

THE EFFECT OF MONETARY POLICY ON INTEREST RATES IN KENYA

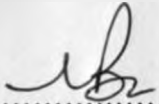
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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
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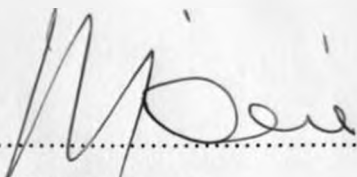
DECLARATION

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

Signed.......... Date 07/11/12

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This research project has been submitted for presentation with my approval as University Supervisor.

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DEDICATION

The research project is dedicated to my lovely wife and children.

ACKNOWLEDGEMENT

I wish recognize a number of individuals who contributed to the successful completion of this research project.

Special appreciation goes to my supervisor Mr. Mire Mwangi. I wish to sincerely acknowledge your professional advice and guidance in the research project.

To my family and friends for their moral support and encouragement during the study.

To all of you kindly accept my appreciation for your great support.

ABSTRACT

There is general agreement among economists and policymakers that monetary policy works mainly through interest rates. When the central bank policy is tightened through a decrease in reserve provision, for instance, interest rates rise. Interest rates reflect the interaction between the supply of savings and the demand for capital; or between the demand for and the supply of money. This study set to establish the effect of monetary policy on interest rates. In doing this, the study set to answer the question: how does the monetary policy relate to interest rates in Kenya?

The study adopted a quantitative comparative design. The target population for this study included 44 banking institutions (43 commercial banks and 1 mortgage finance company - MFC), transacting business in Kenya as at December 2011. Because consolidated data on the variables of the study was available at the Central bank of Kenya, the study conducted a census by including all the members of the population. The study used secondary data from the Central bank of Kenya. Data was obtained from the CBK covering the period between 31st January 2001 and 31st December 2011. The study focused on three major monetary policy instruments including: Central bank rate, 91-Day Treasury bill rate, and REPO rate. The researcher conducted a multiple regression analysis in order to determine the effect of monetary policy on interest rates in the Kenya.

The study concluded that lending rates in Kenya were affected by various factors key among them being the 91 Day Treasury bill Rate which had the highest impact among the three variables studied in this study. The repo rate determines the rate at which the financial institutions can borrow from one another to meet their short term shortfalls and came in second in affecting the lending rates in Kenya. The Central Bank Monetary policy Committee uses the central bank rate to check on the Macroeconomic changes in the economy. It uses it to check the inflation among other variables in the economy hence affecting the lending rates.

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ABBREVIATIONS

CBK	Central Bank of Kenya
CBR	Central Bank Rate
ECCU	Eastern Caribbean Currency Union
GDP	Gross Domestic Product
LIBOR	London Inter- Bank Offered Rate
MCI	Monetary Conditions Index
MPC	Monetary Policy Committee
NBFIs	Non Bank Financial Institutions
OMO	Open Market Operations
REPO	Repurchase Agreement
MFC	Micro Finance Company

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Monetary Policy is used to describe the activities undertaken by a government agency, typically the central bank of a country, to moderate the supply of money, availability of money, and cost of money or rate of interest to help promote economic growth, price stability, high employment, and a stable currency for use in international trade transactions (Kohn and Brain, 2003). Monetary policy is a type of stabilization policy adopted by countries to deal with different economic imbalances. Monetary policy is defined as the set of procedures and measures taken by monetary authorities to manage money supply, interest and exchange rates and to influence credit conditions to achieve certain economic objectives. The goals of monetary policy have developed with the evolution central banking thought and the changes in both the behaviour and performance of different economies (Kwapil and Scharler, 2009). However, there is worldwide agreement that the ultimate goals of monetary policy in both the developed and developing countries are price stability and high employment rates, enhancing economic growth rates and controlling imbalances in external payments, including the protection of the external purchasing power of the currency through maintaining relatively stable levels of exchange rates. These goals explain the importance of co-ordination among different economic policies on the one hand, and the importance of diagnosing the economic problem before taking appropriate treatment measures (Bernake, 2002).

1.1.1 Concept of Monetary Policy

Monetary policy refers to the combination of measures designed to regulate the value, supply and cost of money in an economy. It can be described as the art of controlling the direction and movement of credit facilities in pursuance of stable price and economy growth in an economy (Chowdhury, Hoffman and Schabert, 2003). Monetary policy refers to the actions of the Central Bank to regulate the money supply which could be through discretionary monetary policy instruments such as the open market operation(OMO), discount rate, reserve requirement, moral suasion, direct control of banking system credit, and direct regulation of interest rate (Loayza, and Schmidt-hebbel, 2002).

Monetary policy comprises the formulation and execution of policies by the central bank to achieve the desired objective or set of objectives; the policies and decisions are aimed at guiding bank lending rates to levels where credit demand and money growth are at a level consistent with aggregate supply elasticity (Loayza and Schmidt, 2002). The objectives and goals that the central bank seeks to achieve generally are low inflation (usually targeted), protection of value of currency, full employment and sustainable economic output (economic growth).

Monetary policy covers the monetary aspect of the general economic policy which requires a high level of co-ordination between monetary policy and other instruments of economic policy of the country. The effectiveness of monetary policy and its relative importance as a tool of economic stabilization varies from one economy to another, due to differences among economic structures, divergence in degrees of development in

money and capital markets resulting in differing degree of economic progress, and differences in prevailing economic conditions (Faure, 2007). To achieve the desired stabilization in an economy, central banks use various monetary policy instruments which may differ from one country to another according to differences in political systems, economic structures, statutory and institutional procedures, development of money and capital markets and other considerations. Some of the commonly used monetary policies include: changes in the legal reserve ratio, changes in the discount rate or the official key bank rate (Central bank Rate), exchange rates and open market operations.

Monetary transmission mechanism is the mechanism through which changes in money supply affects the decisions of firms, households, financial intermediaries, investors and ultimately alters the level of economic activities and prices it can be thought of as encompassing the various ways in which monetary policy shocks propagate through the economy (Kuttner and Mosser 2002).

1.1.2 Interest Rates

Interest rate denotes the time value of money as it is the rate at which an amount of money accrues over time. In economic theory, interest is the price paid for inducing those with money to save it rather than spend it, and to invest in long-term assets rather than hold cash. Rates reflect the interaction between the supply of savings and the demand for capital; or between the demand for and the supply of money. Rates of interest can be expressed as a percentage payable (a coupon), usually per annum; or as the present discounted value of a sum payable at some future date (the date of maturity). There is an inverse relationship between the prevailing rate of interest at any one time, and the

discounted value at that time of assets paying interest: for example bond prices fall when yields increase (O'Hara, 2005). The Central Bank's principal objective is formulation and implementation of monetary policy directed to achieving and maintaining stability in the general level of prices. The aim is to achieve low inflation and to sustain the value of the currency. In addition, the Central Bank aims to support Government economic policy of economic growth and employment (Monetary policy Statement, 2008). Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). Interest can be thought of as "rent of money". Interest rates are fundamental to a "capitalist society" and are normally expressed as a percentage rate over the period of one year.

The origin of the relationship between money supply, interest rates and stock prices point to Friedman's money demand function. Friedman (1956), attempted to integrate two distinct decisions to be made by agents; a decision on the quantity of savings (IS) and decision on how to allocate those savings among assets in a portfolio (LM) and in so doing transformed the liquidity preference theory of the demand for money. He proposed that portfolio allocation decisions could have an impact on consumption – savings decisions determined by interest rate movements.

The interest rate channel of monetary policy transmission has become prominent following the recommendation of the Radcliffe Report (1988) in the United States, which recommended that monetary authorities should regard the structure of interest rates rather than the supply of money as the centre piece of monetary action. The interest rate channel is expounded in the marginal efficiency of capital function which posits an inverse

relationship between real interest rate and the present value of capital and consumer durable goods. This implies that a reduction in the real interest rate will lead to an increase in the present value of capital and durable consumer goods and increase the ratio of the market value to asset value (Mbutor, 2007).

1.1.3 Determinants of Interest Rates

Borrowing and lending in the financial market depend to a significant extent on the rate of interest. In economics, interest is a payment for the services of capital. It represents a return on capital (Crowley, 2007). There are many determinants of interest rates in an economy especially those directly related to bank balance sheets and bank characteristics are expected to have a strong influence on lending rates, such as deposit rates, bank assets, market share, and the share of non-performing loans in total credit exposure, bank liquidity, capital adequacy, operating costs and the share of foreign capital. All the variables enter the regressions with one lag, which is recommended both from the statistical (i.e. avoiding endogeneity problems) and the economic point of view (i.e. the existence of a certain delay in the occurrence of effects of a particular change) (Kok and Werner, 2006).

