact of interest rate volatility on borrowings from commercial banks in Kenya.

A survey study seeks to establish an insight in existing phenomena in order to further understand it and form conclusions about relationships between variables. The survey made use of existing relevant literature on the subject.

The survey made use of yearly interest rate averages for the period of study (1997 – 2004). Annual volumes of borrowings from the Commercial Banks was related with annual interest rate averages. The focus was on description, identification of trends, frequencies and interrelationships and statistical analysis.

3.2 Population of the Study

The population comprised of all Commercial Banks operating in Kenya. As at February 2005 there were 44 commercial banks operating in Kenya. These formed the sampling frame for the researcher.

3.3 Sampling Strategy

The researcher experienced problems using the initially designed sampling strategy. A sample size of 20 banks had been targeted for the study.
However, the banks visited insisted that the information requested by the researcher was highly classified and under no circumstances could it be disclosed to the public domain. This necessitated total reliance on C.B.K. statistical bulletins which contain the same information required for the study. C.B.K. like the Commercial Bank could not disclose details of individual banks but only industry totals and averages. Therefore, the study used the whole population of Commercial Bank operating in each of the years between 1997 and 2004.

3.4 Data Collection Procedure
The researcher made use of secondary data. Useful data was obtained from C.B.K monthly reports, statistical bulletins and Annual reports obtained from the C.B.K library. The C.B.K. website provided useful information for the study.

Deposit and lending interest rates for each bank are reported in table F of the C.B.K. BS (M) return. To obtain a representative rate for all the banks, weighted average rates are complied. Weighted average lending rate for a particular maturity is the sum of individual bank weighted lending rates.

For example for 2-3 years maturity loans;
let \( I \) be the total lending for an individual bank,
let \( L \) be the total lending for all the operating commercial banks.
If \( r \) is the nominal rate the individual bank is charging, then the bank’s weighted rate, \( r_w \), is

\[
r_w = \frac{I \times r}{L}
\]

The sum of \( r_w \) for all Commercial Banks is the weighted interest rate for lending of 2-3 years maturity.
3.5 **Data Analysis**

The data was coded, summarized in tables and analysed using descriptive statistics. Percentages and tables were used to present the data. From percentages and tables data was analysed interpreted and conclusions made. Content analysis was performed to analyse information from the reports and publications.

The researcher developed the following model for analysis:

\[ B_t = c + k \frac{I_t}{I} \]

Where \( B_t = \) volume of borrowings for period \( t \)

\( c = \) the level of borrowing that is constant irrespective of interest fluctuations. This borrowings relate to Corporate borrowers who borrow at negotiated interest rates and are therefore indifferent to prevailing lending rates.

\( k = \) the extent that interest rate affect volume of borrowings

\( I_t = \) interest rates prevailing at period \( t \)

\( t = \) period under study

The model asserts that the volume of borrowing is partially constant and partially inversely proportional to interest rates.
CHAPTER 4

4.0 DATA PRESENTATION, ANALYSIS, AND DISCUSSION

4.1 Introduction

This Chapter presents the findings and discussion of the study. The Chapter highlights data analysis and the interpretation of research findings. The main objective of this study was to investigate and establish the relationship between prevailing lending interest rates and the volume of borrowing from Commercial Banks. The data for the study was collected from all the Commercial Banks operating in each of the years from 1997 to 2004.

4.2 Data Presentation

Commercial Banks submit to the Central Bank of Kenya C.B.K. BS (M) return every month. The return constitutes the tables as shown in Appendix IV.

Credit to the private sector is distributed as agriculture, manufacturing, trade (export, import, domestic) building and construction, finance and insurance, real estate, mining and quarrying, private households, consumer durables, business services, and other activities. Distribution to each sector is shown in Appendix V.
Table 4.1 Commercial Banks lending interest rates (per cent)

<table>
<thead>
<tr>
<th>End of</th>
<th>Loans and advances</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>28.53</td>
</tr>
<tr>
<td>1998</td>
<td>26.13</td>
</tr>
<tr>
<td>1999</td>
<td>25.19</td>
</tr>
<tr>
<td>2000</td>
<td>19.60</td>
</tr>
<tr>
<td>2001</td>
<td>19.49</td>
</tr>
<tr>
<td>2002</td>
<td>18.45</td>
</tr>
<tr>
<td>2003</td>
<td>16.58</td>
</tr>
<tr>
<td>2004</td>
<td>12.45</td>
</tr>
</tbody>
</table>

