

**THE IMPACT OF MONETARY POLICY ON BANK LENDING RATE IN
KENYA AND THE SIGNALING EFFECT ON THE INTERNATIONAL
INVESTMENT COMMUNITY.**

BY

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Declaration

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

Signed: _____ Date: _____

Wairimu Wanjaiya (R50/62991/2010)

This proposal has been supervised for examination with my approval as the appointed supervisor.

Signed: _____ Date: _____

Gerrishon K. Ikiara

Dedication

I dedicate this work to my dad, mum, sister, brother and nephew for the sacrifice they made for me to complete this paper. Their love, care, concern, support, encouragement and enthusiasm inspired me to achieve this goal.

Acknowledgement

I wish to acknowledge the Almighty God for his goodness and faithfulness throughout my years of study. He has been source of my strength, provider and protector.

Further I wish to acknowledge my Supervisor Mr. Gerrishon Ikiara for his tireless, valuable support and guidance at every stage of my proposal and project writing.

Abstract

Monetary policy is an activity of The Central bank to control the availability of money and credit in a country's economy Cecchetti, (2009). Tight monetary policies raises the nominal interest rate and inflation and reduces long run output such as the supply of bank loans, leading to a rising lending rate, thus discouraging bank-dependent borrowers activities. In the condition of easing, more liquid money is available for banks, thus as the supply of money increases the interest rate decreases.

The main objective was to examine the impact of Monetary Policy Instruments on Bank lending rates in Kenya and its trickledown or signaling effect to the international investor community. The study adopted a causal-comparative research design and used Secondary quarterly time series data for the time period 2000-2014. The study revealed that Central Bank Rate and Treasury Bill Rate were both positive and significant Monetary Policy instruments in explaining both bank lending interest rates and the signaling effect to the international investor community. Reserve Requirement was found to be a negative and insignificant Monetary Policy tool in impacting Bank's Lending Rates and signaling the International Investor community.

The study recommends that the Central Bank of Kenya should adopt the TBR and CBR more in their efforts of implementing the Monetary Policy Committees decision. The policies will also play a more regulatory and active role by ensuring that they are a first measure for trying to maintain economic stability and run away depreciation of the Kenyan shilling.

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Definition of terms

1. Central Bank Rate (CBR)

This is the rate of interest that the CBK charges on loans to commercial banks .It is reviewed and announced by the Monetary Policy Committee at least every two months as part of its decisions CBK (2010).

2. Reserve Requirements

The amounts that banks are required to keep on deposit at the Central Bank of Kenya based on the Cash Ratio Requirements CBK (2009).

3. Interest rate risk.

The risk (variability in value) borne by an interest-bearing asset, such as loan or a bond, due to variability of interest rates Kobayashi, (2009).

4. Monetary policy

The activity of central bank to control availability of money and credit in a country's economy Cecchetti, (2008).It refers to implementations of central bank or monetary authorities that focus on supply and availability of money aimed at reducing unemployment and controlling inflation.

5. Treasury bill rate

The interest rate applicable to Treasury bills. Treasury bills are securities used to finance short-term financial requirements of the Government CBK, (2009).

6. Treasury bond rate

The interest associated with the Treasury bond and it is paid semi-annually. A Treasury bond is a long term government debt instrument with a maturity of one or more years CBK, (2009).

7) Qualitative Asset Transformation

These are long-term, high-risk; large-denomination claims issued by borrowers and held by financial intermediaries which are financed by issuing short-term, low-risk, small-denomination deposit claims.

8) Kenya Bank's Reference Rate (KBRR)

KBRR is a common prescribed base reference rate by the Central Bank of Kenya effected on 1st July 2014 from which banks are supposed to add their own margin and come up with competitive Lending rates to offer customers in a view of taking up a loan.

9) Repurchase Agreements (REPOs)

This is an instrument used in Open Market Operations. REPOs are agreements between the CBK and commercial banks to purchase/sell government securities from/to commercial banks at agreed interest rate (REPO rate) for a specified period with an understanding that the commercial bank will repurchase/resell the security to the CBK at the end of the period.

CHAPTER 1

INTRODUCTION

1.1 Background

The general public views their respective Central Banks as the solution to economic downturns such as inflation, exchange rate fluctuations and depreciation of their currency or as the quickest way to stabilize the economy. The Central Bank overall role is to stabilize the economy from macroeconomic shocks (i.e. Exchange rates fluctuations, Inflation pressures as well as excess liquidity in the market) through the use of both fiscal and monetary policies. Economists view monetary policy by Central Banks as the readiest of tools that can be used to arrest economic downturns.

The problem that seems to be facing most economies is the speed of the pass-through rate of what is passed down by the Monetary Policy Committee to the banks and finally to the loan borrower or producer. Different types of banks tend to respond very differently to different monetary policy decisions and tools. A tighter monetary policy and adverse conditions in banking reduces bank lending, economic growth, and employment or the business size while an expansionary or accommodative policy through lower interest rates raises them.

Monetary policy affects macroeconomic variables through in a variety of ways including; interest rate, bank lending rate and exchange rates. The importance of each of these ways is influenced by the economic, legal and financial structure unique to each country at a point in time in history.

Interesting to note is that while the bank lending rates remain high, deposit taking rates by commercial banks are usually very low. According to the CBK's Monetary Policy Committee July 2015, the CBR rate was adjusted upwards from 10% to 11.50% which prompted the movement of KBRR from 8.54% to 9.87%, which led to banks having their lending rates from 16% - 24%. It is because of this persisting massive disparity in these two rates that necessitated this study, which was meant to determine whether the exercise by the Government in issuing monetary policy has any impact on bank lending rates in Kenya and the trickle effect on the international investor community in terms of investment inflows behavior to the country which is prompted by the monetary policy changes.

1.2 Statement of the Research problem.

The Central Bank of Kenya issues monetary policy rates every two months meant to guide the direction commercial banks take in their lending rates.

There have been several studies done in Kenya in this and related areas. Some of these include: A study by Bett, (2010) which examined the financial performance of banks and non-banking institutions over a period of 5 years (2004 - 2009), A study by Mutwiri (2007), which focused on factors affecting bank failure, such as liquidity and poor management. Mature, et al (2006), conducted a study on how monetary policy shocks influence the level of macroeconomic performance in Kenya for the period 1997 – 2010 and a study by Mohammad (2010) which examined the impact of money supply on current accounts for a time period 1975 – 2008. These studies and many more, however, do not address the influence that monetary policy has on bank lending rates and the trickle down effect on the international investor community.

Most of the studies on bank lending were found to revolve around monetary policy existence and its overall importance, monetary policy transmission channels and where it is most likely to be observed. Where most of the recent studies on monetary policy transmission mechanisms point to the fact that monetary policy influences interest rates in banking institutions, there are no specific studies focusing on the extent to which it influences lending rates either an increase or a decrease.

There is need to quantitatively examine the relationship between monetary policy and lending rates in Kenya and the signaling effect it has on the international investors, since the studies already conducted are not sufficient to confirm changes in lending interest by commercial banks after an issue of monetary policy by the CBK.

1.3 Objectives

1.3.1 General objective

This study sought to address the research gap in literature by establishing the extent of the relationship between Monetary Policy Committee instruments on Bank Lending rates in Kenya and the trickledown effect on the International Investing Community. The purpose of this study was to analyze the impact of monetary policy instruments on bank lending rates in Kenya and the signaling effects to the international investor. Specifically the study sought to establish:

- 1) The extent to which discount window operations affect bank lending rates of commercial banks in Kenya.
- 2) The extent to which open market operations affect commercial Bank's lending rates in Kenya.

3) The effect of reserve requirements on lending rates of commercial banks in Kenya.

Following the observation of the general objectives, the study described suitable policy recommendations aimed at informing all the relevant stakeholders on the effect and influence of the monetary policies on bank lending rates in Kenya and its impact on the international investor community.

1.4 Justification of the Study.

This study sought to be of significance to the banking industry, fellow scholars and academicians as well as the vast and different stakeholders especially those in monetary policy-making arm of government as well as to the investors who would need to understand the workability of the Monetary Policy Committee decisions and the flow through rate of the same to the end borrower.

This study was prompted by the concern that though the CBK periodically issues monetary policy, either decreasing or increasing the rate of the CBR, the responsiveness of the banks in adjusting the rate is general viewed as slow, the study sought to research the effectiveness of the MPC decisions on the lending rates of commercial banks. For example, in the year 2014 the average lending rates stood at about 17.5% while the CBR was at an average of 8%, of concern is the pass-through rate mechanism of lending rates by commercial banks.

Therefore, an information gap exists as to how the monetary policy issued by the CBK from time to time affects lending rates and which of the monetary policy instruments is significant in influencing bank lending rates, as well as the signaling effect this has on the international investor community.

1.5 Literature Review.

The CBK's Bank Supervision Annual Report (2014) showed a reduction in the Central Bank Rate (CBR) which impacted positively on short-term interest rates. A steady decline in the average 91-day Treasury bills rates was also witnessed. The reduction in interest rates was not replicated in commercial banks average lending rate during the period. There has been a systematic reduction of the CBR over the last three years, from 19.7% as at 1st December 2012 17.9% in 2013, to an average of 15.3% - 16.8% in 2014. The pass through rate reduction in the CBR has only been reflected marginally in the lending interest rates by banks which in turn has heightened the cost of credit above the reach of many potential borrowers.

In acknowledging the role played by the CBK, several studies have been conducted about the banking sector. The studies however, have mainly focused on the financial performance of Banks, Monetary Policy transmission mechanisms, how monetary policy affects the real economy and the impact of money supply on current account. These studies include; Bett, (2010) which examined the financial performance of banks and non-banking institutions over a period of 5years (2004 - 2009), Mutwiri (2007), which focused on factors affecting bank failure such as liquidity and poor management and Mohammad (2010) which examined the impact of money supply on current accounts.

According to Misati et al, (2010) interest rates play a significant role as a link to other macroeconomic variables, mainly output that also forms one of the overall goals of any monetary authority. The theoretical basis of this study was embedded to the traditional Keynesian view

which suggests that monetary policy influences the real cost of borrowing by setting a nominal short-term interest rate. Changes in nominal interest rate are expected to influence real rates and eventually have an impact on investment and consumption both of which are key components of economic output.

Kashyap and Stein, (2007) and Cecchetti, (2008) considered national concentration ratios in their analysis of the effectiveness of monetary policy in Europe. Both studies used three and five-firm absorption ratios respectively, as tools of bank size in their association between monetary transmission and competition in their overview of the subject. Empirical studies using European data confirmed the existence of the bank-lending channel and found that the operations were similar to those in the U.S

According to Somoye, et al. (2009), the volume of loans granted by a bank in a year are a function of its internal characteristics such as size, deposit base, liquidity, credit policy and other internal factors. Economists view fluctuation in the Central Bank Rates as a significant proxy for changes in monetary policy. The Federal Reserve uses the instruments of monetary policy to induce changes in interest rates, and the amount of liquidity in the economy Akhtar, (2007).

Adams et al. (2005), studied the effect of local banking market structure on the bank lending channel of monetary policy. The study used Community Reinvestment Act (CRA) data that measured the volume of loans originated from 1996 to 2002, collected annually for six years. The study tested the theory of Structure-Conduct-Performance which posits that greater market concentration leads to less lending and higher loan rates. The dependent variable was the volume of loans originated in each market Kashyap and Stein (2007).

A study by Mohammad (2010) on the impact of money supply on current account based on the extent of Pakistan rupee evaluated the effects of money supply on current account, that is, the empirical association among money supply on current account, exchange rate, and industrial production. Time series data from 1975 to 2008 was collected and a multivariate model applied since the study consisted of six variables, namely; short-term real interest rate, monetary aggregate, consumer price index, industrial production, real exchange rate, the net factor payment; and proxy of export and import. The study found that the monetary policy system has an important influence on the domestic variables, for instance, output and inflation; therefore central bank should target the domestic (producer) inflation when issuing the monetary policy.