The quick answer to the question: who sets short-term interest rates? is a simple one. It is the monetary authority of the economy in question. In the conduct of monetary policy, a Central Bank has at its disposal a number of instruments, most of which depend upon setting or influencing interest rates (Patterson and Lygnerud, 1999). First, the discount and other rates set by the Central Bank will feed through into the financial system. The Bank is the “lender of last resort” in an economy, and can determine the short-term rate

floor and ceiling. Decisions on interest rates by a Central Bank also act as signal to the financial system, which tend automatically to move their rates in the same direction (Fell (1996). This is because Central Banks can re-enforce their interest rate 'stance' by other means. A Central Bank is usually the monopoly supplier of cash to the financial system of an economy. It can therefore set interest rates by the way in which it makes that supply. It can make fixed amounts available at a fixed rate of interest, 'rationing' the supply between the bidders according to some key. Or it can auction a fixed amount, which is allocated to the institutions offering the highest rate of interest. The buying or selling of Treasury Bills or bonds open market operations all will have the effect of raising or lowering their price of lowering or raising the interest rate. Further instruments which can directly effect the degree of liquidity in a financial system, and hence interest rates, include changing minimum reserve requirements (Lee and Prasad (1994). These are legal obligations placed upon banks to hold a certain amount of liquid assets, like Treasury Bills. Central Banks can also remove liquidity from a system by requiring financial institutions to make special deposits with the Central Bank. This mechanism can be useful, for example, when it is necessary to 'sterilize' money which has been issued (i.e. created) to support a currency in the foreign exchange markets (IMF, 1996).

As in the case of short-term interest rates, a quick answer is also possible to the question: Who sets long-term interest rates? The answer is: the markets. However, this answer also conceals considerable complexity. Some key, and interacting, factors can be identified. Long-term interest rates will normally be higher than short-term rates (Patterson and Lygnerud, 1999). This is because the risks of inflation are likely to increase with time; and also ñ given the importance, already noted, of international capital flows because

there may also be increasing risks of currency depreciation. Similarly, short- and long-term rates can normally be expected to move in the same direction. A rise in short rates may have a 'portfolio effect': that is, investors redirect their funds to short money market instruments, and away from bonds, thus leading to a fall in bond prices and a rise in yields like the long-term rates (IMF, 1996). Long-term rates therefore reflect interacting expectations on inflation and levels of short-term interest rates. They also, however, reflect expectations about the real economy: notably, the growth of the economy is GDP, of profits and of real asset values. These are reflected in a rise or fall in the demand for capital, and produce changes in real long-term rates (Lee and Prasad (1994)).

1.1.4 Relationship between Monetary Policy and Lending Rates

A financial system of any economy is made of institutional arrangements designed to transform savings into investments. These institutional arrangements are determined by legal rules concerning the design of financial instruments and regulation of banks and also more importantly by banking practices. While there is widespread agreement that banks play a key part in the transmission of monetary policy actions to the economy, there is considerable controversy over the precise role that banks play. The focus of this debate being whether bank lending plays a special part in the monetary transmission mechanism. If a special lending or credit channel exists, changes in the willingness and ability of banks to extend credit may have implications for aggregate economic activity (Durham, 2003).

There is general agreement among economists and policymakers that monetary policy works mainly through interest rates. When the central bank policy is tightened through a

decrease in reserve provision, for instance, interest rates rise. The rise in interest rates leads to a reduction in spending by interest sensitive sectors of the economy, such as housing and consumer purchases of durable goods. Banks play a part in this interest rate mechanism since a reduction in the money supply, which may consist of deposit liabilities of banks, is one of the principal factors pushing up interest rates. In this standard view of the monetary transmission mechanism, however, there is nothing unique about bank lending. According to Bernanke and Blinder (1988) the interest rate mechanism does not necessarily depend on what assets banks hold; the same response would occur regardless of the proportions of a bank's assets that are held as loans or securities.

1.1.5 Kenyan Context

The Central Bank's principal object is formulation and implementation of monetary policy directed to achieving and maintaining stability in the general level of prices. The aim is to achieve stable prices – that is low inflation - and to sustain the value of the Kenya shilling. Following amendments to the law, Section 4 paragraph (4) provides that the Minister for Finance may by notice in writing to the Bank set the price stability targets of the Government (CBK, 2012). Monetary policy in the Kenyan context refers to the actions of the Central Bank of Kenya to regulate the money supply which could be through discretionary monetary policy instruments such as the open market operation (OMO), discount rate, reserve requirement, moral suasion, direct control of banking system credit, and direct regulation of interest rate (Ngugi, 2001).

Lending by the Central Bank occurs when the Central Bank from time to time lends to commercial banks overnight when they fall short of funds thus affecting the amount of money in circulation and the amount deposited by banks at the CBK. The Central Bank persuades commercial banks to make decisions or follow certain paths to achieve a desired result like changes in the level of credit to specific sectors of the economy. This is referred to as moral suasion (CBK, 2012). The common types of interest rates in Kenya include: the REPO and reverse REPO rate which is the interest rate paid by the CBK when it sells securities to commercial banks in the open market operations in order to reduce money supply in the system. Conversely, when the Bank releases money into the banking system through purchase of securities, the receiving banks pay an interest called the Reverse Repo rate. Treasury bills are short term market instruments used to finance the short-term financial requirements of the government. The Treasury bills are purchased through competitive bidding and the interest rate applicable to these securities is the Treasury bill rate. Inter-bank rate is the rate at which commercial banks borrow and lend money among them over a short period of time, usually overnight. Treasury bond rate is a long term government debt instrument with a maturity of 1 or more years. The interest rate associated with these instruments is the Treasury bond rate and it is paid semi-annually (CBK, 2012).

1.2 Research Problem

Monetary policy, which operates through changes in the official Central Bank Rate (CBR), is the main lever of macroeconomic management in Kenya by the Central Bank of Kenya in pursuit of the: stability of the currency of Kenya; maintenance of full

employment in Kenya; and the economic prosperity and welfare of the people of Kenya. Underpinning these macroeconomic goals is low inflation and low inflation expectations. These assist businesses make sound investment decisions, underpin the creation of jobs, protect the savings of Kenyans and preserve the value of the currency. Since nominal interest rates cannot be lower than zero, one implication of the monetary transmission through the interest rate channel is that a liquidity trap would eliminate the effect of monetary shocks on the real economy.

Before 2006 the ninety-one day Treasury bill rate was the benchmark rate which determined all other rates in the Kenyan interest rate environment. When commercial banks needed to borrow from the central bank the rate was set at a margin above the 91 day T-bill (usually 3% above 91 day treasury bill) (Rotich, Kathanje and Maana, 2007). The problem with this arrangement was that 91day Treasury bill rate is the rate at which the government borrowed to finance its budget deficit and the level of interests in the country was dependent on the government borrowing requirement rather than the need to control inflation or influence the level of economic activity. Since December 2005, CBK's key mechanism for communicating its policy bias to the market is via the Central Bank Rate was gazette and became operational. It signals the central banks' monetary policy stance. This signal is then operationalised through open market operation by issues of repurchase agreement treasury bills (repo) in the case of expansionary policy and reverse repo for a restrictive policy (Rotich, Kathanje and Maana, 2007). Honohon and O'connell (2008) described post-independence monetary frameworks in African as being

largely aimed at the financing of government activity, the extension of subsidized credit to favoured sector and active.

Ngugi and Wambua (2004) carried out a study on understanding interest rates structure in Kenya. They found out that commercial banks lending rates are much noisier than the deposit rate, while the study confirms the hypothesis that deposit rate changes to maintain the spread; the spread is sustained by low deposit rate. Mehra (1996) conducted a study on monetary policy and long-term interest rates and established that all things being held constant, a monetary policy tightening measured by an increase in the funds rate spread does result in higher bond rates in the short run, in line with the traditional view of the transmission mechanism. Kimutai (2003) studied on empirical analysis of factors contributing to high interest rates spreads in Kenya. Key among them was increased government spending which injected more money into the economy. Wambua (2006) carried out a study on the casual relationship between interest rates and foreign exchange rates in Kenya where he established that foreign exchange rates influenced the interest rates following its effect on the conversion equivalent. Mbotu (2010) conducted a study on the impact of the central bank of Kenya Rate (CBR) on commercial banks' benchmark lending interest rates. From the above discussion, it was clear that research on the effect of monetary policy on the lending rates needed to be studied to establish the most effective monetary instrument in controlling interest rates in Kenya. In doing this, this study sought to answer one question: How does the monetary policy relate to interest rates in Kenya?

1.3 Objective of the Study

To establish the effect of monetary policy on lending rates in Kenya

1.4 Value of the Study

To scholars and academicians, this study would increase body of knowledge to the scholars of monetary policy transmission in the Kenyan Market. It would also suggest areas for further research so that future scholars can pick up these areas and study further. Commercial Bank and other non bank financial institutions would also gain from this study as it will help banks determine the likely impact of monetary policy committee decisions on market interest rate and improve the predictability of interest rates in the Kenyan interest rate environment.

The study would be important to the government especially the Ministry of Finance for making policy decisions whose overall objectives is to influence the level of economic activity and manage the monetary policy. It also would help to facilitate better monetary policy transmission in the CBK.

As a tool to monetary policy committee of the Central Bank, this study would provide information and methodologies for the committee to ensure effective implementation of their decisions.

Finally, investors in the bond market would have a better understanding of the interest rate market which enables them predict the future direction of interest rates.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter conducts a review of the literature on monetary policy and interest rates in an economy. From this review broad categories will be derived which will help easily identify the critical relationship between monetary policy and interest rates in an economy. Specifically, the chapter addresses the theoretical framework guiding the study, measurement of interest rates, empirical literature and chapter summary.