*Source. Central Bank of Kenya*

Figure 4.1 trends in lending interest rates (%)

*Source. Central Bank of Kenya*
The results demonstrate that lending interest rates have been on a steady declining trend. From levels of 28.53% in 1997 to 12.45% in 2004. This represents a 56.36% change in lending rates over an eight (8) year period. It is evident from the finding that lending interest rates have been fluctuating.

Table 4.2 Commercial Banks lending volume (shillings million)

<table>
<thead>
<tr>
<th>End of</th>
<th>Total to private sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>208,066.03</td>
</tr>
<tr>
<td>1998</td>
<td>224,181.43</td>
</tr>
<tr>
<td>1999</td>
<td>251,553.11</td>
</tr>
<tr>
<td>2000</td>
<td>262,352.72</td>
</tr>
<tr>
<td>2001</td>
<td>255,285.54</td>
</tr>
<tr>
<td>2002</td>
<td>261,504.43</td>
</tr>
<tr>
<td>2003</td>
<td>274,755.93</td>
</tr>
<tr>
<td>2004</td>
<td>315,375.26</td>
</tr>
</tbody>
</table>

Source. Central Bank of Kenya
Credit facilities to the private sector have exhibited an expansionary trend from 1997. Credit expanded from a volume of Kshs 208.06 billion in 1997 to Kshs 315.38 billion in 2004. This represents an increase of Kshs 107.32 billion or 51.58%. (Central Bank of Kenya)
4.3 Data Analysis

A closer assessment of the research finding on trends in lending interest rates and borrowings from Commercial Banks will disclose a closer relationship. As shown in Figure 4.1, lending interest rates have from 1997 been on a downward trend Interestingly to the researcher borrowings from commercial banks have in the same period been on an upward trend. (Central Bank of Kenya)

The data analysis techniques employed were aimed at establishing the extent of the relationship between lending rates and borrowing from Commercial Banks.

4.3.1 Correlational Analysis

This tool was used to measure the strength of association between the two variables. This independent variable in the study was the lending interest rate while the dependent variable was the volume of borrowing from commercial banks. The strength of association was measured by the Pearson correlation coefficient, r. r is given by the equation;

\[
r = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{(N(\sum X^2) - (\sum X)^2)(N(\sum Y^2) - (\sum Y)^2)}}
\]

Where, X is the independent variable, Y is the dependent variable.

The correlation strength is;
- Very low if value of r is under 0.2
- Low if value of r is 0.21-0.40
- Moderate if r is under 0.41-0.70
- High if r under 0.71-0.91
- Very high if r is over 0.91
Table 4.3: Lending interest rates and volume of borrowings

<table>
<thead>
<tr>
<th>Year, N</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Volume borrowings billions, Y</td>
<td>208.07</td>
<td>224.18</td>
<td>251.55</td>
<td>262.35</td>
<td>255.29</td>
<td>261.50</td>
<td>274.76</td>
<td>315.38</td>
</tr>
</tbody>
</table>

Source: Central Bank of Kenya

Table 4.4 Correlation Coefficient table

<table>
<thead>
<tr>
<th>N</th>
<th>X</th>
<th>X^2</th>
<th>Y</th>
<th>Y^2</th>
<th>XY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0.2853</td>
<td>0.0813</td>
<td>208.07</td>
<td>43,293.12</td>
<td>59.34</td>
</tr>
<tr>
<td>2.</td>
<td>0.2613</td>
<td>0.0683</td>
<td>224.18</td>
<td>50,256.67</td>
<td>58.58</td>
</tr>
<tr>
<td>3.</td>
<td>0.2519</td>
<td>0.0635</td>
<td>251.55</td>
<td>63,277.40</td>
<td>63.37</td>
</tr>
<tr>
<td>4.</td>
<td>0.1960</td>
<td>0.0384</td>
<td>262.35</td>
<td>68,827.52</td>
<td>51.42</td>
</tr>
<tr>
<td>5.</td>
<td>0.1949</td>
<td>0.0380</td>
<td>255.29</td>
<td>65,172.98</td>
<td>49.76</td>
</tr>
<tr>
<td>6.</td>
<td>0.1845</td>
<td>0.0340</td>
<td>261.50</td>
<td>68,382.25</td>
<td>48.25</td>
</tr>
<tr>
<td>7.</td>
<td>0.1658</td>
<td>0.0275</td>
<td>274.76</td>
<td>75,493.05</td>
<td>45.56</td>
</tr>
<tr>
<td>8.</td>
<td>0.1245</td>
<td>0.0155</td>
<td>315.38</td>
<td>99,464.54</td>
<td>39.26</td>
</tr>
</tbody>
</table>