Somoye and Ilo (2009), in their study spanning (1998 -2015) sought to undertake the impact of macroeconomic instability for the period on banking sector lending behavior in Nigeria using time series data the Central Bank of Nigeria of quoted commercial banks operating in Nigeria. Other data on bank lending activities and other bank characteristics were obtained from the annual published financial statements of the banks and the fact book published by the Nigerian Stock Exchange. The study hypothesized that bank's lending behavior was generally influenced by the environmental factors particularly the regulatory and macroeconomic.

Hancock and Passmore, (2006) used descriptive statistics and bank's loan to asset ratio as the dependent variable, which was intended to measure the lending behavior of the bank. Explanatory variables were the deposits, optimal loan to capital ratio, the bank's total assets and a measure of profitability of the bank's operations. The study found that macroeconomic

instability due to changes in money supply had a negative long-run impact on bank lending in Nigeria.

Buigut (2010) assessed the importance of the bank lending channel in the transmission of monetary policy in Kenya. Annual time series data the period from 1979 to 2008 sourced from the International Financial Statistics was analyzed. The study suggested that a monetary tightening directly constrains the ability of banks to make new loans, therefore forcing dependent bank borrowers to reduce investment. It was also suggested that restrictive monetary policy works not only by raising interest rate but also by restricting bank credit directly. Five variables, namely the real GDP, inflation, real private sector credit, lending rate, and a short-term interest rate (Treasury bill rate) were tested.

The results provided the Impulse Response Functions (IRFS) to an exogenous monetary policy shock following the variable ordering; inflation, real output, short-term interest rate, real loan quantity and the lending rate. The result implies that a shock to the policy instrument only affects the prices and real output with a lag. The effect on the loan quantity is a permanent decline that settles about two years to a long term effect of around 8.2 basis points below the baseline. Taken together, the decrease in loan quantity and the increase in the lending rate suggest a dominance of the lending channel over the interest rate channel in Kenya.

Mature, et al (2006), conducted a study on how monetary policy shocks influence the level of macroeconomic performance in Kenya. Twelve-month percentage change in the Consumer Price Index (CPI) was analyzed focusing the analysis on variability of the data series over time beginning 1997. The study used the structural vector auto-regression model and proposed that

monetary policy is transmitted through many channels including the money supply, credit channel, the interest rate channel represented by the 91-day Treasury bill interest rate, bank lending interest rate and the exchange rate channel .Four sets of variables were measured, namely; the level of macroeconomic performance, the monetary policy stance, channels of monetary policy transmission, and external economic shocks. The study concluded that there is potential for policy signaling using the repo interest rate and in so doing complimenting the overworked and hardly effective open market operations as a monetary policy instrument. In the whole, the CBK should consider adopting an explicit inflation targeting policy operating framework.

1.6 Hypothesis of the Study.

The study sought to answer the following formulated research hypothesis following the research objectives as set out in section 1.3

H1: Discount window operations increase / decrease lending rates of commercial banks in Kenya.

H2: Reserve requirements increase / decrease lending rates of commercial banks in Kenya.

H3: Open market operation increase / decrease lending rates of commercial banks in Kenya.

1.7 Scope of the study

This study aimed to assess the impact of monetary policy on bank lending rate in Kenya and the signaling effect on the international investment community. The study used average data for the 43 commercial banks as provided by the CBK for the period 2000 -2014. The study also extended the study to the international investors and the effect monetary policies has on them. The signaling effect was studied comparatively by comparing the significance and direction of the variables as compared to the foreign direct investments and private direct investments done over the same period of study.

The study expects that the time period 2000 -2014 and the secondary data for the same period will be adequate to form a conclusion on the role of monetary policy on bank lending rate in Kenya and the signaling effect on the international investment community.

1.8 Theoretical Framework.

Several theories have been advanced in the study of the influence of monetary policy in the economy. Some of these theories include:

1.8.1 Interest Rate Theory of Monetary Policy

This theory hypothesizes that in the money market lending interest rates are set out by an equilibrium as opposed to the forces of demand and supply. In the other financial markets however the theory goes on to propose that an equilibrium is reached when the forces of demand and supply play out against each other Hanson (2005).

In the money market, the demand comes from people wanting to borrow and spend, while the supply of money depends on the government's monetary policy. If the demand or supply of

money changes, then this will tend to change the equilibrium interest rate in the markets, and the government may need to act to maintain the level of interest rates. Also, if a bank considers a particular loan to be a risky one, and there is little or no security for the loan then it is likely to charge a high rate of interest to compensate it for the risk it is taking. However, where there is security for the loan, then the interest will be relatively lower to reflect the lower risk Crowley, (2007).

1.8.2 The Money Supply Theory

In macroeconomics, this refers to the study of the quantity of money available at the hands of people within the economy, to buy goods, services, and securities. Precisely the concept of money supply involves the total of all electronic, credit-based bank deposits, balance accounts along with the printed-paper notes and minted coins Bibow, (2005). Keynesian economists argue that expansionary monetary policy leads to economic growth.

These two are inversely proportional as the supply of money increases; the interest rate decreases. The equilibrium at the money market is reached when the quantity of money demanded and supplied becomes equal to the rate of interest. The interest rate is the value of money over time that is the price paid for acceding payment of monetary debts Dale, (2007). Changes in interest rates and credit supply conditions are the most important sources of monetary policy effects on the economy. In inflation or price level targeting policies, central bank adjusts interest rates according to the economic condition CBK, (2010).

1.8.3 The Theory of Financial Intermediation.

This theory has been built on the models of resource allocation based on perfect and complete markets by suggesting that it is frictions such as transaction costs and asymmetric information that are important in understanding intermediation. For example, shared costs of asset evaluation mean that intermediaries have an advantage over individuals because they allow such costs to be shared Allen and Santomero, (2009). Similarly, trading costs mean that intermediaries can more easily be diversified than individuals. Financial intermediation is thus a process that involves surplus units depositing funds with financial institutions who then lend to deficit units Mathews and Thompson, (2008). Theories of intermediation examine the financial system as a bridge which is well developed and smoothly functioning, and that facilitates the efficient life-cycle allocation of household consumption as well as the physical capital to its most productive use.

The financial system allocates decision power, information, and risk and is concerned with how to build a bridge between buyers and sellers.

1.9 Empirical Literature Review

According to Misati et al, (2010) interest rates play a significant role as a link to other macroeconomic variables, mainly output that also forms one of the overall goals of any monetary

authority. The theoretical basis of this study is embedded to the traditional Keynesian view that postulates that monetary policy influences the real cost of borrowing by setting nominal short-term interest rate. Changes in nominal interest rate are expected to influence real rates and eventually have an impact on investment and consumption both of which are key components of economic output.

Adams et al. (2005), studied the effect of local banking market structure on the bank-lending channel of monetary policy. The study used Community Reinvestment Act (CRA) data that measured the volume of loans originated from 1996 to 2002, collected annually for six years. The study tested the theory of Structure-Conduct-Performance which posits that greater market concentration leads to less lending and higher loan rates. The dependent variable was the volume of loans originated in each market. The results suggested that the existence of a market imperfection-namely, market power arising from concentration reduces the effectiveness of monetary policy by Kashyap and Stein (2007).

A study by Mohammad (2010) on the impact of money supply on current account based on the extent of Pakistan rupee evaluated the effects of money supply on current account, that is, the empirical association on money supply on current account, exchange rate, and industrial production. Time series data from 1975 to 2008 was collected and a multivariate model applied since the study consisted of six variables, namely; short-term real interest rate, monetary aggregate, consumer price index, industrial production, real exchange rate, the net factor payment; and proxy of export and import. The study found that the monetary policy system has

an important influence on the local variable i.e. output and inflation as such the central bank should target the domestic (producer) inflation when issuing the monetary policy.

Somoye and Ilo (2009), in their study sought to study the impact of macroeconomic instability on the financial lending performance in Nigeria, the used time series data from the Central Bank of Nigeria on quoted commercial banks operating in Nigeria for the period 1988 – 2015. Other data on bank lending activities and other bank characteristics were obtained from the annual published financial statements of the banks and the fact book published by the Nigerian Stock Exchange. The study hypothesized that bank's lending behavior was influenced by the environmental factors particularly the regulatory and macroeconomic factors.

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Buigut (2010) assessed the importance of the bank lending channel in the transmission of monetary policy in Kenya. Annual time series data the period from 1979 to 2008 sourced from the International Financial Statistics was analyzed. The study suggested that a monetary tightening directly constrains the ability of banks to make new loans, therefore forcing bank dependent borrowers to reduce investment. It was also postulated that restrictive monetary policy works not only by raising interest rate but also by restricting bank credit directly. Five variables,

namely the real GDP, inflation, real private sector credit, lending rate, and a short-term interest rate (Treasury bill rate) were tested.

The results provided the Impulse Response Functions (IRFS) to an exogenous monetary policy shock following the variable ordering; inflation, real output, short-term interest rate, real loan quantity and the lending rate. The result implies that a shock to the policy instrument only affects the prices and real output with a lag. The effect on the loan quantity is a permanent decline that settles about two years to a long term effect of around 8.2 basis points below the baseline. Taken together, the decrease in loan quantity and the increase in the lending rate suggest a dominance of the lending channel over the interest rate channel in Kenya.

Mature et al (2006), conducted a study on how monetary policy shocks influence the level of macroeconomic performance in Kenya. Twelve-month percentage change in the Consumer Price Index (CPI) was analyzed focusing the analysis on the variability of the data series over time beginning 1997. The study used the structural vector auto-regression model and proposed that monetary policy is transmitted through many channels including the money supply, credit channel, the interest rate channel represented by the 91-day Treasury bill interest rate, bank lending interest rate and the exchange rate channel. Four sets of variables were measured, namely; the level of macroeconomic performance, the monetary policy stance, channels of monetary policy transmission, and external economic shocks. The study concluded that there is potential for policy signaling using the repo interest rate and in so doing complimenting the overworked and hardly effective open market operations as a monetary policy instrument. In the

whole, the CBK should consider adopting an explicit inflation targeting policy operating framework.

1.10 Research Methodology

The study centered on the impact of monetary policy on bank lending rate in Kenya and the signaling effect on the international investor community. The study population will be the 43 commercial banks average rates as provided by the CBK. The study will also extend to the international community to study the signaling effect realized and the impact and effect of the same.

1.10.1 Research design

The study employed secondary data to study the relationship between monetary policies and bank lending interest rates in Kenya and the signaling effect on the international investor community.

1.10.2 Target Population

Currently, Kenya has 43 commercial banks. This study used time series data averages for all the variables as provided by the CBK as a representation of all the 43 banks so as to avoid the sampling bias problem. Quarterly time series data for the period 2000 to 2014 was used.

1.10.3 International Community Perspective

The study period was restricted to the year 2000 -2014. In that period, the study sought to show how the international investors responded to the different monetary policies decisions set forth by the MPC. The signaling effect was viewed through the behavior of the investors in terms of

increase/ decrease of the investments in remittances, purchase of stocks and shares, and their direct investments upon a change directive of either a decrease/ increase of bank lending rates as directed by the MPC.

The study utilized secondary time series data that was sourced from the CBK data Bank, while for the signaling effect the data sourced from CBK, NSE, KNBS and the privatization commission. The study reviewed empirical evidence from other countries and from both developed and developing countries for comparison of reasons that further helped in making a sound conclusion on the research problem under study. The data was gathered through desk research.

1.11 Operatization of the Variables

The following measures were used to operationalize these variables:

- 1) Discount Window Operations-the trend was monitored by studying the individual bank's lending rates to the Central Bank Rate.
- 2) Open Market Operations-the study monitored bank lending rates to the 91-day Treasury bill rates
- 3) Reserve Requirements-This was measured using the Cash Reserve Ratio issued by the Central Bank of Kenya against the lending interest rates.

1.12. Conceptual Framework

The study adopted a conceptual framework to re-examine the relationship between monetary policy and bank lending rates in Kenya. The study utilized the following independent variables as a measure of monetary policy: the Discount Window Operations, Open Market Operations and Reserve Requirements; and the dependent variable as bank lending rates in Kenya.