2.2 Theoretical Review

2.2.1 Loanable Funds Theory

Under the loanable Funds theory of interest, the rate of interest is calculated on the basis of demand and supply of loanable funds present in the capital market. The loanable funds theory of interest advocates that both savings and investments are responsible for the determination of the rates of interest in the long run while short-term interest rates are calculated on the basis of the financial conditions prevailing in an economy. the determination of the interest rates in case of the loanable funds theory of the rate of interest depends on the availability of loan amounts. The availability of such loan amounts is based on factors like the net increase in currency deposits, the amount of savings made, willingness to enhance cash balances and opportunities for the formation of fresh capitals (Bibow, 2000).

The nominal rate of interest is determined by the interaction between the demand and supply of loanable funds. Keeping the same level of supply, an increase in the demand for loanable funds would lead to an increase in the interest rate and the vice versa. An increase in the supply of loanable funds would result in fall in the rate of interest. If both the demand and supply of the loanable funds change, the resultant interest rate would depend much on the magnitude and direction of movement of the demand and supply of the loanable funds. The demand for loanable funds is derived from the demand from the final goods and services which are again generated from the use of capital that is financed by the loanable funds. The demand for loanable funds is also generated from the government (Bernake, 2002).

The Loanable Funds Theory of the Rate of Interest has similarity with the Liquidity-Preference Theory of Interest in the sense that both of them identify the significance of the cash balance preferences and the role played by the banking sector to ensure security of the investment funds.

Wray (1992) in his work titled alternative theories of the Rate of Interest criticizes the liquidity preference theory by pointing out that the rate of interest is not purely a monetary phenomenon. Real forces like productivity of capital and thriftiness or saving by the people also play an important role in the determination of the rate of interest which is ignored by the Keynes liquidity preference theory. Wray adds that liquidity preference is not the only factor governing the rate of interest. There are several other factors which influence the rate of interest by affecting the demand for and supply of investible funds. The liquidity preference theory does not explain the existence of different rates of interest

prevailing in the market at the same time. He further notes that Keynes ignores saving or waiting as a means or source of investible fund. To part with liquidity without there being any saving is meaningless. The Keynesian theory only explains interest in the short-run and gives no clue to the rates of interest in the long run. He finally says that Keynes theory of interest, like the classical and loanable funds theories, is indeterminate as one cannot know how much money will be available for the speculative demand for money unless they know how much the transaction demand for money is.

2.2.2 Keynesian Theory

The Keynesian theory stated that some microeconomic-level actions if taken collectively by a large proportion of individuals and firms can lead to inefficient aggregate macroeconomic outcomes, where the economy operates below its potential output and growth rate. Most Keynesians advocate an activist stabilization policy to reduce the amplitude of the business cycle, which they rank among the most serious of economic problems. Keynes argued that the solution to the Great Depression was to stimulate the economy ("inducement to invest") through some combination of two approaches: a reduction in interest rates and government investment in infrastructure. Investment by government injects income, which results in more spending in the general economy, which in turn stimulates more production and investment involving still more income and spending. The initial stimulation starts a cascade of events, whose total increase in economic activity is a multiple of the original investment.

A central conclusion of Keynesian economics is that, in some situations, no strong automatic mechanism moves output and employment towards full employment levels.

This conclusion conflicts with economic approaches that assume a strong general tendency towards equilibrium. In the 'neoclassical synthesis', which combines Keynesian macro concepts with a micro foundation, the conditions of general equilibrium allow for price adjustment to eventually achieve this goal. More broadly, Keynes saw his theory as a general theory, in which utilization of resources could be high or low, whereas previous economics focused on the particular case of full utilization.

2.3 Monetary Policy and Interest Rates

Monetary policy rests on the relationship between the rates of interest in an economy, that is, the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic growth, inflation, exchange rates with other currencies and unemployment (Bordo, 2008). Where currency is under a monopoly of issuance, or where there is a regulated system of issuing currency through banks which are tied to a central bank, the monetary authority has the ability to alter the money supply and thus influence the interest rate to achieve policy goals.

Alvarez, Lucas and Weber (2001), sought to establish whether a policy of increasing short term interest rates to reduce inflation could be rationalized with essentially quantity-theoretic models of monetary equilibrium. Based on their analysis using a model of segmented markets, they gave this question a qualified affirmative answer. In the model they used to generate all of their specific examples, production was a given constant, velocity was an exogenous random shock, and the equation of exchange determines the

equilibrium price level, given the money supply. In this theory of inflation, consistent with much of the evidence, interest rates played no role whatsoever.

Ideally, the Central bank should derive the power to influence interest rates in the wholesale money market from the fact that it is the monopoly supplier of “high-powered” money. The operating procedure of the central bank of Kenya is similar to that of other central banks, though institutional details differ slightly. The monetary policy committee sits once a month to review its monetary policy stance main point. The key decision is whether to change the Central Bank Rate. In the case of an expansion monetary policy stance the monetary policy committee will reduce the reference rate. There are several links in the chain of causation. The CBR is operationalised through the repo rate which in turn influences the inter-bank deposit rates and lending rates (CBK, 2012).

The Central Bank Rate is operationalised through the REPO market once the monetary policy committee meets once a month and decides what action to take either to increase the CBR in the case of restrictive money policy and decreasing the CBR in the case of expansionary monetary policy . The dealer at central bank will issue repo to reduce the amount of money in circulation and reverse repos to increase the amount of money in circulation. Depending on the targeted amount the repo rate will then rise and fall. To attract more funds the dealer will offer better rates to the bank resulting in higher repo rates and vice-versa. The relationship between the repo rate and Central Bank Rate should they be very direct , however the researcher appreciated that it is difficult to establish causality with the CBR because it does not change daily like the other rates (CBK, 2012).

Fisher (2002) states that the market for repurchase agreements involving Treasury securities (repo market) plays a central role in the Federal Reserve's implementation of monetary policy. Transactions involving repurchase agreements (repos and reverses) are used to manage the quantity of reserves in the banking system on a short term basis. By undertaking such transactions with primary dealers, the Fed, through the actions of the open market desk at the Federal Reserve Bank of New York, can temporarily increase or decrease bank reserves. For Jordan and Jordan (1997), when the risk bank adjusts the repo rate, this change spreads to other interest rates. The repo rate has a direct effect on the interest rate with the shortest maturity, the so-called overnight rate on the interbank market. This is the interest rate the banks apply when they lend to and borrow from each other from one day to the next. Changes in the overnight rate then spread to interest rates with higher credit risks and longer maturities. In the end, the adjustment has spread to the interest rates at which households and companies borrow from financial institutions. How much of the original adjustment of the repo rate impacts households' and companies' interest rates varies over time (Keane, 1996).

Monetary policy changes are first transmitted to the financial markets, which as the monetarists explain, arises from the fact that information and transaction costs are lower. Therefore changes in the Central Bank's indicative short term rate (repo rate) will affect a wide spectrum of interest rates, altering the whole term structure of interest rates within the financial market. However, the effect of monetary policy on financial markets (and hence the economy) depends on economic agents' perception of the nature of the central bank's action and expectations about future economic developments. If agents perceive

the central bank's action as being permanent, then one can expect longer term rates to be most responsive (Brunner and Meltzer, 1988).

2.4 Monetary instruments

Ideally, the Central bank should derive the power to influence interest rates in the wholesale money market from the fact that it is the monopoly supplier of "high-powered" money. The operating procedure of the central bank of Kenya is similar to that of other central banks, though institutional details differ slightly. The monetary policy committee sits once a month to review its monetary policy stance main point. The key decision is whether to change the Central Bank Rate. In the case of an expansion monetary policy stance the monetary policy committee will reduce the reference rate. There are several links in the chain of causation. The CBR is operationalised through the repo rate which in turn influences the inter-bank deposit rates and lending rates (CBK, 2012).

2.4.1 Interest rate

In his research on monetary transmission mechanism, Taylor (1995) emphasizes that interest rate is a key component of how monetary policy affects the economy. He points out that there is a circle relationship between the movements in real GDP and inflation and the short-term interest rate. He explains that a change in the short-term interest will affect both the long-term interest rate and the exchange rate although it is not the only factor that has impact on those variables over time. Due to the rigidities in the economy this change in the nominal interest rates and nominal exchange rate will then result in movements in real interest rates and real exchange rates. Those real rates change in turn

affect real investment, real consumption and real net export, which are all constituents of GDP, hence leads to a change in real GDP.

2.4.2 Repurchase Agreements

Repurchase agreements play a crucial role in the efficient allocation of capital in financial markets. “With a repurchase agreement (REPO), one party sells securities to another for cash with an agreement to repurchase the securities at a specified date and price. In essence, the repo transaction represents a loan backed by the securities (Madura, 2003). The lender has claim to the securities, in the case that the borrower defaults on the loan. Most repos are overnight transactions, with the sale taking place one day and being reversed the next day. Long-term repos can extend for a month or even up to one year by being rolled over. A reverse repo refers to the purchase of securities by one party from another with an agreement to sell them. The term is used to describe the opposite side of a repo transaction. Thus, a repo and a reverse repo can refer to the same transaction but from different perspectives (Wechsler, 1998).

In addition to the commercial paper market, banks use the repo market, the federal funds market, and the interbank market to finance themselves. Repurchase agreements, or “REPOs,” allow market participants to obtain collateralized funding by selling their own or their clients’ securities and agreeing to repurchase them when the loan matures (Markus, 2009). The Kenyan money market rate is the overnight interest rate at which banks lend reserves to each other to meet the central bank’s reserve requirements. In the interbank market, banks make unsecured, short-term (typically overnight to three-month) loans to each other. The interest rate is individually agreed upon.