ΣX= 1.6642 (ΣX)^2= 2.7696
ΣX^2= 0.3665 (ΣX)^2= 2053.08
ΣY^2=534,167.53 ΣXY=415.56

ΣX= 1.6642 (ΣX)^2= 2.7696
ΣX^2= 0.3665 (ΣX)^2= 2053.08
ΣY^2=534,167.53 ΣXY=415.56

34
\[ r = \frac{8(415.56) - (1.6642)(2053.08)}{\sqrt{[8(0.3665) - 2.7696)][8(534.167.53) - (4215137.49)]}} \]

\[ = \frac{3324.48 - 3416.74}{\sqrt{(0.1624)(58,202.75)}} \]

\[ = -92.26 \]

\[ 97.22 \]

\[ = -0.94898 \]

\[ = -0.95 \]

The correlation coefficient figure, \( r \), of \(-0.95\) means that there is a very strong negative relationship between the lending interest rates and the volume of borrowings from Commercial Banks. This explains the observation that the declining trend of lending rates has been accompanied by a corresponding expansion of credit to the private sector by commercial banks.

### 4.3.2 Researchers model of analysis

The researcher developed the following model to relate the relationship between lending rates and volume of borrowings mathematically;

\[ B_t = c + \frac{k}{I_t} \]

Where \( B_t \) = volume of borrowings for period \( t \)

\( c \) = the level of borrowing that is constant irrespective of interest fluctuations

\( k \) = the extent that interest rate affect volume of borrowings

\( I_t \) = interest rates prevailing at period \( t \)

\( t \) = period under study

The model asserts that the volume of borrowing is partially constant and partially inversely proportional to interest rates.
The researcher compared any two years in the period under study to solve for the values of c and k. The solution for the constant was done using simultaneous equations.

Taking six comparative years, the following results for values of c and k were obtained.

**Table 4.5 Researcher’s model values of c and k**

<table>
<thead>
<tr>
<th>Comparative years</th>
<th>$B_t$, billions</th>
<th>$I_t$ (%)</th>
<th>c</th>
<th>k</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>255.29</td>
<td>19.49</td>
<td>144.91</td>
<td>21.51</td>
</tr>
<tr>
<td>2002</td>
<td>261.50</td>
<td>18.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>274.76</td>
<td>16.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>255.29</td>
<td>19.49</td>
<td>144.36</td>
<td>21.62</td>
</tr>
<tr>
<td>2003</td>
<td>274.76</td>
<td>16.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>315.38</td>
<td>12.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>261.50</td>
<td>18.45</td>
<td>144.01</td>
<td>20.71</td>
</tr>
<tr>
<td>2003</td>
<td>274.76</td>
<td>16.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>261.50</td>
<td>18.45</td>
<td>149.72</td>
<td>20.62</td>
</tr>
<tr>
<td>2004</td>
<td>315.38</td>
<td>12.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>274.76</td>
<td>16.58</td>
<td>152.30</td>
<td>20.30</td>
</tr>
<tr>
<td>2004</td>
<td>315.38</td>
<td>12.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Averaging the values of c and k over the years used for comparative survey gives the following values of c and k.

\[ c = \frac{147.38}{2} = 147 \]

\[ k = \frac{21.07}{1} = 21 \]
Using the researchers model, the equation for predicting the volume of borrowings with changes in lending rates can be defined as:

\[ B_t = \frac{147 + 21}{I_t} \]

Where \( B_t \) will be the volume of borrowings in shillings billion and \( I_t \) the lending rate per cent.