1.12.1 Discount Window Operations

The CBK may provide short-term secured loans to commercial banks on overnight basis at the Central Bank Rate in its capacity as a lender of last resort, thus restricting banks to seek funding in the market resorting to Central Bank only as a last resort. This arrangement is known as discount window operations of the Central Bank. The CBR is reviewed every two months, and its movements are a signal of the intended direction of change of money market interest rates.

The direction and magnitude of movements of the CBR signal the monetary policy stance of the Central Bank. This signal was operationalized through movements of the short-term interest rates. A reduction of the CBR signals an intent to lower lending interest. When interest rates decline, the quantity of credit demanded increases Kahn et al, (2010).

1.12.2 Open Market Operations

According to Akhtar (2007), Open Market Operations objectives are that the government sells government-backed securities to the economy to mop up excess liquidity. The Central Bank

alters the Central Bank Rate, which impacts the short term interest rates as witnessed by a steady decline in the average 91-day Treasury bills rates CBK, (2012).

The government in instances of excess liquidity in the markets, high inflation rates and or a spiraling depreciation of the Kenyan shilling, employs open market operations which are a tightening monetary policy. The object of OMO is to mop up excess liquidity, therefore the government will sell off government backed treasury bills at the risk free rate in the economy to mop up the excess liquidity and achieve the desired level of reserves Bogdan and Bilken, (2009).

Open market operations are particularly important because they are the primary determinants of the changes necessary in the control of excess reserves in the banking system and directly impact the levels of the money supply and interest rates Bernanke, (2010). The CBR rate is set by the Monetary Policy Committee of the Central Bank or reserves Bank. The MPC monitors the economic environment to check whether inflationary pressures in the economy are significant enough to increase commercial Banks' lending interest rates (CBK 2010). This discouraged borrowings and thus reduce aggregate demand. As a result of the degree of borrowing and aggregate demand falling, the inflationary pressures in the economy are reduced. Dale, (2007).

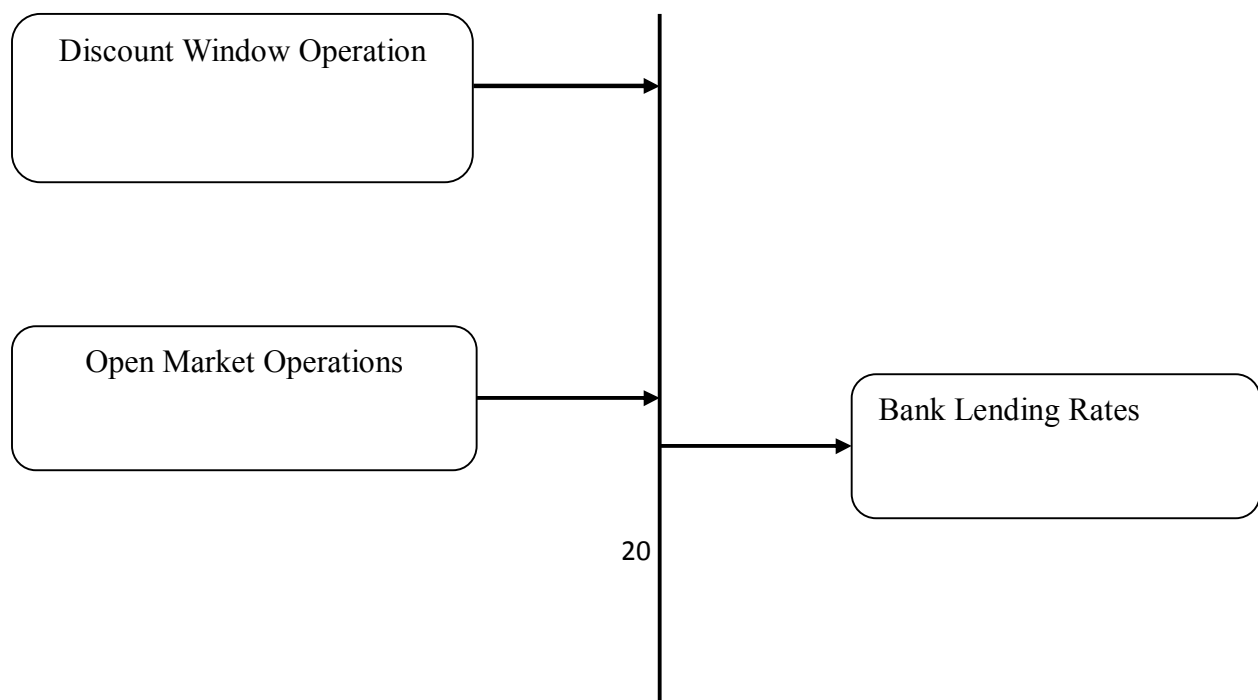
1.12.3 Reserve Requirements

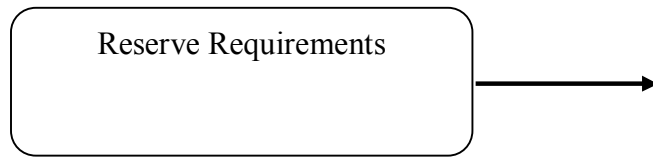
Central Banks are empowered to demand a certain proportion of commercial bank's deposits held as non-interest bearing deposits. This is used to influence some of the loans that banks can advance the public and thus affecting the supply of money. According to CBK (2013), the volume of liquidity in circulation influences the levels of interest, as well as the value of the

Kenyan shilling against other currencies. Bank reserves are kept very close to the required levels since banks generally do not earn a return on reserve assets and frequent changes in required percent would make bank management more difficult Black and Daniel, (2008).The cash ratio is a direct credit control instrument, which works by enhancing or reducing the ability to create credit out of a given deposit base.

Fig 1.1 Conceptual Framework

Monetary Policy Instruments





Independent Variables

Dependent Variable

Source: Researcher, 2015

1.13 Model Specification

To examine the relationship of monetary policy on bank lending interest rates, the study used the ordinary least squares model (OLS). Under this approach, it needs to be considered that the OLS's main assumption is that the errors must be uncorrelated.

$$y_i = \alpha + x_i' \beta + \varepsilon_i$$

Consistent with, Brooks, (2008), the econometric model is specified;

Model Specification.

$$LIR_t = \alpha + \beta_1 \Delta CBR_t + \beta_2 \Delta TBR_t + \beta_3 \Delta RR_t + \varepsilon_t$$

Where,

LIR_t = Lending interest rates at time, t

CBR_t = Central Bank rate at time, t

TBR_t = Treasury Bill Rate at time, t

RR_t = Reserve requirement at time, t

t = time

ε_t = Error term is presumed to be normally and independently distributed with mean zero and constant variance, t

α_t = captures all other explanatory variables that affect monetary policy, but were not captured in the model.

$\beta_1, \beta_2, \beta_3$, are the coefficients of monetary policy, measured with respect to CBR, TBR, and RR, respectively. Previous studies have shown that OLS is a suitable model to quantify the relationship between monetary policy and lending interest rates Espinoza & Prasad, (2010).

1.14 Chapter Outline

1.14.1 Chapter One: Introduction

Chapter one contains the study research proposal. In the same chapter, there is the statement of the research problem and objectives of the research stated. It also offers the research questions that will try and the answer both the general and specific objectives of the researcher. The chapter also includes the research justification of the study as well as the research gap that the study is trying to fill academically both globally and also in the Kenyan perspective. The chapter goes on further to dwell in the theories that put forth the concepts of monetary policy as well as

the research methodology, target population to be used. The model was further outlined, and the study went on to show how each of the variables was operationalized.

1.14.2 Chapter Two: Overview of Monetary Policy in Kenya

Chapter two looks at the Overview of Monetary Policy in Kenya from the historical use of using structural adjustment programs to the inception of the Monetary Policy Committee. The chapter goes on to discuss both the fiscal and monetary policy in Kenya as well as the role of the CBK in financial intermediation. The chapter concludes with some contributions of MPC to the banking sector in Kenya such as how it has provided greater access to credit and the struggles the earlier years presented as well as the role that revolutionary mobile money transfer has played in enhancing credit access.

1.14.3 Chapter Three: Monetary Policy Instruments

The third chapter goes on to show how monetary policy has influenced banking lending rates. It takes operations of banks within the period of study (2000-2014) and tries to show the relationship between the decisions made by the MPC and the trick effect it had on the sampled banks. The chapter goes further to demonstrate a state of play both Pre and Post MPC in the country and from that the chapter will discuss the different factors that may contribute to the non-responsiveness / disparity from the intention of the MPC and the outcome thereafter.

1.14.4 Chapter Four: Effects of Monetary Policy

The Chapter modeled both the independent and dependent variables and obtained the relationship between the variables and the varying degree of significance in explaining the behavior of banking lending rates. The findings from the OLS model were then compared to

remittances, investments in stocks & shares as well as foreign direct investments of sampled operations at a point in time over the period 2000 – 2014. The chapter concluded with comparing the findings of the model with those of similar studies and drew a conclusion on the comparison.

1.14.5 Chapter Five: Conclusion and Recommendations.

The chapter covered the summary of the effects of Monetary Policy on the bank lending rate as sought in the objectives of the study. The chapter further summarized the effect of each variable and its significance in explaining banking lending rates as well the signaling effect attributes to the international investor. The chapter concluded with suggestions for further research which can be addressed by other scholars.

CHAPTER TWO

OVERVIEW OF MONETARY POLICY IN KENYA

2.1 Introduction

This chapter looks at the Overview of Monetary Policy in Kenya from the historical use of using structural adjustment programs to the inception of the Monetary Policy Committee. The chapter goes on to discuss both the fiscal and monetary policy in Kenya as well as the role of the CBK in financial intermediation. The chapter concludes with the contributions of MPC to the banking sector in Kenya such as how it has provided greater access to credit compared to previous years

as well as the role that revolutionary mobile money transfer has played in enhancing credit access.

2.2 Monetary Policy Operations

According to Cecchetti (2008), monetary policy is defined as “an activity of The Central Bank to control the availability of money, credit and lending rates”. It is the process by which a central bank controls the supply, availability as well as the cost of money i.e. rate of interest, to attain economic stability. The main goals of any monetary policy include low and stable macroeconomic prices, low inflation and stability of the currency that spur economic growth. Other objectives of monetary policy include ease of access to financial services and financial stability in effective transmission of monetary policy signals. Monetary policy feels the macroeconomic pulse on a day to day basis through market liquidity.

According to Fisher (2009), the US uses open market operations to effect primarily changes in reserves. To implement the US monetary policy, the Federal Reserve may choose to tighten the monetary policy, e.g. by draining bank reserves through open market sales of Government securities.

2.3 Historical Overview of Monetary Policy Operations in Kenya.

Monetary Policy Committee came into place vide a gazette notice 3771 on 30th April 2008 to replace the Monetary Policy Advisory Committee (MPAC). However, stabilizing the economy in terms of inflationary pressures, exchange rate fluctuations and adjustment of the economy to macroeconomic shocks was still being done.

The most prominent change in the management of the Kenyan economy after Kenya got her independence was the application of the structural adjustment programs (SAPs), which were introduced around the 1980/1981 financial year.

The structural adjustment programs consisted of a set of economic policies designed to generate rapid and sustainable economic growth while eliminating fiscal and external imbalances with macroeconomic stability. In trying to stabilize the Economy in the earlier years the government used SAPs so as to liberalize prices and financial markets as well as the well instill changes in the financial sector, integrate international trade reforms, and make sense of the budgeting process.(MPAC 2005). Several studies done in the 90's (Ikiara 1990, Mwege and Ndulu 1994, World Bank-UNOP1993, Swamy 1994), found that the structural adjustment programs have had some negative effects on the economy, such as inflationary pressures, increase of government debt which ate into the government's budget.

Owing to the negative effects derived from the SAPs the government sought other ways of stabilizing the economy in terms of exchange rates volatility, the depreciation of the shilling, the runaway debt pressures of the government. The government through the CBK established the Monetary Policy Advisory Committee (MPAC) which was mandated to stabilize the economy against macroeconomic shocks. The Monetary Policy Advisory Committee in 2008 through gazettelement changed to the current MPC.