While a repo is legally the sale and subsequent repurchase of a security, its economic effect is that of a secured loan. Economically, the party purchasing the security makes funds available to the seller and holds the security as collateral. If the security pays a dividend, coupon or partial redemptions during the repo, this is returned to the original owner. The difference between the sale and repurchase prices paid for the security represents interest on the loan. Indeed, repos are quoted as interest rates (Hull, 1997, p. 50). The dealer thus takes out a one-day loan from the investor and the securities serve as collateral. Repos are considered very safe in terms of credit risk because, in general, the loans are backed by government securities (CBK, 2012).

2.4.3 Treasury Bills

Treasury bills are the least risky and the most marketable of all money market instruments used by the government to raise money by selling bills to the public. T-bills have a maturity period of 91- and 182-day. Principally, sales are conducted via auction, at which investors can submit competitive or non-competitive bids. A competitive bid is an order for a given quantity of bills at a specific offered price. If the bid is high enough to be accepted, the bidder gets the order at the bid price (Madura, 2003, pp. 135-137). Individuals can purchase T-bills directly at auction or on the secondary market from a government securities dealer. T-bills are sold at a discount from face value (cash payment at maturity) and pay no explicit interest payments. At the bill's maturity, the holder receives from the government a payment equal to the face value of the bill (Bodie et al., 2002, pp. 2831). T-bills are highly liquid, which means that they can easily be converted to cash and sold at low transaction cost with low price risk.

Before 2006 the 91 day Treasury bill was the benchmark rate applied to bank that were look to borrow overnight for the central bank. The rate was pegged at the 91 day Treasury bill rate plus a margin normally 3%. As a result it developed as the benchmark rates on which all rates were directly on indirectly pegged to. Prior to 2006 I would expect to find a very strong correlation between the 91 day Treasury bill rate and deposit rates Treasury bill also influencing the market by creating demand for money from the 'loanable' funds Market .

2.4.4 Reserve Ratio

An alternative tool that the central bank can use to control inflation and influence the level of economic activity is the reserve ratio, sometime refer to as the cash ratio. Central bank rarely alters the reserve requirements because it can cause immediate liquidity problems for banks with low excess reserves; they prefer to use open market operations to implement their monetary policy. When the central bank increase the reserve ratio, it reduces the amount of money that bank have available for lending and investment resulting in reduce supply and of money in the loanable funds markets and triggering an upward movement in interest rates (Madura, 2003).

2.4.5 The Central bank Rate

The Central Bank Rate is operationalised through the Repo market once the monetary policy committees meets once a month and decides what action to take either to increase the CBR in the case of restrictive money policy and decreasing the CBR in the case of expansionary monetary policy . The dealer at central bank will issue repo to reduce the amount of money in circulation and reverse repos to increase the amount of money in

circulation. Depending on the targeted amount the repo rate will then rise and fall. To attract more funds the dealer will offer better rates to the bank resulting in higher repo rates and vice-versa. The relationship between the repo rate Central Bank Rate should there be very direct , however the researcher appreciated that it is difficult to establish causality with the Central Bank Rate (CBR) because it does not change daily like the other rates (CBK, 2012).

2.5 Empirical Studies

Central banks have become increasingly transparent and consider transparency a key feature of their monetary policy framework. Since central banks tend to be far more forthcoming than is needed to meet statutory accountability requirements, it is widely believed that transparency has considerable economic benefits (Kohn, and Brain, 2003).

Bernanke (1990) and Garfinkel and Thornton (1995) suggest that almost any other short-term rate such as the overnight repo rate or the 3-month T-bill rate would be just as good as the Federal Funds spot rate in conveying information about Federal's policy action. Woodford (2001) discussed the possibility of controlling prices by managing fiscal expectations in a non-Ricardian regime by for example fixing the nominal interest rate which could be announced that lead to price stability in an economy and act as a path for primary surpluses and could be announced that would lead to price stability. Woodford acknowledges the difficulty of controlling inflation through an interest rate rule which represents a more practical alternative. He discusses ways to assure that the accompanying fiscal policy is Ricardian.

Theissen (1995) suggests that in order to reduce uncertainty, the central bank should clearly establish the long run goal of monetary policy, the shorter term operational targets and its own interpretation of current and future economic developments. In other words the transparency of monetary policy and the reasoning which informs the central bank activities are essential. Theissen concludes that it is important not only that the ultimate objective of monetary policy be clear but also that the implementation of policy be as transparent as possible.

Robinson and Robinson (1997) studied the transmission mechanism of monetary policy in the Jamaican economy. They posit that the issue of the effects of monetary policy on prices and real economic activity lies at the core of macroeconomic theory and at the heart of monetary policy. The monetary policy, specifically unanticipated monetary shocks, have a significant effect on the economy, even if it is at least in the short run. Changes in monetary policy are 'propagated' throughout the economy via a transmission mechanism, commonly called the monetary transmission mechanism. Their study assessed the channels through which monetary policy is transmitted in Jamaica since economic liberalization. Using a Vector Autoregressive model, their analysis points to a process where monetary policy impulses are transmitted by both the money channel and the credit channel via a process of portfolio substitution. Monetary policy, through its primary and by all indications, most effective tool- reverse repurchase rate, exerts significant leverage over the financial system. The market dynamics which consist of portfolio shifts in the financial system itself tended to reinforce monetary impulses. Thus, changes in the central bank's indicative rate will affect the entire spectrum of interest rates. The resulting adjustments in the banking system's balance sheet were transmitted

to the real sector and prices through the foreign exchange market. This occurs as market participants adjust their own portfolios in response to the signals from the financial system. Their findings pointed to the possible use of a monetary conditions index (MCI) as an intermediate target for monetary policy, a measure similar to that used by the Bank of Canada.

In Robinson and Robinson (1997) study, the impact of monetary policy was found to be immediate and pervasive, albeit short lived, lasting between two to eight months. Following a unit shock to the reverse repo, the inflation rate decelerates within two months by approximately 0.1 percent per month, whilst the rate of depreciation declined significantly over the space of five months following a unit shock to the repo rate. Concurrently there were very strong, albeit temporary, real sector effects, as real economic activity declined by approximately 2.0 percent in four months.

Amoako-Adu *and* Smith (2002), in their study established that the three-month treasury bill rate is used as an index of monetary policy because the expansion and contraction of money supply directly results in a lower or higher treasury bill rate. The empirical findings implied that analysts who are forecasting P/E levels (price-to-earnings ratio) should focus primarily on the direction of short term interest rates and to a lesser extent on dividend payout levels, earnings growth, and corporate bond risk premiums. These variables together helped analysts forecast about 98% of the variability in P/E ratios. Thus, the low levels of interest rates and good expected dividends and earnings may be the major factors which drive stock prices.

Sun and Sutcliff (2003) traced the impact of Monetary Policy Committee of the Bank of England rate announcements through three markets: the spot market (LIBOR), the futures market and the options market. Their aim was to establish the impact of MPC announcements on the anticipated volatility of interest rate future contracts. They found that both the spot and futures market reacted strongly to surprise changes in the repo rate. The response was asymmetric, with bigger reaction for positive surprises. The data also revealed that MPC announcement lead to a substantial decrease in volatility.

Grenade (2007) studied the determinants of commercial banks interest rate spreads with some empirical evidence from the Eastern Caribbean Currency Union (ECCU), using a trend analysis of commercial banks' interest rate spreads in the ECCU over the period 1993 to 2003. In his findings, he exposes two stylized facts. First, spreads had been strong and persistently showing little signs of narrowing and second, foreign owned banks had been operating with larger spreads compared to their indigenous counterparts. His study employed panel data techniques to measure the relevance of micro and macro factors in determining commercial banks' interest rate spreads over the period. The results indicate that the observed spreads can be attributed to the high level of market concentration, high operating costs and non- performing loans and the central bank's regulated savings deposit rate.

Kobayashi (2008) states that only a fraction of all the loan rates is adjusted in response to a shift in the policy rate, fluctuations in the average loan rate lead to welfare costs. However, a huge number of recent studies have also reported that, especially in the euro area, shifts in money-market rates, including the policy rate, are not completely passed

through to retail lending rates. Sorensen and Lichtenberger (2007) insisted that the competitiveness of the financial market is a key to understanding the degree of pass-through. They showed that a larger degree of loan rate pass-through would be attained as financial markets become more competitive. Kleimeier and Sander (2006) emphasized the role of monetary policymaking by central banks as a determinant of the degree of pass-through. They argued that better-anticipated policy changes tend to result in a quicker response of retail interest rates.

Theoretical models show that monetary policy transparency has the potential to enhance the credibility, reputation and flexibility of central banks, which should lead to lower interest rate in an economy. Interest rates pass through has been explored through a large body of empirical studies over the past three or four decades. A recent study by Kwapil and Scharler (2009) analyzed equilibrium determinates in a sticky price model in which the pass-through for policy rates to retail interest rates is slow or inconsistent. They compared interest rate pass-through process in Europe and the U.S. and the euro area.