Taking year 2002 for example;

The lending interest rate is 18.45%

Using the model, the volume of borrowings can be estimated

\[ B_t = \frac{147 + 21}{0.1845} \]

\[ = 147 + 113.82 = \text{Kshs 260.82 billion} \]

The results can be explained further in that out of a total borrowing of Kshs 260.82 billion, Kshs 113.82 billion or 43.6% is interest sensitive. Kshs 147 billion borrowings are indifferent of the interest rate movements.
The negative slope of Figure 4.3 indicates a negative relationship between lending rates and volumes of borrowings. As lending rates decline borrowers are willing to take as more credit as shown by the movement from 28.53% to 12.45%.

The calculated correlation coefficient of $-0.95$ means there is a very strong negative linear relationship between the two variables. Lending rates is depicted to be an important factor in determining the amounts to be borrowed from the Commercial Banks.
CHAPTER 5

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
The main objective of the study was to investigate the relationship between prevailing lending rates and the volume of borrowing from commercial banks. This chapter present the summary of findings, discussions conclusions, limitation of the study and recommendations for further research

5.2 Summary
When data relating to lending rates and value of borrowings was analysed, a strong correlation was seen to exist between the two variables. Correlation analysis is a tool used to measure the strength of association, between two variables, the dependent and the independent variable. The Pearson correlation coefficient, \( r \), calculated from the data obtained yielded a value of \(-0.95\). The results demonstrate a very strong negative linear relationship between the variables, lending rates and amounts borrowed. The stable decline of lending rates from 1997 to 2004 is followed by a corresponding stable upward trend in amounts borrowed from commercial banks.

In 1997 with lending rates averaging 28.53% a total of Kshs 208.36 billion was borrowed by the private sector. Lending rates averaged 12.45% in 2004 a 56.36% decline from 1997. In the year 2004 borrowings totaled Kshs 315.37 billion reflecting a Kshs 106.77 billion improvements or 51.18% compared with 1997.

The analysis portrays a very close relationship between lending rates and borrowed amounts.
Lending rates prevailing in 2004 were a 56.36% decline compared to rates prevailing in 1997. In the same period amounts borrowed in 2004 were a 51.18% above the 1997 borrowings. The close relationship is shown by the closeness of the percent changes of the two variables over the period. A 56.36% change in lending rates led to 51.18% change in amounts borrowed.

The researcher’s model also yielded similar results showing that amounts borrowed are sensitive to the prevailing lending rates.

The researcher’s equation for the study from the data collected is

\[ B_t = 147 + 21 \frac{I_e}{0.1245} \]

Using 2004 with lending rates at 12.45% as an example,

\[ B_t = 147 + 21 \times 0.1245 \]
\[ = 147 + 168.67 \]
\[ = \text{Kshs. 315.67 Billions} \]

The results indicate that out of a total borrowing of Kshs. 315.67 Billions, Kshs. 147 or 53.43% is constant irrespective of interest rate fluctuations. Kshs. 168.67 billions is interest rate determined. This again means while a portion of borrowing will remain constant regardless of shifts in lending rates, a proportion of the loans will be interest sensitive.
5.3. Conclusions

The results of the study indicate a very strong linear relationship between the two variables. Amounts borrowed are dependant on the prevailing lending rates to an extent of over 50%.

The prevailing lending rates are therefore a major factor determining the amounts to be borrowed from the Commercial Banks. Borrower are interest rate sensitive and will shun or reduce borrowings in periods of high interest rates. This can be explained by the fact that investment borrowings have to be matched with expected returns from investments. When lending rates escalate they reduce the profit margins from investments. Investors will therefore demand less credit.

High lending rates impact negatively on the economy. During times of high interest rates borrowings will drastically decline. Investment activities are at their low levels due to the high cost of investment funds. Many firms will borrow to invest if they think that the rate of return from their investment is greater than interest charged on borrowed funds. If interest rates rise then fewer investments are likely to be profitable and thus the demand for investment borrowing declines.