2.4. The role of Central Bank in Financial Intermediation

As is the case the world over, central banks main role in a country is to stabilize the economy. Monetary policy is the tool most often used in the preservation of the value of the currency in an

economy. It involves the control of liquidity circulating in an economy to levels consistent with a predetermined economic growth target and price objectives set by the Government and outlined in its Monetary Policy Statement. Tight monetary policy raise interest rate and inflation rate and while it reduces spending by borrowers that depend on banks; thus a shrinking loan supply leads to a rising lending rate, which would discourage bank-dependent borrowers' activities.

When a Central Bank is 'easing', the money supply increases and when it is tightening, the money supply decreases. In the condition of easing more liquid money is available for the private banks thus as the supply of money increases the interest rate decreases. During the condition of tightening the liquid money is pulled out of the private banking sector. Central Banks also create new reserves that let the banks lend out more money. Then through the process of the money multiplier, the loans and bank reserves increase. Central Banks formulates policies after detailed analysis and estimation of the demand for money using discount window operations, reserve requirements, and open market operations; and also plays the financial intermediation role. This is a process that involves surplus units depositing funds with financial institutions who then lend to deficit units at an interest Bhattacharya and Thakor, (2007). Interest rates are prices charged to or paid for the use of money.

In Kenya, Monetary policy is formulated and issued by the Central Bank of Kenya (CBK) under the Central Bank of Kenya Act of 1996. Thus, the authority to formulate and implement monetary policy rests with the CBK. A Monetary policy issued by the CBK is directed at achieving and maintaining stability in the general level of prices, to foster liquidity, solvency and proper functioning of a stable market-based financial system. The intention of the CBK in

altering the CBR is to control the supply of money, often targeting a rate of interest meant to attain a set of objectives, oriented towards the growth and stability of the economy.

The CBK has in place a Monetary Policy Committee (MPC) mandated with the work of formulating the monetary policy. The MPC then prepares the bi-annual Monetary Policy Statement based on the survey results, where it sets the rate of interest which the Central Bank charges on loans to commercial banks.

This rate is referred to as the Central Bank Rate (CBR), and it signals the monetary policy stance of the CBK.

2.5 Contributions of MPC on the Banking Sector in Kenya.

From the Structural Adjustment Programs to the Monetary Policy Advisory Committee to the current Monetary Policy Committee the various committees /program have all been aimed at helping stabilize the economy of Kenya from macroeconomic shocks external and or internal. The MPC in its objective of stabilizing the economy has also achieved other success such as providing credit access to majority of the Kenyans as well as allowing for Kenya to become the revolutionary country in terms of Mobile Money transfer.

2.5.1 Greater access to credit to the Producers.

In the early 1990's access to credit in Kenya was a reserve of business and high net worth individuals. Access to credit was very restrictive and the few individuals who managed to access credit were met with varying degrees of conditions to be met such as (traditional collateral e.g.

must possess a title deed to secure a loan), the loan thereafter is valued at a quarter of the land value.

The low-income earner in Kenya is characterized by mutually reinforcing challenges of low capital accumulation as well as access to markets, among others. Financial access in Kenya through the intervention of the CBK moved access from 18.9% in 2006 to 22.6% in 2009, and 36% in 2013 was accessing formal financial services. In the same period, the population excluded from banking decreased from “38.4% in 2006, to 32.7% in 2009 and 25% in 2013 “as detailed in Table 1 below (CBK 2014).

Table 2.1: Access to Credit in Kenya (Sampled Years)

Year	Formal (Banked)	Formal (Other Financial Institutions)	Informal	Excluded
2006	18.6%	7.5%	35.2%	38.4%
2009	22.6%	17.9%	26.8%	32.7%
2013	35%	32%	7.8%	25.4%

Source: CBK (2014)

Pre MPAC and MPC there were several barriers to accessing credit such as high costs to be legible for credit; distance travelled to access financial services; lack of traditional collateral i.e. title deed, large herds of cattle, stringent requirements for opening and maintaining accounts; high transaction cost; improper risk assessment and information asymmetry as well as generalized loan products that did not suit producer needs.

The CBK through the introduction and implementation of both MPAC and MPC has been able to reduce significantly the population that is excluded from the both the formal and informal banking services. The CBK has accomplished this through;

- a) Policy reforms such as introducing policies that encourage financial inclusion and market development/ reforms such as low requirements for microfinance setups as compared to banks.
- b) Encouraging of different products that are cost effective, serve different markets and that has low barriers to entry for credit-seeking customers.
- c) Regulation: strengthening regulatory capacity and capabilities to provide appropriate and adequate oversight over all financial services offered so as to better understand the market.
- d) Supporting the development of alternative financial infrastructures such as mobile money and microfinance institutions
- e) Promoting diversity and competition through licensing of deposit taking microfinance institutions, technology-based agent model banking as well as the introduction of Islamic financial services (including Shariah compliant banking products).

2.5.2 Revolution of Mobile Money Transfer

The World over it is acclaimed that Kenya is the benchmarking nation when it comes to the innovative use of mobile phone technology in driving both financial inclusion and the financial sector. Traditional models of financial services have been in existence since independence but have lacked that transformative edge with only 18% of adult Kenyans being served by formal financial services in the year 2006 as shown in Table 2.1 above. The introduction of mobile phone technology and its explosion after the year 2000 provided a suitable platform for Kenyans to easily and readily access financial services without the traditional restraints that characterized the then banking sector.

In 2005, the Central Bank of Kenya was overseeing an underdeveloped financial sector that despite high potential demand, suffered under the weight of inefficiencies and an inadequate statutory and legal framework to support the development of digital financial services. At the same time commercial banks were closing down rural branches due to high operational costs of maintaining them. It was against this backdrop that the CBK addressed an application by the Commercial Bank of Africa (CBA), Safaricom limited and Vodafone Group to authorize M-PESA, a mobile-enabled money transfer and payment service. The CBK worked with Safaricom Limited in ensuring that the product design was compatible with the existing legal framework and that Safaricom would not be intermediating M-PESA customer funds, which the Banking Act restricted to licensed banks only. The CBK put further measures to ensure that the cash was converted to mobile money and that bank notes or coins would be exchanged at par value for an equivalent amount of mobile money, the electronic value would be reflected on the customers mobile money wallet, which was accessible through their phones, and would remain in the

customer's possession and control (Muthoira, 2015). This all happened with the support of the Monetary Policy Committee that was willing to adopt advancement in the technological space.

The introduction of mobile phone technology and its explosion after the year 2000 provided a suitable platform for Kenyans to easily and readily access financial services without the traditional restraints that characterized the then banking sector. The CBK's has excelled in providing an enabling legal and regulatory environment for the mobile money platform to thrive. According to CBK 2014 mobile money platform success is grounded on a profound indulgence of the business models, the risks they pose, risk mitigating factors as viewed and model by the CBK pegged on the prevailing macroeconomic conditions at a given particular time".

The role of the CBK in creating an enabling regulatory environment for mobile money cannot be overstated. The population in Kenya (i.e. can access some form of formal or informal banking) increased from to 67% by 2013 from 26% in 2006 as shown in Table 1 above. This remarkable growth in financial access can be traced back to 2007, when non-bank providers began offering mobile money products and services, and the Central Bank of Kenya (CBK) adopted an inclusive and progressive approach to regulation. "Rapid customer uptake followed, due in large part to an ever-present distribution network at the grassroots level, trusted brands, and relatively low-cost transactions (compared to existing money transfer methods) "CBK 2015.

CHAPTER THREE

MONETARY POLICY INSTRUMENTS.

3.1 Introduction

The chapter covers the three variables Discount window operations (CBR), Open Market Operations (TBR), and Reserve Requirements (RR) it sampled the operations of a few banks and compared their operations Pre and Post MPC. The study went further in trying to understand the use of monetary policies in Kenya as envisaged by the CBK's Monetary Policy Committee and finally looked at the factors that would contribute to the none responsiveness of banks to the Monetary Policy Committees decision and instruments.

3.2 Operations of Banks Pre and Post MPC

3.2.1 Discount Window Operations (Post MPC) Jan – Dec 2012

Discount Window operations came after the establishment of the MPC following Gazette notice 3771 on 30th April 2008. It was first discussed in the meeting of the Monetary Policy Advisory Committee which resolved that the Central Bank Rate would be a signaling sign on the intention in which the monetary policy committee intended to take the country.

In the year 2012 there was a favourable domestic macroeconomic environment and improved weather conditions provided the base for the continued decline in inflation which stood at (18.01% in Jan, 10.05% in June and 3.25% in Dec of 2012), and stability in the exchange rate witnessed which averaged (1 Ksh =US \$ 84.91 in Jan, the US \$ 83.27 in June and the US \$ 83.75 in Dec of the same year).

The CBR remained the base for all monetary policy operations during the period covered by this Report. Movements in the CBR, both in direction and magnitude, signals the monetary policy stance that therefore reflected changes in short-term interest rates. Following the intervention of the MPC a decline in the risks to macroeconomic stability was observed, the MPC adopted a gradual easing of the discount window operations (CBR from 16.5% in July, 13% in Sept to 10% in Dec this so a gradual decrease by the tier 1 banks of the Lending interest rates from 20.3% to 19.73% and 17.78% respectively for the same period. The CBK also changed its policy to maintain a daily presence in the market through Open Market Operations (OMO) thereby reducing volatility in the interbank rate and ensure that it aligned to the CBR.

The MPC decisions adopted in the (year Jan to Dec 2012) enabled the government to meet its obligations for the disbursement of the US \$ 600 Million syndicated loan in June 2012. The

average remittances of US \$ 90 Million month on month in the year 2012 helped the government foreign exchange reserves increase from US \$ 4980.2 Million (approximately 4.12 months of import cover) in April 2012 to US \$ 5,477.6 Million (approximately 4.23 months of import cover).

3.2.2 Open Market Operations (Pre MPC) Jan – Dec 2005

The government through the CBK participates in the controlling money supply in the economy in many ways one of the many ways it did so pre the formation of the Monetary Policy Committee formation was through the use of repos.

In early 2004 the government through the CBK pursued a tight monetary policy with the expansion of reserve money confined to below 5%. Partly as a result of this policy stance tier 1 banks i.e. (Barclays Bank, Standard Chartered Bank, KCB, Co-operative Bank & CFC Stanbic Bank), revised rates increased from below 12.12 % in January 2005 to about 13.09% percent by June 2005, inflation at the time stood at 14.97% in Jan and had decreased to 11.8% by Jun of the same year owing to the tight monetary policy.

The economy at the time had experienced new development projects and strong expansion in credit to private sector as well as a threat of rising oil prices were seen as a stumbling block to the targeted 5 %inflation objective. Consequently, the Bank considered it prudent to continue with a tight monetary policy by limiting the expansion of reserve money to 5% of the bank's deposit liabilities.

In its review of the monetary policy statement in September 2005 the CBK found that the key economic indicators such as a good harvest coupled with a strong shilling had led to a neutrality effect of the monetary policies used. As a result of these developments, the CBK modified its monetary policy stance in October 2005. The CBK mopped up extra liquidity by way of a repo and increasing the reserve money growth to 6.3 % from 5%. With these modifications, the repo rate, interbank and 91-day Treasury bill rates eased to range between 7% -8 %percent by December 2005 as the tier 1 banks placed their Lending interest at an average of 12.93%.

3.2.3 Open Market Operations (Post MPC) Jan – Dec 2008

At a snapshot in the Year 2008, the economy was recovering from the post-election violence that had adversely affected economic performance. GDP growth rates were negative and inflation rose sharply from (18.22% in Jan to 31.54% in June) of the same year this was largely attributable to the increases in food prices arising from the shortages caused by the inability to transport food effectively. Furthermore, world oil prices rose to record heights (US \$ 92.25 per barrel in January to US \$ 134 per barrel by June of 2008) hence increasing pressures on inflation as production cost increase and resultantly increase in prices of almost all commodities.