Ngugi (2001) in her analysis of the interest rates spread in Kenya from 1970 to 1999 found that interest rate spread increased because of yet-to-be gained efficiency and high intermediation costs. She attributed increase in spread in the post-liberalization period to the failure to meet the prerequisites for successful financial reforms, the lag in adopting indirect monetary policy tools and reforming the legal system and banks' efforts to maintain threatened profit margins from increasing credit risk as the proportion of non-performing assets. With regard to the monetary policy the Central Bank of Kenya (CBK) regulates the interest rates in the financial market.

Ngugi and Wambua (2004) concluded that in a system where interest rates are administratively set, the structure of interest rates is easily understood. For example, in the pre-reform period, the Government of Kenya fixed minimum savings rates for all the deposit-taking institutions and maximum lending rates for commercial banks, Non Bank Financial Institution (NBFIs) and building societies, defining the maximum possible interest spread. Interest rates were adjusted to maintain them positive in real terms so as to encourage savings and allow for more efficient allocation of capital stock, especially by ensuring that funds flowed to the most productive areas. They further add that the interest structure, defined by the control regime, seemed to restrain the financial sector from achieving its role in development process especially with the experienced slow growth in savings and investment. At the same time, it curtailed creation of a competitive financial market. They add that there was also a feeling that the administratively set interest rates were inefficient and unfair in the conduct of monetary policy. For example, deposit rates were kept low and not negotiable except for favoured customers. Furthermore, with uniform rates fixed administratively, depositors could not benefit from higher rates offered by banks competing for deposits, especially when the deposits are large. As a result there was a growing need to review the interest rates policy in order to encourage savings through the banks and to create a disincentive to forestall speculation and uneconomic use of savings by borrowers.

The deregulation of economic activities in early 1990s marked a major milestone in the conduct of monetary policy in Kenya in terms of objectives, instruments and institutional framework. The Central Bank of Kenya (CBK) Act was amended in 1996 to allow CBK greater operational autonomy in the conduct of monetary policy. The same Act stipulated

the principal objective of the CBK as formulation and implementation of monetary policy directed to achieving and maintaining stability in the general level of prices (CBK, 2012).

Rotich, Kathanje and Maana (2007), conducted a study on the monetary policy and the Central Bank rule-based behaviour in Kenya. They used both backward and forward-looking policy rules with appropriate modification to take into account the characteristics in developing countries. They sought to test whether the Central Bank of Kenya (CBK) reacted to changes in inflation, GDP growth and the exchange rate in a consistent and predictable fashion. Their results indicated that during the period after liberalization (1997-2006), CBK has used monetary aggregates as a main policy instrument in conducting monetary policy.

2.6 Chapter Summary

This chapter reviewed literature on the relationship between monetary policies and interest rates. The chapter first reviewed the theories on which this study is built: Loanable funds theory and kynesioan theory. The chapter then explores the relationship between monetary policies and lending rates and how it can be measured. In the empirical review, the study explored a study by Kobayashi (2008) where it was discovered that only a fraction of all the loan rates is adjusted in response to a shift in the policy rate. Kleimeier and Sander (2006) emphasized the role of monetary policymaking by central banks as a determinant of the degree of interest rate pass-through. They argued that better-anticipated policy changes tend to result in a quicker response of retail interest rates. The existing studies in this area have focused on other countries as opposed to Kenya.

In Kenya, Rotich, Kathanje and Maana (2007), conducted a study on the monetary policy and the Central Bank rule-based behaviour in Kenya. Their results indicated that during the period after liberalization (1997-2006), CBK has used monetary aggregates as a main policy instrument in conducting monetary policy (Njuguna and Ngugi, 2000). This study therefore seeks to provide knowledge on the interaction between monetary policy and interest rates.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed in completing the study. In this stage, most decisions were about how research was going to be executed and how data was to be collected, as well as when, where and how the research would be completed.

The following subsections were included; research design, target population, data collection and data analysis.

3.2 Research Design

The study adopted a quantitative design. Quantitative researchers calculate measures of central tendency like mean and variability like standard deviation just as they do in descriptive research, but these measures alone do not provide evidence of significant differences or relationships among the variables under study (Cooper & Schindler, 2003). Further statistical procedures must be used to answer these questions. The Chi square analysis is an example of a procedure often used to detect significant differences between or among groups, and the correlation is often used to determine whether two or more variables have a systematic relationship of occurrence.

3.3 Population and sample of the Study

Population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well defined or set of people, services,

elements, events, group of things or households that are being investigated. The target population for this study included: 44 banking institutions (43 commercial banks and 1 mortgage finance company - MFC), transacting business in Kenya as at December 2011. Because consolidated data on the variables of the study is available at the Central bank of Kenya, this study conducted a census by including all the members of the population.

3.4 Data collection

The study used secondary data from the Central bank of Kenya. Data was obtained from the CBK covering the period between 31st January 2001 and 31st December 2011. The study focused on three major monetary policy instruments including: Central bank rate, 91-Day Treasury bill Rate, and REPO Rate.

3.5 Data Analysis

The researcher conducted a multiple regression analysis in order to determine the effect of monetary policy on interest rates in the Kenya. The regression equation used was:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$$

Where: Y = Lending Rate

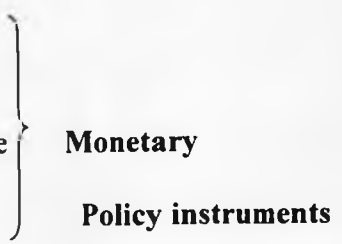
β_0 = Constant

X_1 = Central Bank Rate

X_2 = 91- day Treasury Bills Rate

X_3 = Repo Rate

ε =Error Term



The data on above variables was collected from secondary data contained in Central Bank reports. The Central Bank is concerned with the administration of monetary policies. Interest rate was measured by the average banking industry lending rates compiled by the Central bank of Kenya on a monthly basis since 2001 to 2011. The 91-Day Treasury bill rate consisted of the monthly 91-day Treasury bill rate that the government borrows from the public. The Repo Rate was gotten from the CBK records same as the interbank rate for the same period 2001 to 2011. These were used to represent the monetary policies used by the government in effecting monetary supply.

To test for the strength of the model and the relationship between monetary policies and interest rates in Kenya, the researcher conducted an Analysis of Variance (ANOVA). On extracting the ANOVA table, the researcher looked at the significance value. The study was tested at 95% confidence level and 5% significant levels.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research objectives and methodology. The study findings are presented on the effect of monetary policy on interest rates in Kenya. This chapter looked at the data to be analyzed, the regression analysis and interpretation. The specific variables discussed in this chapter include: 91-Day Treasury bill rates, REPO rate, Lending Rates and CBR.

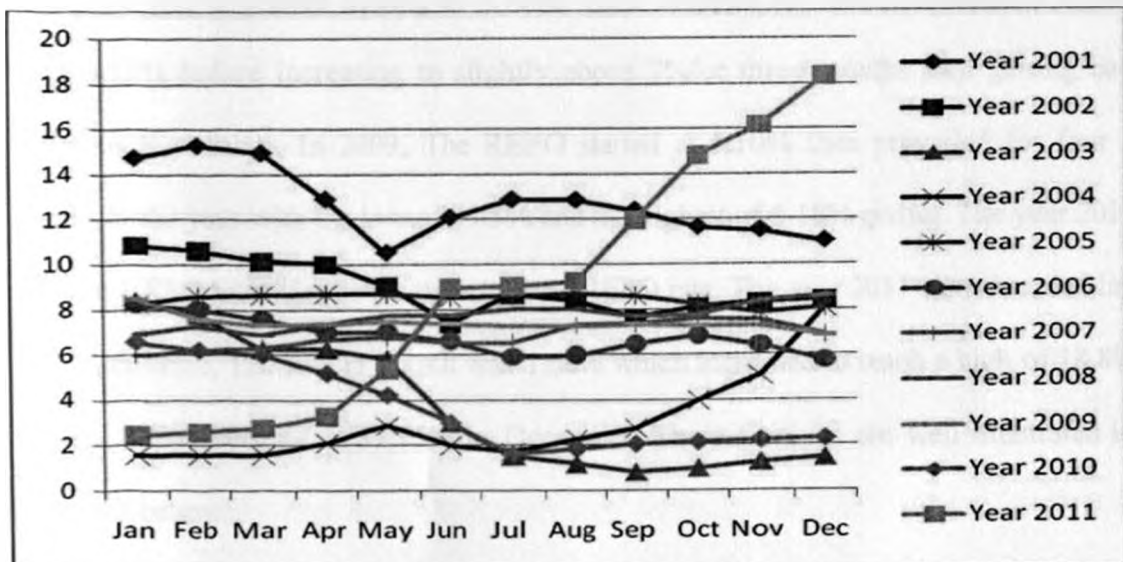
4.2 91-Day Treasury bill rates

The study collected data on the prevailing rates on the 91 day Treasury bills. In the year 2001, the bill rates started at 14.76% in January and ended the year at 11.01%. In 2002, the rate was 10.85% in January. The rate dropped slightly continuously until April when it reached 10.01% before starting to drop at a fast rate to 9.04% in May to 7.34% in June. In July, 2002, the rate started to increase. It settled at 8.63% in July and 8.34 in August. The fluctuations continued until December when it reached 8.38%.