5.4 Policy Implications and Recommendations.

The results of the study have indicated that lending interest rates are important in determining the level of borrowings. Borrowings are also closely related to investment activities at any given time. Interest rates are therefore an important instrument of monetary policy and will affect directly on macro economic variables.
Economic activity and business conditions are directly influenced by lending rates. The monetary authorities need to acknowledge the key role played by interest rates in the economy. It has been established that a low interest rate policy has enabled economies like the Japanese economy to perform relatively well. The reason being that it provides the private sector with higher incentives.

The government and its monetary authorities need to formulate policies that keep interest rates low to spur economic growth. Economic growth will stagnate or be low if interest rates will remain high. Countries like the United States of America have interest rates averaging between 3.0 to 3.5%. Even as projections are made for economic growth less will be achieved if important variables like interest rates are not addressed. The monetary authorities need to determine the level of interest rate that will foster investments and hence economic growth. Even with liberalisation the monetary authorities cannot let vital economic variables be solely dependent on market forces.

5.5 Limitation of the Study

The study was targeted on Commercial Banks and wanted to establish the relationship between lending rates and volume of borrowings. The Commercial Banks visited indicated that the information requested by the researcher was highly classified. The information could not be released to the public domain. The banks fear the information could be used by the rival banks to earn a competitive edge. The researcher therefore had to solely depend on data available at the Central Bank of Kenya. The sample size of the study therefore had to be altered from the 20 initially proposed. The researcher used all the banks operating in each of the years from 1997 to
2004. Data for individual banks could not be assessed but only industry totals.

5.6 Recommendation for Further Research

The study's main objective was to establish the relationship between lending rates and volume of borrowings. Because of the importance of interest rate as a tool of monetary policy more research needs to be done in this area. Of particular interest would be the factors that affect interest rate fluctuations. It would be necessary to investigate the factors that determine interest rates prevailing at any given time.
REFERENCES


Cukierman, A. and Hercowitz, Z. 1990. ‘Oligopolistic financial intermediation, inflation and the interest rate spread.’ Paper No. 2 The David Horowitz Institute for the Research of Developing Countries, Tel Aviv University, Israel.


Appendix 1: Commercial Banks.

1. Kenya Commercial bank
2. Stanbic Bank
3. Victoria Commercial Bank
4. Bank of Baroda
5. Bank of India
6. Fidelity Commercial Bank
7. Diamond Trust Bank
8. CFC Bank
9. Akiba Bank
10. Fina Bank
11. Dubai Bank
12. Consolidated Bank
13. Credit Bank
14. Investment & Mortgages Bank
15. K-rep Bank
16. Oriental Commercial Bank
17. Middle East Bank
18. Trans National Bank
19. Co-operative Bank of Kenya
20. First American Bank
21. Industrial Development Bank
22. Giro Commercial Bank
23. African Banking Corporation
24. Equatorial Commercial Bank
25. Guardian Bank
26. National Industrial Credit Bank
27. Paramount – Universal Bank
28. Chase Bank
29. National Bank of Kenya
30. Southern Credit Banking Corporation
31. Commercial Bank of Africa
32. City Finance Bank
34. Barclays Bank of Kenya
35. Charterhouse Bank
36. Habib AG Zurich
37. City Bank N.A
38. Habib Bank Ltd.
39. The Bank of Africa
40. Prime Bank
41. * Daima Bank
42. Imperial
43. Development Bank of Kenya
44. Equity Bank

Source CBK February 2005

* Daima Bank is under statutory management.
## Appendix II: Budget

<table>
<thead>
<tr>
<th>Activity</th>
<th>Ksh</th>
<th>Ksh</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposal Cost</strong></td>
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</tr>
<tr>
<td>Printing</td>
<td>2500</td>
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<tr>
<td>Photocopies</td>
<td>1000</td>
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<tr>
<td>Binding</td>
<td>400</td>
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<tr>
<td>Browsing the Internet</td>
<td>2000</td>
<td>6,900</td>
</tr>
<tr>
<td>Traveling</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>6,900</td>
</tr>
<tr>
<td><strong>Project work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traveling</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>Research assistant</td>
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<td></td>
</tr>
<tr>
<td>Processing of data</td>
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<td></td>
</tr>
<tr>
<td>Preparation of final report</td>
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<td></td>
</tr>
<tr>
<td>Contingency</td>
<td>2000</td>
<td>10,000</td>
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<td><strong>Total</strong></td>
<td></td>
<td>16,900</td>
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APPENDIX III: Time Plan