In the same year there was an IPO involving Safaricom Limited which was oversubscribed by over 400% and diverted temporarily more than 20 percent of the total money supply in the economy. The banking sector witnessed significant shifts in deposits which resulted in a skewed distribution of liquidity in favor of the receiving banks at the expense of the rest of the commercial banks. The CBK participated in Open Market Operations (OMO) to correct the

situation where it mopped up liquidity (from banks with liquidity) as well as to inject liquidity (to assist banks without liquidity). This, therefore, provided support for banks that were experiencing liquidity shortfalls and mopped liquidity from banks with excess reserves.

To arrest deteriorating inflation rates exchange rates, crude oil prices as well as the negative GDP growth the Central Bank had sold foreign exchange worth \$100m for monetary policy purposes. This was occasioned by the REPO office exchanging its stock of repo securities of \$30m in February, \$50m in March and \$20m in April 2008. This complemented efforts of the Bank to mop up liquidity from the market shifting tier's one average lending rates from 13.78% in Jan to 14.06% in July and 14.78% in Dec of the same year. Due to the liquidity glut the government in trying to mop up excess liquidity also used the treasury bills that recorded a 67% subscription.

Table 3.1 OMO operations in the Period Jan – Dec 2008

OMO (REPO)			
	Desired Mop Up	Actual Mop Up	Deviation
	(Ksh Billions)	(Ksh Billions)	(Ksh Billions)
Jan 2008	3.90	4.50	0.60
June 2008	2.80	4.70	1.90
Dec 2008	1.90	2.40	0.50

Source: CBK 2008

Table 3.3 goes to show the government efforts in trying to mop up extra liquidity, using Repo the government internal managed to mop up 4.8 billion Kenya shillings for the period Jan 2008 to

Dec 2008, thus enabling a decline in inflation from an all-time high of 31.54% in June to 27.72% in December of the same year.

3.2.4 Reserve Requirements (Pre MPC) Sep 2000 – Dec 2001

In early 2001 the CBK was grappling with a high rate of inflation of 10% against the desired target of 5%, the Central Bank then intensified its monetary policy efforts towards maintaining price stability, aimed at achieving an inflationary rate below 5%. To achieve this objective, the Bank had set the path of reserve money/requirements, (as shown in Table 3.1 below, as its intermediate response to the spiraling inflation, this was consistent with the expected rate of economic growth and the target inflation outcome.

Table 3.2 Reserve Money Performance Sep 2000 – June 2001

	Actual(M)	Target(M)	Performance (Actual – Target) (M)
Sep 2000: Reserve Money	74305	76271	-1966
Dec 2000: Reserve Money	74816	74284	372
Mar 2001: Reserve Money	73612	73624	-12
June 2001: Reserve Money	71659	71382	277

Source: CBK 2001

In September of 2000 the top tier 1 banks i.e. (Barclays Bank, Kenya Commercial Bank, Co-operative Bank of Kenya, CFC Stanbic Bank), all had an average lending rate of **22.45%** before the start of the CBK intervention on the economy with the introduction of the reserve requirements. In the early 2001 i.e. Dec 2000 & Jan 2001 the CBK introduced reserve requirements at 15% in a bid to slow down monetary expansion and help slow down rising

inflation in the economy at the time when the CBR was at 20.3% and the tier 1 banks average LIR stood at 25.19% overall inflation stood at 9.4% in the same period. The response was immediate as reserve money grew from -1966 to +372 over the start of the period. Pressure from depreciating shilling which stood at US \$ 68.41 in January 2000 to US \$ 73.74 in March 2000 led to the ease of the reserve requirements to 12% in March and a subsequent drop in tier 1 average LIR of 23.11% in the same period.

In Oct 2001, the Bank revised the minimum cash ratio from 12% to 10% in line with its medium-term policy to move away from the use of cash ratio to open market operations in the management of domestic liquidity. To ensure that the expansion in money supply is contained within the range compatible with the inflation target and the expected level of economic activity.

This revision and previous downward trends of the CBR from 20.3% in January 2001 to 9.2 % in August of the same year saw the Tier 1 banks reduce their LIR from 25.19% in Jan to 19.6 % in the same year period the exchange rate fluctuations, depreciated the shilling to the US \$ 79.6 in Nov of 2001.

The slowdown in monetary expansion helped to contain the inflationary pressures and the underlying month on month inflation declined from the 10% observed in Jan 2000 to about 6.6 % in Nov of the same period.

3.2.5 Reserve Requirements (Post MPC) Jan- Dec 2010

The overall aim of the MPC for the period Jan 2000 –Dec 2000 was to set policy guidelines and targets that would reduce inflation with a target of 5%, increased reserve money, stable and flexible exchange rates.

Table 3.3 Reserve Money Performance Jan 2000 – Dec 2000

	Actual(B)	Target (B)	Performance (Actual – Target) (B)
Jan	210.4	181.4	29
July	199.8	187.2	12.6
Sep	201.2	182.8	18.4
Dec	221.0	202.6	18.4

Source CBK 2010

The Monetary Policy Committee set out a target of achieving 202.6 Billion, which would represent a 4.5% of the total banks (43 commercial banks) deposit liabilities in the year 2010. This was achieved through the periodic raising of the cash reserve ratio from 7% in Jan and maintaining it at 12.5% for the period of August through to December this had the effect of the tier 1 banks i.e. (Barclays Bank, Standard Chartered Bank, KCB, Co-operative Bank & CFC Stanbic Bank), revised their lending interest rates from 14.98% in Jan, 13.87% in Dec this was a result of the CBK reducing the CBR from 10% in January to 5% in Dec of the same year.

Inflation fell from 5.95% in Jan 2010 to 4.51% in Dec of the same period this was due to the steps taken by the MPC which signaled economic growth and economic stability which lead to money supply in the economy being boosted by foreign exchanges from 1.106.6 Billion in January to 1281.6 Billion in December 2010, this was attributed to the strengthening of the shilling against the dollar from an average US \$ 81 in Jan to US \$ 74 in Dec of the same period.

The effect of MPC is distinctively clear from a period where the MPC was non-existent (early 2000 and 2001) the Reserve requirements failed in arresting the exchange rate as well as the spiraling inflation rate as opposed to post MPC where the MPC achieved by raising the reserve requirement target (i.e. positive money reserves), reducing and meeting inflationary pressure target (4.51%) and strengthened the shilling US \$ 74 in Dec from US \$ 81 in Jan of the same period.

3.3 Monetary Policy Use in Kenya (Pre MPC)

The era of structural adjustment programs and pre the Monetary Policy Committee experienced periods of high inflation rates, volatile unpredictable exchange rates and unstable economic environment for investments. The government in the same period was heavily in debt and relied on domestic borrowing to plug in holes in the budget, continuous local borrowing strained the economy pushing the domestic lending rates to 32.28% in April 1994.

To arrest the situation the government through the CBK formed the Monetary Policy Advisory Committee. The Government of Kenya's undertook to support the efforts of the Central Bank of

Kenya's policy initiatives with the creation of a Monetary Policy Committee, in line with best practice in other parts of the world. By Gazette Notice 5756 of July 2005, the Government appointed six non-executive members to the newly formed Monetary Policy Advisory Committee (MPAC).

The MPAC resolved to use CBR as a signaling tool to guide the economy in terms of direction the country was to take. In this period the CBK heavily relied on reserve money to correct and safeguard against adverse macroeconomic shocks such as spiraling inflation rates, inflationary pressure from rising crude oil prices, adverse fluctuating exchange rates as well as the ever increasing Bank Lending rates.

3.4 Monetary Policy Use (Post-MPC)

Through a gazette notice 3771 of 30th April 2008, the Monetary Policy Committee was established to regulate and guide the financial sector of the economy. The MPC was mandated to stabilize the inflation of the country at 5% as well as having a predictable lending interest rate as well as exchange rate so as inform investors of the business direction of the country.

The MPC after its establishment used a varying degree of policy instruments in trying to achieve its set out monetary policy commitments. The government used a varying range of instruments such as Repos, 91 Treasury bills as well as reserve requirements to mop up excess liquidity from the economy. The CBR as set out by the Monetary Policy Committee of the Central Bank of Kenya has proved to be effective at influencing forex and inflation numbers but less so in signaling private sector borrowing. The MPC's objective in stabilizing the economy wished for

immediate results but the studies shows the CBR was effective but often with lags of several months as opposed to the immediate response sought by the Monetary policy committee.

For example an increase in the CBR according to the MPC thinking would be intended to cause inflation to fall through the exchange rate effect immediately (i.e. within a month's time). However the responsive change is only felt four to seven months by the economy hence negating the purpose of the policy. In the annual report of 2013 CBK using its own research put forth a statement stating that an upward review of the CBR & Lending rates does not reduce private sector credit until after three months (CBK 2013), after the change and the impact of bank lending rate in reducing private bank credit is significant around after three to five months. Thus, the increases in lending rates are not strongly translated to lower credit to the private sector. The study went further ahead and suggested that inter-bank competition would help in transmitting the monetary policy committee's objective and reducing the lag to below one month.

The study also found that change in the CBR had some effect on the Nairobi Securities Exchange four month after the MPC decision to either increase/ decrease the Central Bank rate. This can be plausibly explained by the fact that normally when interest rates rise prices of bonds fall making them less attractive hence making stocks a more profitable venture for investors.

3.5 Factors that contribute to Bank non-responsiveness to Monetary Policy Changes.

The Monetary Policy Committee sets the Central Bank Rate as a signaling sign the MPC wants to guide the country on. The CBR is presumed to be an immediate cure to the different

macroeconomic shocks ailing the country at the time but in most cases that not the CBR does not always achieve its targeted objective immediately.

A snapshot of the year 2010 when the MCP revised the CBR in Jan to 7% and 6.75% in April of the same period the top tier 1 banks revised their rates from 14.98% in Jan to 14.58% in April of the same year. In another period the year 2011 in May the CBR was revised to 6.5%, 7% in Sept and 11 % in Sept in the same period the Tier 1 banks i.e. (Equity Bank, Barclays Bank, Kenya Commercial Bank, Co-operative Bank ad CFC Stanbic Bank) revised their rates accordingly to 13..88% in May, 14.79% in Sept and 20.04% in Dec of the same year. Following the same trend the CBR in the year 2012 stood at 16.5% in July, 13% in Sept and 10% in Dec the tier 1 banks responded and their bank lending interest rates stood at 20.3% in July, 19.73% in Sept and 17.78% in December of the same year.

There are several factors that caused the disproportionate responsiveness of banks to CBR changes for example in the year ending 2011 banks costs of operations accounted for more than 46% of the direct operations cost, coupled with a depreciating shilling that stood at 1 Ksh = US \$ 101.27 banks sought to decrease their rates marginally as when the CBR changed from 7% in Sept to 11%(i.e. increase of 3%) in Dec, tier 1 banks averaged 14.7% in Sept and 20.04% in Dec (i.e. an increase in 5.34%).

The excess liquidity in the market also contributes by making the banking system less sensitive to changes in CBR rates that are supposed to reflect the lending interest rates.

CHAPTER FOUR

EFFECTS OF MONETARY POLICY

4.0 Introduction

This section covers the empirical analysis of the sampled secondary data regarding the variables under consideration in the study. The data was tested for stationarity of the variables and the residual, correlations, and Cointegration. Regression analysis for the same sample covering the period 2000-2014. E-views, econometric software were used to analyze the data. The study then studied the remittances culture of Kenya vis-a-vis the MPC trend as well as the investments of the international community in shares and stocks in certain time periods.

4.1 Diagnostic test for normality

The Characteristics of the distribution of the variables are presented in table 4.1 below.