In 2003, the rate started at 8.38% and dropped continuously to reach a low of 1% in October. This gain due the expansionary monetary policy adapted the New NARC Government. In 2004, the rate started on the low of 1.58%. This low rate was maintained throughout the year with the highest rate being 5.06% in November. In 2005, the year started with a rate of 8.26% in January as the threat of inflation force central to change it monetary policy stance from expansionary to restrictive. The rate remained a little stable

during the year by posting little fluctuations between 8.26% to 7.84%. In 2006, the year started at a similar rate as that of December 2005. In January 2006 the rate stood at 8.23%. During the year, the rate reduced slightly to the lowest of 5.73% in December. In 2007, the year started with 6% in January. It increased to the highest in the year of 7.55% in October. In the year 2008, the rate in January was 6.95% which increased to 7.28%. The rate fluctuated during the year to the lowest of 6.90% and the highest of 8.59% in December. In the year 2009, the rate started at 8.46 in January then reduced to 7.55% in February. The rate then fluctuated at between 7.45% and 6.82% for the rest of the year. In 2010, the year started at 6.56%. The year recorded high fluctuations to reach the lowest of 1.60% in July. The average for the year was 3.60%. In 2011, the year started with a low rate of 2.46%. However, the rates increased tremendously starting the month of September to reach the climax in December at 18.30%. These details are well illustrated in the figure 4.1 below.

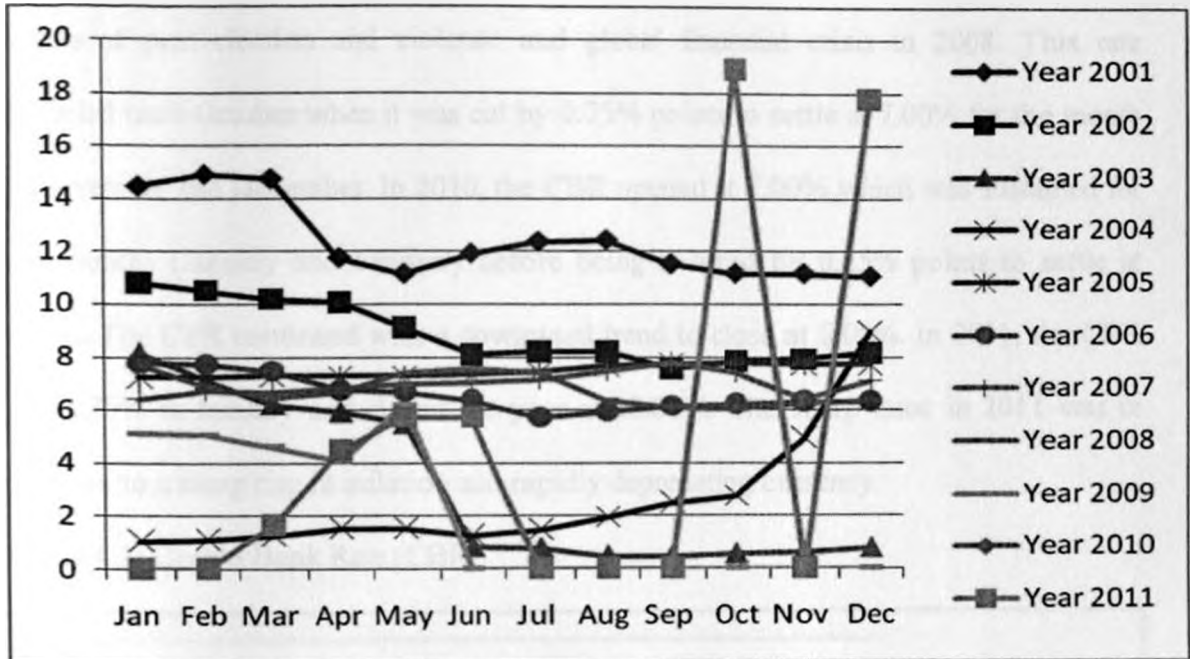
Figure 4.1: 91 – Day Treasury Bill rate



4.3 REPO Rate

The study also collected monthly data on the REPO rate from the year 2001 to 2011. In the year 2001, the REPO started at 14.47%. The REPO posted mixed reactions during the year reaching as high of 14.92 and a low of 11.05%. In 2002, the REPO opened at 10.81% then started dropping. The lowest rate for the year was recorded in September at 7.56%. In 2003, the REPO opened at 10.81% in January then went on a downward trend reaching below 1% (0.47%). In 2004, the REPO started at 1.06% then increased slowly to reach the highest of the year in December at 8.97%. In 2005, the REPO opened at 7.25% in January which remained stable until the end of the year. The year 2006 started at 7.81% in January which dropped slightly to 7.78% in February. The REPO rate continued with a downward trend to reach an all time low of 5.73% in July before starting an upward trend to reach 6.34% in December. In 2007, the REPO rate started at 6.43% followed with increase up to 7.81% in September. The REPO rate then started to increase slightly to record 7.13% in December. In 2008, The REPO started trading at 7.75%. Then dropped for three consecutive months to reach 6.67% before increasing to slightly above 7% for three months then getting back to 6.06% in September. In 2009, The REPO started at 5.10% then prevailed for four other months in the year with the low of 4.05% and the highest of 6.18% giving. The year 2010 did not have REPO activities hence there was no REPO rate. The year 2011 also recorded limited REPO activities. The rate in March was 1.66% which increased to reach a high of 18.89% in October before settling at 17.75% in December. These findings are well illustrated in the figure 4.2 below:

Figure 4.2: REPO Rate

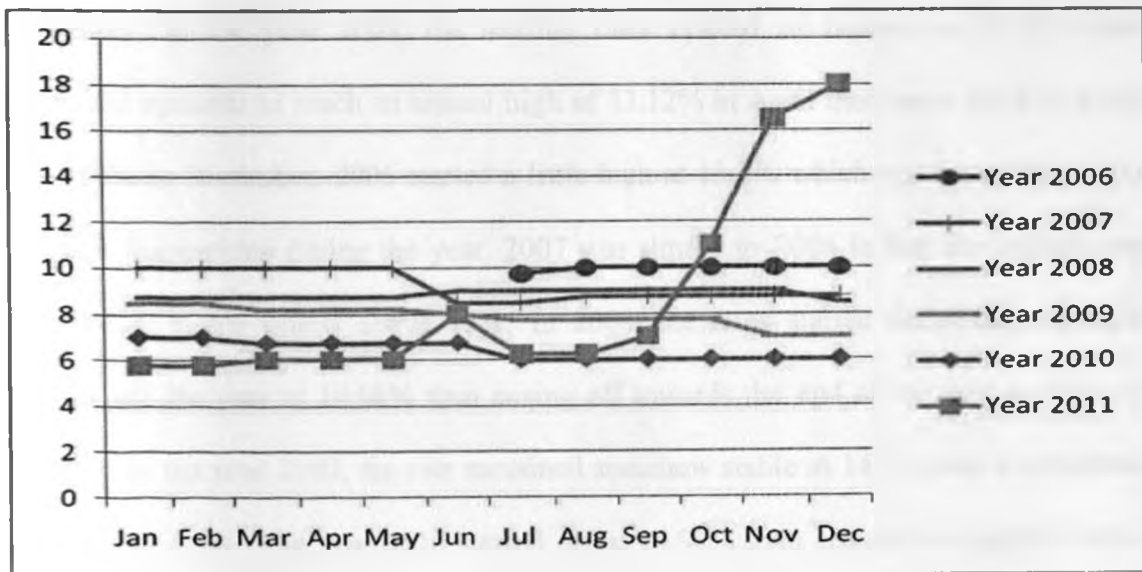


4.4 Central Bank Rate

The Central Bank Rate was introduced in Kenya in July 2006. The rate was 9.75% then increased to 10% in August which was maintained until the end of the year giving. The CBR remained stable at 10% in the first five months of the year 2007 before reducing by 1.5% points to settle at 8.5% for two months (June and July). In August same year, the CBR increased by 0.25% points to settle at 8.75% which prevailed until the end of the year. This rate prevailed for the first five months of the year 2008 at 8.75%. Starting June, 2008, the CBR rate was adjusted upwards by 0.25% points to settle at 9% until November before being reviewed to 8.5% in December. The year 2009 opened at 8.50% which prevailed for two months (January and February). The rate then was adjusted downwards by 0.25% points to 8.25%. In June, the rate went down further by another 0.25% points to settle at 8.00%. In August, the CBR reduced by another 0.25% points to

settle at 7.75% as central bank attempted to stimulate the economy following the adverse effects of post election and violence and global financial crisis in 2008. This rate prevailed until October when it was cut by 0.75% points to settle at 7.00% for the month of November and December. In 2010, the CBR opened at 7.00% which was sustained for two months (January and February before being reduced by 0.25% points to settle at 6.75%. The CBR continued with a downward trend to close at 6.00%. In 2011, the CBR was 5.75% in January and closed the year at 18.00%. The sharp issue in 2011 was in response to a sharp rise in inflation and rapidly depreciating currency.