Week 1 – 4 : Project Proposal

Week 5 - 7 : Collection of data

Week 8 : Summarising and editing the data

Week 9 : Data analysis

Week 10 : Preparation of final report
APPENDIX IV

Table A: Balance sheet

Table B: Analysis of deposits

Table C: Analysis of loans and advances to private sector

Table D: Analysis of mortgage loans and advances

Table E: Analysis of agricultural credit

Table F: Deposit and lending rates
## APPENDIX V: DISTRIBUTION OF CREDIT FACILITIES (KSHS. MILLION)

<table>
<thead>
<tr>
<th>End of Year</th>
<th>Agriculture</th>
<th>Manufacturing</th>
<th>Trade</th>
<th>Building &amp; Construction</th>
<th>Transport &amp; Communications</th>
<th>Finance &amp; Insurance</th>
<th>Real Estates</th>
<th>Mining &amp; Quarrying</th>
<th>Private households</th>
<th>Consume Durables</th>
<th>Business Services</th>
<th>Other Activities</th>
<th>Total</th>
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<tbody>
<tr>
<td>1997</td>
<td>17,413.14</td>
<td>42,935.14</td>
<td>35,604.41</td>
<td>11,507.90</td>
<td>10,972.23</td>
<td>9,169.42</td>
<td>7,388.40</td>
<td>2,419.23</td>
<td>6,037.62</td>
<td>6,385.43</td>
<td>16,532.19</td>
<td>41,700.95</td>
<td>208,066.03</td>
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<td>1998</td>
<td>21,399.47</td>
<td>49,634.65</td>
<td>44,935.82</td>
<td>10,309.05</td>
<td>10,909.93</td>
<td>7,599.66</td>
<td>2,617.10</td>
<td>6,178.05</td>
<td>4,989.42</td>
<td>19,670.78</td>
<td>30,975.60</td>
<td>224,181.43</td>
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<td>1999</td>
<td>23,048.15</td>
<td>54,936.40</td>
<td>49,962.09</td>
<td>18,363.08</td>
<td>9,722.84</td>
<td>12,373.26</td>
<td>9,913.63</td>
<td>2,974.75</td>
<td>7,088.69</td>
<td>5,017.19</td>
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<td>2000</td>
<td>23,916.03</td>
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<td>51,103.35</td>
<td>16,850.02</td>
<td>9,608.36</td>
<td>14,747.52</td>
<td>9,901.28</td>
<td>2,838.11</td>
<td>8,113.91</td>
<td>4,487.59</td>
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<td>33,941.92</td>
<td>262,352.72</td>
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<tr>
<td>2001</td>
<td>22,857.08</td>
<td>49,582.04</td>
<td>45,989.15</td>
<td>17,287.54</td>
<td>9,901.15</td>
<td>15,533.59</td>
<td>7,992.40</td>
<td>2,169.32</td>
<td>10,187.51</td>
<td>5,328.07</td>
<td>27,693.14</td>
<td>40,764.55</td>
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<tr>
<td>2002</td>
<td>23,723.05</td>
<td>50,033.05</td>
<td>42,437.13</td>
<td>17,186.9</td>
<td>12,693.3</td>
<td>17,243.87</td>
<td>7,957.81</td>
<td>2,010.5</td>
<td>13,303.82</td>
<td>5,402.22</td>
<td>25,870.68</td>
<td>43,641.00</td>
<td>261,504.43</td>
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<tr>
<td>2003</td>
<td>26,914.8</td>
<td>50,236.55</td>
<td>41,095.04</td>
<td>17,223.6</td>
<td>16,644.4</td>
<td>22,386.39</td>
<td>7,398.48</td>
<td>1,869.55</td>
<td>21,509.35</td>
<td>6,183.17</td>
<td>23,429.65</td>
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<td>274,755.93</td>
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<td>2004</td>
<td>27,758.88</td>
<td>54,450.2</td>
<td>48,622.89</td>
<td>17,119.67</td>
<td>18,649.8</td>
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<td>30,751.71</td>
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<td>53,344.06</td>
<td>315,375.26</td>
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