Table 4.1: Descriptive statistics

	LIR	CBR	TBR	RR
Mean	17.40527	11.34518	6.28987	9.44583
Median	15.25742	11.301	5.25754	10.89710
Maximum	24.08909	15.19075	21.09633	12.77380
Minimum	8.48497	5.26509	8.13243	8.49087
Std. Dev.	6.00547	1.76049	7.56981	5.67532
Skewness	0.04001	0.07810	0.09105	0.24661
Kurtosis	1.83000	1.78355	2.42820	1.32187
Jarque-Bera	2.46410	2.69492	0.64520	2.48139
Probability	0.29169	0.2599	0.72426	0.06453
Observations	60	60	60	60

From the test, the distribution probabilities for LIR is 0.292, CBR is 0.2599, TBR is 0.724, RR is 0.0645 (for a normal distribution, the probability should be greater than 0.1). Therefore, all variables are normally distributed. The statistic for Kurtosis (K) shows, LIR, CBR, TBR, and RR are platykurtic, suggesting that their distributions are flat about the normal. Skewness (S) for LIR is 0.04, CBR is 0.0781, TBR is 0.091, RR is -0.247 (for normal distribution, skewness: S=0). From the results LIR, CBR TBR and RR were all positively skewed. The Jarque-Bera test was used to determine whether monetary policy instruments and Bank lending rates follow the normal probability distribution. It utilizes the Skewness and kurtosis measures and uses the following formula;

$$JB= n [S^2/6 + (K-3)^2/24]$$

Where n = sample size;

S = skewness coefficient; and

K = Kurtosis coefficient.

The JB normality test is a joint hypothesis that of skewness (S) and kurtosis (K) (for a normal distributed variable, $S=0$ and $K=3$). Therefore we conclude that all the variables in our study are not normally distributed since there is no variable whose distribution has $S=0$ and $K=3$.

The standard deviation is a measure of variability from the mean. From the test, we find that LIR has the greatest variability (6.0075) while CBR has the smallest variability (1.7605) from the mean. The minimum, maximum, median and the mean, shows the smallest growth rate, the maximum growth rate, the middle growth rate and the average growth rate for each variable respectively.

4.3 Test for Stationarity

When estimating a model that includes time series variables, it is necessary to ensure that all time series variables in the model are stationary, which means that they were integrated of the same order. This was done by conducting a unit root test on each variable to find the order of integration. A stationary variable has a time-invariant mean and covariance. Estimation based on non-stationary variables may lead to spurious results with high R^2 and t-statistics, but without any coherent economic meaning and inconsistent parameter estimator. This is called spurious regression.

An I (0) series is a time series that is stationary at level. An I (1) series contains one unit root and is a time series that is stationary at first difference. If the time series data is non-stationary, and y_t is differenced d times before it became stationary, then it is said to be integrated of order d. We write $y_t \sim I(d)$. So if $y_t \sim I(0)$ then $\Delta dy_t \sim I(0)$. If the variables in the regression model are non-stationary, that is, not integrated of the same order and then, the analysis will call for the error correction model to be run. However, if stationary, that is, integrated of the same order, then, we go ahead with our analysis using the OLS.

In this study, Augmented Dickey- Fuller (ADF) test was used to test for unit roots. The results are as shown in the table below. The decision criterion involves comparing the computed ADF statistic values with the Mackinnon critical values for the rejection of a hypothesis of unit root. If the computed ADF Statistic is smaller compared to the critical values, the null hypothesis of non-stationarity in time series variables is rejected and vice versa. In our case (Table 4.3), the computed ADF test-statistics are smaller than the critical values at 1%, 5%, 10% significant levels, therefore, we can reject H_0 . It means the time series does not have unit root problem, and the series is stationary at 1%, 5% and 10% significant level. In our case (Table 4.3), the results show that LIR is stationary at level i.e. I (0) at 5% significance. CBR is stationary at level i.e. I (0) at 10% significance while TBR and RRR are stationary at level; I (0) at 1% significance.

Table 4.2: ADF Unit-Root Test (at zero difference) Results

Variable	t-Statistic	Test critical values			Remark	Order of Integration
		1% level	5% level	10% level		
LIR	-3.899718	-4.186481	-3.51809	-3.189732	Stationary	I(0)**
CBR	-3.428392	-4.205004	-3.526609	-3.194611	Stationary	I(0)*

TBR	-4.081079	-3.596616	-2.933158	-2.604867	Stationary	I(0)***
RR	-4.761063	-4.205004	-3.526609	-3.194611	Stationary	I(0)***

Notes: *Significant at 10 percent ** Significant at 5 percent, *** Significant at 1 percent; H_0 : there is a unit root

4.4 Cointegration test

If all variables are integrated of the same order, the second step is to estimate the model, also called a “Cointegration equation,” and test whether the residual of the model is stationary, in which case the model defines a long run equilibrium relationship among the co-integrated variables. This was done by generating the residual series using Eviews 7 Software, and the residuals were subjected to an ADF Test.

The computed values were compared with the critical values as shown in Table 4.4. The results show that there is the existence of co-integration. It shows that there is a linear combination between the dependent variable Lending Interest Rate (LIR) and the independent variables Central Bank Rate, Treasury Bank Rate and Reserve Ratio requirements.

Table 4.3 Unit Root Test for residual results

Variable	t-Statistic	Test critical values			Remark	Order of Integration
		1% level	5% level	10% level		
Residual	-6.390081	-3.596616	-2.933158	-2.604867	Stationary	I(0)***

Notes: ** Significant at 5 percent, *** Significant at 1 percent; H_0 : there is a unit root

The results indicate that these residuals are stationary, at 1% significance (i.e. I (0)). The linear combination of the variables of the model is stationary, and they are co-integrated which shows the presence of a long-run relationship between the dependent and independent variables.

4.5 Correlation Analysis

The correlation analysis is a statistical technique employed to analyze the relationship between the variables used in the study. Column 2 shows the relationship between the dependent and independent variables. From the results CBR and TBR, are directly correlated to LIR (note the positive sign) while RR is inversely correlated to the same (note the negative sign). Columns 3, 4, 5 and 6, show the relationship among the explanatory variables. The correlation matrix shows that all the variables are not highly correlated (for high correlation, the coefficients are above 0.8). As a result, the problem of multicollinearity brought about by a high correlation between the variables was avoided. This outcome gave the researcher the green light to run the OLS, model.

Table 4.4 Correlation Matrix

	LIR	CBR	TBR	RR
LIR	1.00000	0.17925	-0.31476	0.28948
CBR	0.17925	1.00000	0.11386	0.17806
TBR	0.31476	0.11386	1.00000	-0.31356
RR	-0.28948	0.17806	-0.31356	1.00000

4.6 Testing the OLS Model

The tests determine the impact of independent variables on the dependent variable by comparing the results of the model. In this study, the test was to govern the impact of MPC i.e Central Bank Rate (CBR), Treasury Bank Rate (TBR) and Reserve Requirements (RR) on Bank Lending Rates (LIR)

Table 4.5: OLS analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-25.08526	4.20929	-5.95950	0.00000
CBR	0.23530	0.13026	1.80642	0.07880
TBR	0.35839	0.04146	8.64362	0.00153
RR	-0.00492	0.07049	0.06981	0.94470
LIR (-1)	-0.00556	0.15004	-0.03708	0.06735
R-squared	0.741075	Mean dependent var	14.40527	
Adjusted R-squared	0.704086	S.D. dependent var	6.00547	
S.E. of regression	3.298606	Akaike info criterion	5.21680	
Sum squared resid	380.80820	Schwarz criterion	5.42159	
Log likelihood	-103.16110	Hannan-Quinn criter.	5.29232	
F-statistic	20.03487	Durbin-Watson stat	1.87511	
Prob(F-statistic)	0.00000			

Discussion of results and Comparison with other Findings.

An examination of the econometric results shows that the overall fit is satisfactory with an R-squared (R^2) of 0.741075 or 74%. It implies that LIR, CBR, TBR and RR explained about 74% systematic variations of Bank Lending rates (LIR) over the observed years in the Kenyan economy while the remaining 26% variation was explained by other determinant variables outside the model. The value of Durbin-Watson is 1.88 for the model. This fell within the determinate region and implies that there is a positive first order serial autocorrelation among the explanatory variables in the model.

The potency of CBR in explaining LIR in the country is positive and is statistically significant at 10 percent significance level ($p\text{-value} < 0.1$). Which can be interpreted to mean that one percent (1%) increase in CBR will cause LIR to increase by 0.23530 percent, *ceteris paribus*. The result is consistent with the works of Misati et al, (2010), Kashyap and Stein, (2007) and Cecchetti,

(2008) who found that the Central Bank rate was the greatest determinant of bank lending rates. A plausible interpretation of these results is that an increase in the CBR will automatically lead to an increase in the LIR through the increase in KBRR + bank specific margins.

TBR was also found to be an important determinant of Bank Lending rates at 1% significant level ($p\text{-value} < 0.01$). This implied that a one unit increase in TBR would lead to increase in LIR by 0.35839 units. It can be inferred TBR ratio has a positive impact on LIR in Kenya. The result is consistent with the works of to Somoye et al. (2009), Akhtar, (2007), Adams, et al. (2005) and Kashyap and Stein (2007). A probable interpretation of these results is that an increase in the TBR, which guides the economic environment in terms of the approximate prevailing risk-free rate of return for the next three months. An increase in the TBR rates will lead to a significant increase in the LIR since banks will view this as a sign of increase investment. Borrowers will borrow more, and there will be excess money supply to counter this the govt will use monetary policy instruments to mop up the excess liquidity and hence an increase in LIR.

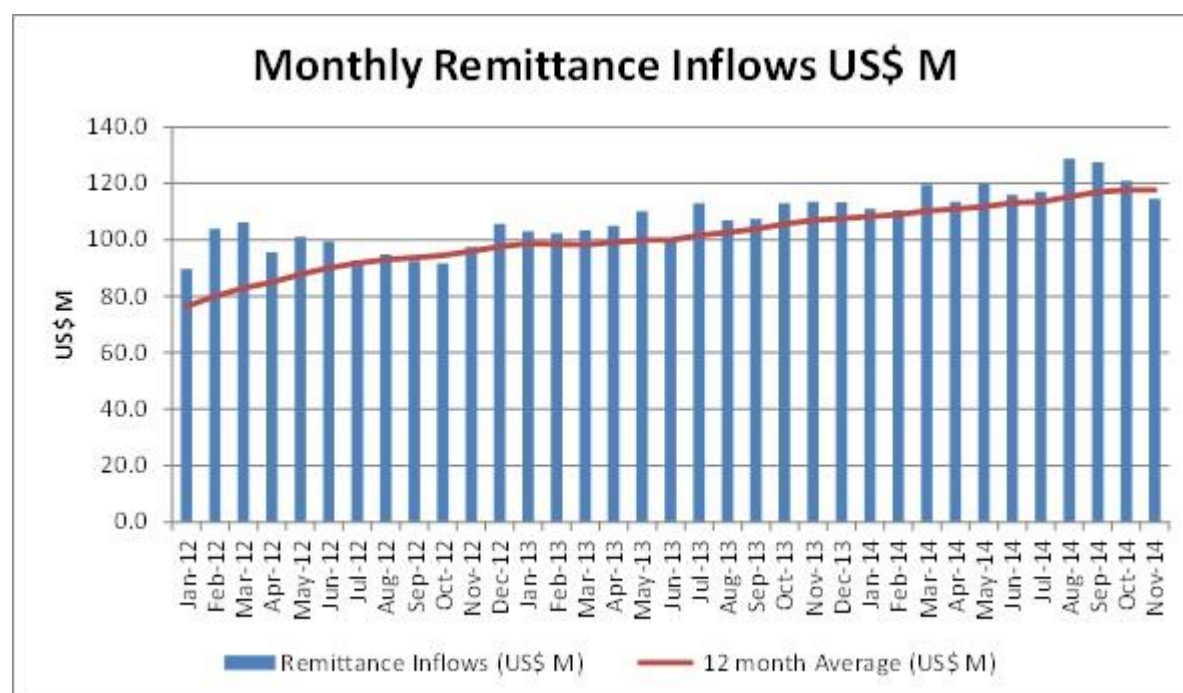
Reserve Requirement ratio was not an important determinant of Bank lending rates at 1% significance level ($P\text{-values} > 0.1$). This implied that a one unit increase in reserve requirements will lead to a decrease in GDS by 0.00492 units. It was inferred to mean that Reserve Requirements have a negative and insignificant impact on LIR in Kenya. The result is consistent with the works of Mohammad (2010), Somoye and Ilo (2009), Hancock and Passmore, (2006) and Buigut (2010).