Figure 4.3: Central Bank Rate (CBR)



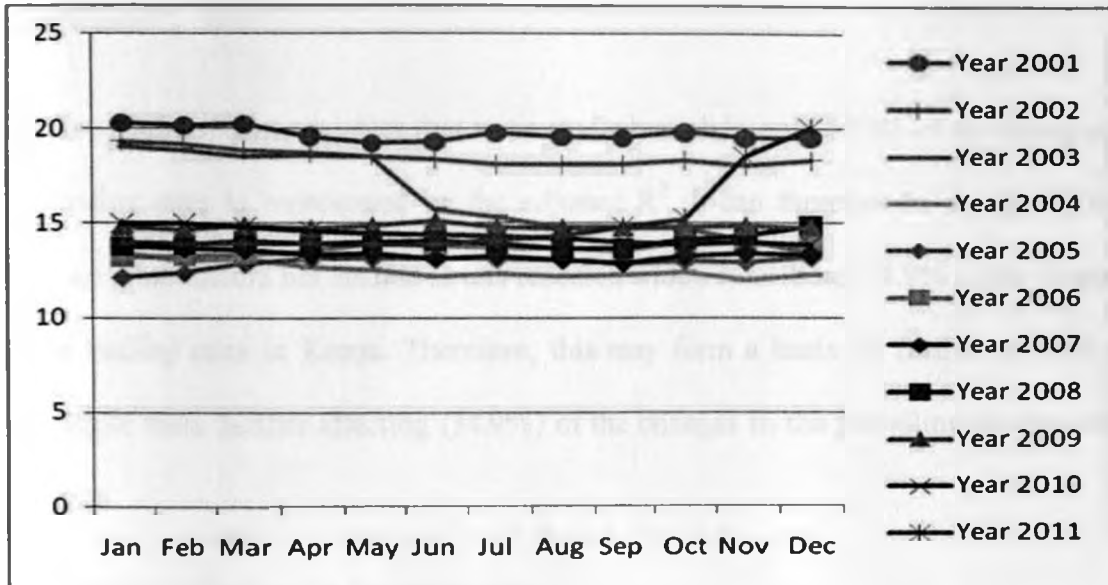
4.5 Lending rates

The study collected data on the prevailing interest rates for the same eleven year period under review. From the findings, the lending rates started high in the year 2000 at 25.14% increased to 25.39% in February then started dropping in March to 23.44%. The lending rate continued on a downward trend reaching the low of 19.60% in December with an

annual average of 22.34%. In 2001, the lending rate started at 20.27% and fluctuated downwards within 19-20.27% giving an annual rate of 19.67%. In 2002, the lending rates started at 19.30% and continued reducing during the year reaching the lowest of 18.05% in November. In 2003, the rate continued on its downward trend starting off the year at 19.30% but reducing with more than 5% points to settle at the lowest of 13.47% in December.

In the year 2004, the lending rates in January was 13.48% and continued with a downward trend to reach an all time low since the year 2000 to settle at 11.97% in November. In the year 2005, the lending rates opened in January at 12.12% then fluctuated upwards to reach an annual high of 13.12% in April then came down to settle at 13.16% in December. 2006 started a little high at 13.2% which was maintained with minimal fluctuations during the year. 2007 was similar to 2006 in that the lending rate operated at a few points above 13%. In 2008, the rates started fluctuating upwards starting off the year at 14.98% then easing off towards the end of the year to settle at 14.02%. In the year 2009, the rate remained somehow stable at 14.7% with fluctuations of less than 0.5%. The year 2010 started off at 14.98% then reduced to slightly below 14% towards the end of the year closing at 13.87% in December. The year 2011 started at 14.03% which reduced slightly to trade at between 13.9% and 15.2% up to October. In November, the rate shot up to 18.51% then increased to 20.04% in December. These findings are well illustrated in the table below.

Figure 4.4: Lending Rates



4.6 Regression Analysis

In addition to the above analysis, the researcher conducted a multiple regression analysis so as to test relationship among variables (independent). The researcher applied the statistical package for social sciences (SPSS) aid in the computation of the measurements of the multiple regressions for the study. The findings were as shown in the table 4.5 below:

Table 4.1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.821 ^a	.674	.651	.61980

a. Predictors: (Constant), CBR, 91-day Treasury Bill Rate, REPO Rate

Coefficient of determination explains the extent to which changes in the dependent variable (lending rates) can be explained by the change in the independent variables or

the percentage of variation in the dependent variable (lending rates) that is explained by all the three independent variables (91-Day treasury bill rate, REPO rate, and Central Bank Rate).

The three independent variables that were studied, explain only 65.1% of the changes in the lending rates as represented by the adjusted R^2 . It can therefore be concluded that there are other factors not studied in this research which contributes 34.9% of the changes in the lending rates in Kenya. Therefore, this may form a basis for further research to investigate these factors affecting (34.9%) of the changes in the prevailing lending rates in Kenya.

Table 4.2: Coefficients of determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.447	0.709		18.973	.001
	91-day Treasury Bill Rate	0.396	0.087	.866	4.542	.008
	REPO Rate	0.022	0.089	.057	0.251	.803
	CBR	-0.285	0.087	-.405	-3.266	.002

a. Dependent Variable: Lending Rate

In order to determine the effect of monetary policy on interest rates and the three variables, the researcher conducted a multiple regression analysis. As per the SPSS generated table 4.6 above, the equation ($Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$) becomes:

$$Y = 13.447 + 0.396 X_1 + 0.022 X_2 + -0.285 X_3 + E$$

Where Y is the dependent variable (lending rates), X_1 is the 91-Day Treasury bill rate variable, X_2 is REPO rate variable and X_3 is Central Bank Rate.

As per the regression equation established, if all the three factors were taken into account (91 Day treasury bill rate, REPO rate and CBR) to be constant at zero, lending rates in Kenya will be 13.447. The data findings analyzed also shows that if all other independent variables are taken at zero, a unit increase in 91-Day Treasury bill rate will lead to 0.396 unit increase in the lending rates in Kenya. Further, a unit increase in REPO rate will lead to a 0.022 increase in the lending rates in Kenya whereas a unit increase in central bank rate will lead to -0.285 increase in the lending rates in Kenya. From the above analysis of the betas, it can be inferred that 91-Day Treasury bill rate contributes more to the changes recorded in the lending rates in Kenya followed by REPO rate. The central bank rate seems to have a somewhat negative relationship with the changes in the lending rates. It affects but its effects are not very strong as compared to the 91-day Treasury bill rate and the REPO rate. This could be due to the fact that the central bank rate is only applied as a last resort when there are high changes recorded in the lending rates in Kenya.

At 5% level of significance and 95% level of confidence, 91 Day Treasury bill rate had a 0.001 level of significance, REPO rate had a 0.803 level of significance while central bank rate showed a significance of 0.002. From this significance tests, REPO rate seems to be less significance in explaining the changes in the prevailing lending rates. This could be attributed to the fact that this takes place among financial institutions and is based on an agreement hence may fluctuate from time to time.

4.7 Data Analysis and Findings

The findings in this study indicate that monetary policies have a great influence on the prevailing lending rates in an economy. The Central bank of Kenya through its Monetary

Committees is mandated to maintain stable lending rates in order to spur economic growth. Changes in the stance of monetary policy take place in the market for reserves held by depository institutions. The Central Bank Reserve can alter the supply of reserves either by using open market operations to buy or sell government securities or by altering the amount of reserves borrowed through the discount window. This in turn affects the prevailing interest rate charged by the Government on its 91-Day Treasury bills. Providing fewer reserves than desired by depository institutions puts upward pressure on the price of reserves while supplying more reserves than institutions desire puts downward pressure on the Treasury bill rate. The government influences the prevailing lending rates through the rate it offers to investors investing in their short term treasury bills. This in term represents a risk free rate for investors. Investors will only be willing to invest in other investment offering similar returns or with higher returns if the risk is high.

In the standard view of the transmission mechanism, the relationship between policy actions and long-term lending rates is assumed to be straightforward. An increase in the desired level of the Central Bank Rate causes current short-term rates and expected future short-term rates to rise, which pushes up interest rates across all maturities. The Monetary Committee used the Central Bank Rate in Kenya to set the minimum rate on which investors can borrow. This in effect leads to a similar change in the prevailing lending rates. For example, the Central Bank of Kenya through its Monetary Committee evoked this measure when the inflation was believed to be too high. It raised the CBR rate from 11% to 18% which saw the interest rates increase to above 24%. This explains the relationship between CBR and the prevailing lending rates. In the year 2012, the Central

Bank reduced the CBR from 18 to 13% which subsequently saw the lending rates charged by commercial banks reduce from 24% to 18%.

4.8 Summary of the findings and Interpretations

The stances drawn are the monetary committee of the Central Bank of Kenya affects the prevailing lending rates in Kenya. The monetary policies are meant to regulate several variables of the economy to ensure financial and currency stability. At the same time, the Central Bank is mean to ensure that the developed monetary policies promote economic development of the country. From the data presented above, the three independent variables studied explain up to 65.10% of the changes recorded in the lending rates in Kenya. This means that there are other variables important to the lending rates registered in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, conclusions and recommendations. The summary is presented on the effect of monetary policy on interest rates. The study concentrated on three variables that have form monetary policies. The monetary committee of the Central Bank of Kenya may use these tools to implement monetary policies so as to be able to regulate the prevailing money in circulation through regulating interest rates.

5.2 Summary of the Findings

The lending rates in Kenya are affected by various factors key among them being the 91 Day Treasury bill Rate which has the highest impact among the three variables studied in this study. This is because the 91 Day Treasury bill Rate provides a stable rate for investors willing to invest in guaranteed investment that promises a good fixed return. As a result, the changes in the 91 day Treasury bill comes with a change in the lending rate as it serves as the bare minimum rate which the banks will be willing to extent their credit. From the monthly averages for each year, the 91-Day Treasury bill rates fluctuated highly during the study period. It started on a high of 12.73% meaning that the Government wanted to attract more funding for short term projects so it motivated investors to invest in 91-Day Treasury bills hence the high rate. However, the rate slowed down to reach 6.80 in 2007 and hen grew slowly to 8.73 in 2011.

A part from the 91 Day Treasury Bills rate, the lending rate in Kenya is also affected by the REPO rate. The repo rate determines the rate at which the financial institutions can borrow from one another to meet their short term shortfalls. From the data analyzed, it was established that the annual averages for the study period started at a high of 12.391% then reduced continuously to 2004 to record 2.54% before starting an upward trend. However, a close look at the REPO rate reveals that it moves in the same direction as the 91 Day Treasury bill rate. In the year 2010, there was no activity in the REPO market.

Another variable affecting the lending rates in Kenya is the central bank rate which is taken as the base lending rate. The Central Bank Monetary policy Committee uses this Rate to check on the Macroeconomic changes in the economy. It uses it to check the inflation among other variables in the economy hence affecting the lending rates. The central bank rate is mainly used to influence the amount of money in circulation which therefore means that it has to affect the lending rates as lending directly influences the amount of money in circulation.

5.3 Conclusions

From the study findings in chapter four and the summary above, the study concludes that monetary policies affect interest rates. This is because through the monetary policy tools, the monetary Committee influences the amount of money in circulation. The study concludes that the 91 day T Bills Rate is the main influencer of the lending rates in Kenya. This is because it represents the risk free investment for investors. In the second place is the REPO rate. The REPO also follows the trend that the 91 Day Treasury bill

takes because the financial institutions will be borrowing from each other taking into account the prevailing T-bill rates and overnight lending rates represented by the interbank rates.

In summary all the variables (CBR, repo rate, 91 day Treasury bills rate) considered together influence the lending rate by 65.1%. The study concludes that the 91 day T bills rate influences the lending rate to the greatest extent followed by the REPO rate. However, the central Bank rate seems to have a negative relationship with the prevailing interest rates. This could mean that the changes in central bank rates are not fully felt in the lending rates as it may take some time for investors to free their investments in other investments so as to take advantage of the changes in the interest rates.

5.3 Policy Recommendations

Given the results of the study, as outlined here above, the study advances the following policy recommendations in the use of monetary policy in controlling the prevailing interest rates:

Before adjusting the prevailing rates in an economy, it is important that the concerned authorities consider the influence of the monetary tool on the money supply and finally the lending rates. The 91 day T bills rate being the key factor influencing lending rates, a study on the factors that the monetary policy committee considers in arriving at the CBR need to be looked into to strengthen its effectiveness; the 91 day T bills rate influences

the lending rates by the greatest margin than all the other variables (CBR and repo rate) thus suggesting that the 91 T bills rate is key to influencing the lending rate.

A study to determine appropriate mix of 91 day treasury bills rate, repo rate and Central Bank Rate that can influence the lending rates effectively needs to be carried out since all the variables considered together influence the lending rate by 65.1% which is relatively low. An assessment to establish the other factors greatly influencing the lending rates would be relevant. Similarly, since the CBR is not statistically significant in influencing the lending rates then a study on the whether the CBR need to retained as a determinant of the lending rates need to be undertaken as well.

5.4 Limitations of the Study

A limitation for the purpose of this research was regarded as a factor that was present and contributed to the researcher getting either inadequate information or if otherwise the response given would have been totally different from what the researcher expected. The main limitations of this study were: the data used in this study comprised of secondary data collected for other purposes. In addition, due to changing operating environment and increased globalization, the effect of the monetary policy on interest rates may changing calling for a change on the application of monetary policy tools.

Another limitation of the study include the fact that the inflation rates existing in the country have forced the Central Bank to raise its CBR rate which is being passed on to loan borrowers in the form of higher interest rates. This means that the Monetary Committee has to frequently review the monetary policies to ensure a stable economy.

5.5 Suggestions for Further Studies

The study suggests that further research be conducted on the effectiveness of monetary policy tools in countering inflation in Kenya. This is because the Country has experienced high inflation in the past four years in terms of inflation. This forced the government to rethink on the basket of goods used in the computation of inflation index. This study should also extend to look at the effectiveness of the new basket of goods in computing the levels of inflation and living standards of Kenyan citizens.

The study further recommends that another study be conducted in Kenya on the relationship between monetary policy and economic growth so as to assess the contributions of the monetary policy changes to economic development.

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APPENDICES

Appendix I: Data on 91-Day Treasury Bill Rate

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2001	14.76	15.30	14.97	12.90	10.52	12.07	12.87	12.84	12.39	11.63	11.50	11.01
2002	10.85	10.61	10.14	10.01	9.04	7.34	8.63	8.34	7.60	8.07	8.30	8.38
2003	8.38	7.77	6.24	6.25	5.84	3.00	1.54	1.18	0.83	1.00	1.28	1.46
2004	1.58	1.57	1.59	2.11	2.87	2.01	1.71	2.27	2.75	3.95	5.06	8.04
2005	8.26	8.59	8.63	8.68	8.66	8.50	8.59	8.66	8.58	8.19	7.84	8.07
2006	8.23	8.02	7.60	7.02	7.01	6.60	5.89	5.96	6.45	6.83	6.41	5.73
2007	6.00	6.22	6.32	6.65	6.77	6.53	6.52	7.30	7.35	7.55	7.52	6.87
2008	6.95	7.28	6.90	7.35	7.76	7.73	8.03	8.02	7.69	7.75	8.39	8.59
2009	8.46	7.55	7.31	7.34	7.45	7.33	7.24	7.25	7.29	7.26	7.22	6.82
2010	6.56	6.21	5.98	5.17	4.21	2.98	1.60	1.83	2.04	2.12	2.21	2.28
2011	2.46	2.59	2.77	3.26	5.35	8.95	8.99	9.23	11.93	14.80	16.14	18.30

Appendix II: Data on REPO Rate

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2001	14.47	14.92	14.75	11.75	11.14	11.92	12.37	12.44	11.52	11.16	11.16	11.05
2002	10.81	10.51	10.19	10.07	9.12	8.11	8.20	8.20	7.56	7.84	7.91	8.14
2003	8.17	7.17	6.23	5.94	5.50	0.84	0.78	0.48	0.47	0.56	0.64	0.78
2004	1.06	1.13	1.27	1.56	1.56	1.29	1.49	1.94	2.50	2.76	4.95	8.97
2005	7.25	7.23	7.26	7.28	7.26	7.34	7.43	7.67	7.77	7.80	7.72	7.74
2006	7.81	7.78	7.50	6.78	6.68	6.39	5.73	5.94	6.16	6.23	6.33	6.34
2007	6.43	6.75	6.70	6.84	7.03	7.07	7.19	7.49	7.81	7.44	6.42	7.13
2008	7.75	6.90	6.46	6.67	7.42	7.61	7.41	6.35	6.06	6.03	6.27	6.36
2009	5.10	5.08	4.62	4.05	6.18	-	-	-	-	-	-	-
2010												

Appendix III: Lending rates in Kenya

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2001	20.27	20.13	20.19	19.56	19.2	19.26	19.71	19.54	19.44	19.77	19.44	19.49
2002	19.3	19.18	18.86	18.69	18.54	18.38	18.12	18.12	18.14	18.34	18.05	18.34
2003	19.02	18.83	18.49	18.57	18.52	15.73	15.3	14.81	14.82	14.75	14.07	13.47
2004	13.48	13.01	13.12	12.67	12.55	12.17	12.31	12.19	12.27	12.39	11.97	12.25
2005	12.12	12.35	12.84	13.12	13.11	13.09	13.09	13.03	12.83	12.97	12.93	13.16
2006	13.2	13.27	13.33	13.51	13.95	13.79	13.72	13.64	13.54	14.01	13.93	13.74
2007	13.78	13.64	13.56	13.33	13.38	13.14	13.29	13.04	12.87	13.24	13.39	13.32
2008	13.78	13.84	14.06	13.91	14.01	14.06	13.9	13.66	13.66	14.12	14.33	14.87
2009	14.78	14.67	14.87	14.71	14.85	15.09	14.79	14.76	14.74	14.78	14.85	14.76
2010	14.98	14.98	14.8	14.58	14.46	14.39	14.29	14.18	13.98	13.85	13.95	13.87
2011	14.03	13.92	13.92	13.92	13.88	13.91	14.14	14.32	14.79	15.21	18.51	20.04

Appendix IV: Central Bank Rate

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006							9.75	10.00	10.00	10.00	10.00	10.00
2007	10.00	10.00	10.00	10.00	10.00	8.50	8.50	8.75	8.75	8.75	8.75	8.75
2008	8.75	8.75	8.75	8.75	8.75	9.00	9.00	9.00	9.00	9.00	9.00	8.50
2009	8.50	8.50	8.25	8.25	8.25	8.00	7.75	7.75	7.75	7.75	7.00	7.00
2010	7.00	7.00	6.75	6.75	6.75	6.75	6.00	6.00	6.00	6.00	6.00	6.00
2011	5.75	5.75	6.00	6.00	6.00	8.00	6.25	6.25	7.00	11.00	16.50	18.00