A probable interpretation of these results is that Reserve Requirements are used as a means of the last resort by the CBK in trying to arrest excess liquidity. The Reserve requirements make the commercial banks have less liquid money for lending /loan purposes and as such will lead to an increase in the LIR. Further to this, the study found a negative relationship to this which was consistent with other works. A plausible explanation would be that the CBK hardly uses it as an MPC tool unless in instances of spiraling shilling depression and high bank lending rates and hence the negative and insignificant relationship to LIR.

4.7 Effects of MPC on Inward Remittances.

The Monetary Policy Committee in its capacity and role in trying to stabilize the economy has from time to time adjusted its tools of Monetary Policy in coming up with a solution depending on the prevailing economic conditions at the time. In so doing these adjustments have both negatively and positively affected the international community in terms of signaling the intention and direction that the MPC intends to take the economy towards.

Figure 2: Sample of Monthly Remittances



Source: CBK 2014

From figure 2 above at the snapshot of the period of July 2012 and Dec 2012 remittances were recorded at approximately the US \$ 90M and the US \$ 105 in December 2012. In that same period the country was grappling with high inflation rates that ranged from 12.22% in July to 6.17%. In December of the same year to try and stabilize the economy and as well as meet the obligations of the US \$ 600M syndicate loan due in June 2012 the government had the CBR rate at 16.5% in July and reduced the same to 13% in December. There was a non-responsiveness from the banks that reduced their Lending rates from 20.15% in July 2012 to an average of 19.02% in December of the same year.

The high non –responsiveness in this period was attributed to high cost of doing business in Kenya which was despite positive developments in the economy during this period, the

continued slowdown in the global economy due to the persistent instability in the Eurozone, volatile international oil prices, and a high current account deficit remain the main risks to maintaining a low and stable inflation rate, and exchange rate stability.

The Signaling effect in the period July 2012 to 2015 was that the MPC was reducing inflation, payment of external debt amounting to the US \$600 M as well as curbing the volatility in crude oil prices. In that same period as inflation fell from 12.22% to 6.17% and the culmination of the debt payment, the international remittances increased from approximately the US \$ 90M in July 2012 to the US \$ 105 in December 2012.

4.8 Effects of MPC on Investments in Stocks and Shares and Foreign Direct Investments.

According to the Economic Intelligent Unit Measure inward direct investments in the period July 2012 stood at the US \$ 160 M for the period from January 2012 to July 2012. After the Monetary Policy Committee meeting of 5th July 2012, which resolved to decrease the CBR, after the external debt had been paid off and cushioning the depreciation of the shilling having a provisionary dollar reserve for trading in crude oil, foreign direct investments rose from an average of US \$ 20M a month to an average of US \$ 39M a month for the six months from July 2012 to December 2012. The stock of foreign direct investment as at the year ended Dec 2012 amounted to the US \$ 3018M showing the positive effects of the MPC decisions.

In the year ended 2011 the economic growth of Kenya registered a 5.8% economic growth rate. This acted as a signaling effect and investor confidence to the foreign investors who for the financial year ended controlled 12.6% of the bourse, by the end year 2012 owing to the positive economic growth and results coupled with a reduction in inflation, stable economic conditions

and investor confidence resulted in foreign-owned shares jumping to 19.44% of the total bourse. This revealed that the demand for Kenyan companies stocks was considered a frontier market by big western investors as investment options elsewhere around the world narrowed.

4.9 Comparison of Findings with other Local Studies

Our study which sought to investigate the impact of Monetary Policy Instruments as drawn up by the Monetary Policy Committee of the Central Bank on Commercial Bank's Lending Interest Rates in Kenya and the signaling effect it had to the International Investor Community. The study found that the Central Bank Rate (CBR), Treasury Bill Rate (TBR) were both positive and significant monetary policy instruments that influenced bank lending interest in the manner as envisaged by the Monetary Policy Committee. Further to this the study found that the CBR and TBR as monetary policy instruments also had an impact on the foreign investor community in terms of signaling i.e the investors took keen note of the movement of the policies to know the direction the CBK was taking. The study however, found Reserve Requirements to be negative and insignificant as a monetary policy tools in helping the monetary policy committee's cause as well as trying to signal the international investor community in terms of the direction and magnitude that the committee intends to take.

The results from our study are supported by a study titled *"Bank Rate and the Transmission Mechanisms of Monetary Policy in Kenya"* done by (Mwega 2013), who was a member of the Monetary Policy Committee at the time. The study found that CBR and TBR as instruments frequently used by the CBK for monetary policy were effective but often with a lag of several

months as opposed to immediately. The study found that an increase in the CBR caused inflation to fall through the exchange rate effect from the fourth to the seventh month. The study found that shows an increase in the CBR, TBR and lending rates does not reduce private sector credit amounts until from the third month after the change.

Our study results were also further supported by a study titled “*The choice of Optimal Monetary Policy Instruments for Kenya*” done by (Gichuki, Odour and Kosimbei 2012). Using time series data sets for the period 1994 to 2010 and an Error Correction Model the study established that both TBR and CBR rates resulted in minimal losses in output compared to Reserve Requirements/ Money when used as monetary policy instruments. The study was also seeking to see which among the two instruments; (TBR, CBR i.e. interest rates) and Reserve Requirements/Money when used individual or simultaneously were most effective. The study established that a combination of the instruments minimizes losses from equilibrium output better than the other two instruments taken independently. The study recommended that the CBK should adopt a pure interest rate instrument policy i.e. (CBR and TBR). It went further to suggest that there was need for the CBK to construct a monetary policy conditions index which would help in the implementation of a combination instrument policy.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter sought to publish the major conclusions as mentioned in chapter four, summary conclusions and recommendations suggested by the researcher. The findings were summarized in line with the object of the study and how the objectives have been achieved.

5.1 Summary

The study sought to establish the Impact of Monetary Policy Instruments on Bank lending rates as well as the signaling effect on the International Investment Community. The study used all the

43 commercial banks in Kenya quarterly averages in regards to applicable (LIR, and RR) as well as the country's average quarterly TBR and CBR rates. The study found that CBR and TBR were positive and significant in explaining Banks' Lending Interest Rates in commercial banks. Reserve Requirements were found to be negative and not significant in explaining Banks' Lending Interest Rates in commercial banks.

5.2 Conclusions

The first objective of the study was to establish the extent to which discount window operations increase bank lending rates of commercial banks in Kenya. The variable was operationalized by use of CBR as a variable most suited to represent the discount window operations. The findings indicated that CBR rate has a positive and significant effect on Bank's Lending Interest rate. This implied an upward increase of the CBR will see the banks revise their Lending interest rates upwards all this under with the assumption of *ceterius paribus*.

The second objective of the study was to establish the influence of open market operations on commercial bank's lending rates in Kenya. The variable was operationalized by use of TBR as a variable most suited to represent the open market operations. The findings indicate that TBR had a positive and significant effect on Bank's Lending Interest Rates. This implies that an increase in the TBR would signal an increase in the banks will further push holders of loans to default hence an increase in the non-performing loans.

The third objective of the study was to establish the effect of Reserve Requirements on Banks' Lending Interest Rates of commercial banks in Kenya. The objective was operationalized by use of RR ratio as a variable most suited to represent the discount window operation. The findings

indicate that reserve requirement ratio was negative and insignificant in explaining the Lending Interest Rate in commercial banks. This implied that fluctuations in the ratio required by the CBK regarding commercial banks did not affect bank's LIR, this was elucidated by the fact that the CBK tends to use Reserve Requirement ratio as a measure of last resort in trying to arrest macroeconomic shocks as well as runaway depreciation of the shilling

5.3 Recommendations.

The study sought to provide more information to the Central Bank, Managers of commercial banks and International investors on the impact of the different monetary policy instruments/tools as used by the Central Bank of Kenya. Following the conclusions drawn from the above findings of the study, it is recommended that the Central Bank of Kenya should play a more regulatory and active role by ensuring that they use the RR as a first measure for trying to maintain economic stability and run away depreciation of the Kenyan shilling. The CBK through the MPC should try and come up with responsive mechanisms to better react to ever changing macroeconomic shocks affecting the country. The MPC currently meets every two months to set the policies that will govern the country, but an unforeseen macroeconomic shock affects the country negatively the Monetary Policy Committee should have a provision of impromptu meetings to better arrest spiraling macroeconomic conditions such as Inflation, Exchange rate fluctuations, loan repayment schedules and a depreciating shilling.

The CBK through the monetary policy committee should also implement measures that act in concert such as reserve requirements coupled with the introduction of the CBR liquidity

measures as it tries to arrest the liquidity risk in the market since the banking system is less sensitive to changes in CBR rates that are supposed to reflect the lending interest rates.

5.4 Suggestions for Further Research

The Impact of Monetary Policy Instruments on Bank Lending Interest rates and the signaling effects to the international investor community is a research area where a lot of research has not been carried out and also varying results have been published on the same. The signaling effect of the monetary policy instruments/tools to the international investor community especially is a relatively new area academically and not a lot of research has been done in Kenya and as such would be a great area of research to researchers and scholars alike.

REFERENCES:

Akhtar, M. A. (2007). Understanding Open Market Operations, Public Information Department, Federal Reserve Bank, New York NY.

Allen, F., and Santomero A. M. (2009). Journal of Banking & Finance No. 21 1461-1485, The Wharton School, University of Pennsylvania, Philadelphia, PA 19096, USA.

Benston, G.J., and C.W. Smith (2002). A Transaction Cost Approach to the Theory of Financial Intermediation. Journal of Finance 31, no. 2 (1976): 215-32.

Bernanke, B.S (2010). Credit in the macroeconomic. Federal Reserve Bank. Quarterly Review, NY, 18 pp 50-70.

Bett, K.A. (2011). Financial Performance of Banking Sector: A case of the Kenyan Banks and Financial Institutions, MBA Research Project, UON.

Bhattacharya, S., and Thakor, A.V., (2007). Contemporary Banking Theory. Journal of Financial Intermediation No. 3, pp 2-50.

Bibow, J., 2005. "Some Reflections on Keynes Finance Motive for the Demand for Money. *Cambridge Journal of Economics* 19(5), pp. 647-66..

Black, T. and Daniel, D. (2008). Money and Banking Contemporary Practices, Policies and Issues (6th ed.), Business Publications Inc., Texas, USA.

Buigut, S. (2010), Is There a Bank Lending Channel of Monetary Policy in Kenya? International. Research Journal of Finance and Economics, Issue 45, Euro Journals Publishing, Inc., <http://www.eurojournals.com/finance.htm>, retrieved on 27th September 2014.

Cecchetti, S. G., (2008). Money Banking and Financial Markets, 2nd Ed., McGraw Hill Companies Inc., 1221 Avenue of Americas, New York NY 10020.

Central Bank of Kenya, (December 2010). Monetary Policy Statement, at <http://www.centralbank.go.ke>, retrieved on 11th May 2011. Cecchetti, Stephen G. (1999). Legal Structure, Financial Structure, and the Monetary Policy

Central Bank of Kenya, (December, 2009). Monetary Policy Statement, at <http://www.centralbank.go.ke>.

Central Bank of Kenya, (2012). Bank Supervision and Annual Report,. <http://www.centralbank.go.ke>.

Central Bank of Kenya, (2013). Bank Supervision and Annual Report, retrieved on 15th September 2013 from: <http://www.centralbank.go.ke>.

Central Bank of Kenya, (August, 2014). The Monthly Economic Review, prepared by the Central Bank of Kenya retrieved from the internet at: <http://www.centralbank.go.ke>, site opened on 15th September 2014.

Central Bank of Kenya, (September, 2010). Developments in the Kenyan Banking Sector Bulletin, retrieved on 17th November 2010 from <http://www.centralbank.go.ke>.

Cooper, R.D., and Schindler, S.P. (2003). Business Research Method, (5th ed.), Irwin Press, Chicago, USA. Crowley, J. (2007/ Interest Rate Spreads in English speaking Africa, IMF Working Paper, April 2007, 123 - 145.

Dale, S. (2007). Interest rates and the channels of monetary transmission; Some Sectoral Estimates, European Economic Review, 39 pp.1611-1626

Ferreira, C, (2011). The bank lending channel transmission of monetary policy in the EMU: A case study of Portugal, The European Journal of Finance, 13(2) pp. 181-193.

Fisher, J.D.M. (2009). Credit Market Imperfections and the Heterogeneous Responses of Firms to Monetary Shocks ", Federal Reserve Bank of Chicago, Working Paper No. 96, pp 23.

Fofack, H., (2005). Ghazali, N. A. and Ali, K.A.M. (2002). The Effect of Open Market Interest Rates on Malaysian Commercial Banks' Interest Rate Spread: An Empirical Analysis. HUM Journal of Economics and Management 10, no. 1, The International Islamic University Malaysia.

Hancock, D. and Passmore, W., (2006). The Bank Lending Channel of Monetary Policy and Its Effect on Mortgage Lending, Public Information Department the Federal Reserve System, New York NY.

Hanson, J.L. (2005). A Textbook of Economics (7th ed.), Pitman Publishing, London.

Haug, A. A., O. IC, and Ranchold, S., (2008). Monetary policy transmission mechanisms and currency unions: A Vector error correction approach to a Trans-Tasman currency union, Journal of Policy Modeling, 27(1) pp. 55-74.

Johansen, S. (2010). Statistical Analysis of Co-integration Vectors, Journal of Economic Dynamics and Controls, 12 (2-3) pp. 231-254

Kahn, C, George P., and Ben S. (2010). Bank Consolidation and Consumer Loan Interest Rates, Consumer Transactions and Credit, the Federal Reserve Bank of Philadelphia and Wharton Financial Institutions Center Conference.

Kashyap, A. K., and Stein J.C. (2007). What do a million observations on Banks say about the transmission of Monetary Policy? American Economic Review, 90(3), pp. 407-428.

- Kobayashi, T. (2009). The Relationship between Short- and Long-Term Interest Rates, *International Finance Journal*, 7(2):261-286.
- Kuhnmiinch, G. and Beller, S. (2005). Distinguishing between causes and enabling conditions. *Cognitive Science*, 29, 1077-1090.
- Lucey, T., (1992). *Quantitative Technique*. The Guernsey Press Co. Ltd, Vale, Guernsey C.I. UK.
- Matthews, K., and Thompson J. (2008). "The Economics of Banking", Chichester Wiley Publishers, UK. Chapter 2, 3 and 9 - section 9.2., pp.35 and 36.
- Maturu, B.O., Kethi K. and Maana I, (2006). A New Keynesian Phillips Curve for Kenya, Central Bank of Kenya Working Paper Series, Working Paper WP/06/02, at <http://www.centralbank.go.ke/publications/swp/index.html>.
- McCallum, B., and Nelson E. (2006). An Optimizing IS-LM Specification for Monetary Policy and Business Cycle Analysis, *Journal of Money, Credit and Banking*, 31 (3):296-316.
- Misati, R. N., Njoroge L., Kamau A., and Ouma S. (2010). Financial Innovation and Monetary Policy Transmission in Kenya, *International Research Journal of Finance and Economics*, EuroJournals Publishing, Inc. 2010.
- Mishkin F.S., (2010). *The Economics of Money, Banking and Financial Institutions*, (6thed.), Addison Wesley, USA.

Mohammad, S.D., (2010). Impact of Money Supply on Current Account: Extent of Pakistan, European Journal of Scientific Research, Vol.41 No.2 pp.314-322, <http://www.eurojournals.com/eisr.htm> opened on 20th December 2010.

Mugenda O, & Mugenda A. (2003). Research Methods: *Qualitative & Quantitative Approaches*, ACTS Press, Nairobi, Kenya.

Mutwiri, M. (2007). Use of 6C's Credit Appraisal Model and its Relationship with the Level of Non-Performing Loans of Banks in Kenya, MBA Research Project, UON.

Somoye, R., Olukayode, C, and Ilo, B. M. (2009). The Impact of Macroeconomic Instability on the Banking Sector Lending Behavior in Nigeria, Journal of Money, Investment and Banking, Issue No.7, EuroJournals Publishing, Inc. at <http://www.eurojournals.com/JMIB.htm>. Transmission Mechanism, Federal Reserve Bank of New York Economic Policy Review, 5(2), pp. 9-28.

Madura, J., (2003). *Analysis and Evaluation of the Eurex Repo Market Model*. Unpublished MBA thesiss Institution / College Leopard-Franzens University, Innsbruck (Banking and Finance)

Markus K. B., (2009), Deciphering the Liquidity and Credit Crunch 2007–2008. *Journal of Economic Perspectives*—Volume 23, Number 1—Winter 2009—Pages 77–100

Matsuyama, K., (2007). Credit traps and credit cycles. *American Economic Review*, 97, 503-516.

- Morris, C. S and Sellon, G. H. (2005). Bank Lending and Monetary Policy: Evidence on a Credit Channel, *Economic Review*, Second Quarter 1995, 59-75.
- Nwankwo, G. O. (1990). *Prudential Regulation of Nigerian Banking*, Lagos: University of Lagos Press.
- O'Hara, L. (2005) *the implementation of monetary policy in Australia an examination of interest rate targeting and the endogeneity of liquidity*. Unpublished thesis University of Western Sydney
- Olivei, Giovanni P. (2002). Switzerland's Approach to Monetary Policy. *New England Economic Review*, Federal Reserve Bank of Boston (Second Quarter), 57–60.
- Kinyua, J.K. (2001). "Monetary Policy in Kenya: Evolution and Current Framework". Central Bank of Kenya Papers.
- KIPPRA, (2006). "The Future of Monetary Policy Regime in Kenya," Policy Brief No. 17/2006.
- Kydland, F.E., and Prescott E.C. (1977). "Rules Rather than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy*, 85 473 - 92.
- Maccallum B. T.(1995). "Two Fallacies Concerning Central Bank Independence, "American Economic Review Papers and Proceedings. NBER Working Paper 85 pp 207-211.
- Maturu, B. O. (2006). "Channels of Monetary Transmission in Kenya," A Paper Presented during the 12th Econometric Society Conference in Cape Town, South Africa on July 2007.
- Maturu, B.O., Kethi K., and Maana I., (2006). "A New Keynesian Phillips Curve for Kenya," Central Bank of Kenya Working Paper Series, Working Paper wp/06/02.
- Mote, Larry R., (1988). "Looking Back: The Use of Interest Rates in Monetary Policy." Federal Reserve Bank of Chicago Economic Perspectives pp. 15-29.

Niemann, S., Pichler P., and Sorger G. (2010). "Central Bank Independence and the Monetary Instrument Problem," *University of Essex, Department of Economics*.

Phongthientham P. (undated). A Combination of Monetary Base Targeting and Interest Rate Targeting: Case of Thailand. Chulalongkorn University.

Poole, W. (1970). "Optimal Choice of Monetary Policy Instruments in a Simple Stochastic Macro Model", *Quarterly Journal of Economics*, 84, pp 197-216.

Poole, W. and Lieberman C. (1972). "Improving Monetary Control," *Brookings Papers on Economic Activity*, No. 2 pp. 293-342.

Souleles, N. S. (2001). Consumer sentiment: its rationality and usefulness in forecasting expenditure

Stever, R., Wilcox, A., 2007. Regulatory discretion and banks' pursuit of —safety in similarity. BIS, *Unpublished working paper*.

Stiglitz, J. E., and Weiss, A. (2001). Credit Rationing in Markets with Imperfect Information, *American Economic Review*, June, 393-410.

Usman, S. (2005, Jan- March). Bank Regulation and Supervision in Nigeria, *The Nigerian Banker*, 7-9.

Appendix: Stationarity Graphs.

Appendix 1: Unit Root Test Lending Interest Rate (LIR)

Null Hypothesis: SR has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.899718	0.0000
Test critical values: 1% level	-4.186481	
5% level	-3.518090	
10% level	-3.189732	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(SR)
 Method: Least Squares
 Date: 05/10/15 Time: 09:50
 Sample (adjusted): 2000Q1 2014Q4
 Included observations: 58 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SR(-1)	-0.900869	0.088079	-10.22794	0.0000
C	0.007930	0.005583	1.420432	0.1579
R-squared	0.449724	Mean dependent var		-0.000503
Adjusted R-squared	0.445425	S.D. dependent var		0.084534
S.E. of regression	0.062953	Akaike info criterion		-2.677605
Sum squared resid	0.507267	Schwarz criterion		-2.633489
Log likelihood	176.0443	Hannan-Quinn criter.		-2.659680
F-statistic	104.6107	Durbin-Watson stat		2.006565
Prob(F-statistic)	0.000000			

Appendix 2: Unit Root Test Results for Central Bank Rate (CBR)

Null Hypothesis: MS has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.428392	0.0000
Test critical values: 1% level	-4.205004	
5% level	-3.526609	
10% level	-3.914611	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MS)

Method: Least Squares

Date: 05/10/15 Time: 09:53

Sample (adjusted): 2000Q1 2014Q4

Included observations: 58 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MS(-1)	-1.196570	0.086427	-13.84488	0.0000
C	0.014659	0.001507	9.727694	0.0000
R-squared	0.599600	Mean dependent var		4.22E-05
Adjusted R-squared	0.596472	S.D. dependent var		0.019300
S.E. of regression	0.012260	Akaike info criterion		-5.949627
Sum squared resid	0.019240	Schwarz criterion		-5.905511
Log likelihood	388.7258	Hannan-Quinn criter.		-5.931701
F-statistic	191.6807	Durbin-Watson stat		2.012609
Prob(F-statistic)	0.000000			

Appendix 3: Unit Root Test Results for 91-Treasury Bill Rate (TBR)

Null Hypothesis: EXCR has a unit root

Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.081079	0.0000
Test critical values: 1% level	-3.596616	
5% level	-2.933158	
10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXCR)
Method: Least Squares
Date: 05/010/15 Time: 09.56
Sample (adjusted): 2000Q1 2014Q
Included observations:58 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCR(-1)	-0.986455	0.110245	-8.947817	0.0000
D(EXCR(-1))	0.223426	0.086742	2.575742	0.0112
C	0.001229	0.002221	0.553421	0.5810
R-squared	0.432905	Mean dependent var		4.45E-05
Adjusted R-squared	0.423904	S.D. dependent var		0.033179
S.E. of regression	0.025183	Akaike info criterion		-4.502317
Sum squared resid	0.079907	Schwarz criterion		-4.435809
Log likelihood	293.3994	Hannan-Quinn criter.		-4.475293
F-statistic	48.09258	Durbin-Watson stat		1.912303
Prob(F-statistic)	0.000000			

Appendix 4: Unit Root Test results for Reserve Requirements (RR).

Null Hypothesis: CPI has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.761063	0.0000
Test critical values: 1% level	-4.205004	
5% level	-3.526609	
10% level	-3.194611	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(CPI)
 Method: Least Squares
 Date: 05/10/15 Time: 10:00
 Sample (adjusted): 2000Q1 2014Q4
 Included observations: 58 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI(-1)	-0.649945	0.082291	-7.898130	0.0000
C	0.004807	0.001062	4.526233	0.0000
R-squared	0.327662	Mean dependent var		8.02E-05
Adjusted R-squared	0.322409	S.D. dependent var		0.012152
S.E. of regression	0.010003	Akaike info criterion		-6.356658
Sum squared resid	0.012807	Schwarz criterion		-6.312542
Log likelihood	415.1828	Hannan-Quinn criter.		-6.338732
F-statistic	62.38046	Durbin-Watson stat		1.858784
Prob(F-statistic)	0.000000			