

**EFFECT OF MONETARY POLICY INSTRUMENTS ON EFFICIENCY OF
COMMERCIAL BANKS IN KENYA**

BY

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DECLARATION

This project under research is my original work and has not been submitted for examination in any other University.

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DEDICATION

I dedicate this study to my parents and siblings. Without your support, understanding and love, the completion of the work would not have been possible.

ABSTRACT

Monetary policy instruments refer to measures put in place to control the supply of money in any economy. Commercial banks are usually considered around the globe as the most appropriate channels of implementing monetary policy by most central banks. The Central Bank of Kenya is charged with the responsibility of ensuring that sound monetary measures are in place. There is a very high degree of interdependence between monetary policy implementation and the financial efficiency commercial banks in an economy. In order to carry out this regulation effectively, government employs monetary policies as the primary tool to regulate the banking sector. The main target variables for monetary policy instruments are inflation and output. The actions from effects of monetary policy affects the general levels of efficiency of banks prevailing in the Country. The most complex issue facing central banks across the globe is identifying the appropriate level and firm of intervention in the banking sector through monetary policies. Locally, studies have focused on internal bank factors, interest rates, profitability but none has addressed the effect of monetary policy instruments on efficiency of commercial banks in Kenya. This study therefore seeks fill this gap by answering the query; what is the effect of Central Bank monetary policy instruments on efficiency of commercial banks in Kenya?The research study will base its arguments on the Keynesian theory, Quantity Theory of Money, Modern Monetary theory and loanable funds theory. The study used descriptive research design. The population of the study encompassed 42 commercial banks as at 31st December 2015. The research obtained absolute secondary data which was gathered from both annual reports and financial statements of the banks at the CBK and also from the Kenya National Bureau of Statistics (KNBS) for the period January 2011 to December 2015. The study focused on 91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate) as the independent variables. The dependent variable which is bank efficiency is measured using the DEA model.The study found out that 91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate) had a positive effect on bank efficiency. The conclusion is that central bank monetary policy instruments had a positive and significant impact on efficiency of Kenya's commercial banks for the period of this study. The study also recommends that local researchers and academicians should increasingly study the central bank monetary policy instruments to add on to the limited literature in the area. This will ensure that there will be adequate local literature that can be used to relate to local situation. The study further recommends that there should be a policy set to standardize the presentation of financial statements commercial banks in Kenya. Further studies can also use primary data to collect data from the commercial financial institutions in Kenya.

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ABBREVIATIONS

ANOVA	-	Analysis of Variance
CBK	-	Central Bank of Kenya
CRB	-	Credit Reference Bureaus
CRR	-	Cash Reserve Requirement
CRS	-	Constant Returns to Scale
DCF	-	Direct Credit Facilitation
DEA	-	Data Envelopment Analysis
DMUs	-	Decision Making Units
EXCH	-	Exchange Rate
GDP	-	Gross Domestic Product
IE	-	Interest Expense
II	-	Interest Income
LAB	-	Labor
M2	-	Money Supply
MFBS	-	Microfinance Banks
MFC	-	Mortgage Finance Company
MFIs	-	Microfinance Institutions
MMT	-	Modern Monetary Theory

MPI	-	Monetary Policy Index
OEA	-	Other Earning Assets
OMO	-	Open Market Operation
OOC	-	Other Operating Costs
QTM	-	Quantity Theory of Money
REPO	-	Repurchase Agreement
SLR	-	Statutory Liquidity Requirement
SPSS	-	Statistical Package for Social Sciences
TD	-	Total Deposits
US	-	United States

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

From recent studies, the relationship between monetary policy and economic growth has been more important in the field of monetary economics. Because of the importance of economic growth among developed and developing countries, persistent concern has always been given to economic growth influenced by the relationship between money supply and output. In any economy, banks can hardly survive without a positive return on capital invested. The foundation of this return lies in sound monetary policies which are the reserve of the Federal government on a country (Nibeza, 2011). Efficiency therefore becomes crucial and a driving

factor for activities of commercial banks fostered by the decisions of the board members (Ongore & Kusa, 2013).

Here in Kenya, Central bank is charged with the responsibility of ensuring that sound monetary measures are in place. In order to carry out this regulation effectively, government employs monetary policies as the primary tool to regulate the banking sector. Embedded in these monetary policies are the different types of instruments that are used to regulate the operations of banks in attaining efficiency in the economy (Zhang, 2011). The tools could act as a mitigating factor in boosting banks efficiency since they are an external factor to the banks. A country's economy has a traceable relationship to the factors affecting banks and this varies from one country to another. Monetary policies are exempted from recurrent distortions. In nations where development of capital markets has still not clicked to top gear economic activities depend on these tools. Monetary policy focuses on stabilization of economic imbalances. It deals with the currency system of the economic strategy which needs a more complex co-ordination of the other economic policy instruments be maintained at all times and monetary policy (Akhtar, 2006).

As a result of varying economic configurations, variations in levels of development in both types of financial markets, the effectiveness of money systems and their essence as instruments of stabilizing the economy differs with different economies. The end result is variations in terms of the efficiency of the economic environment and variations in the banking sector (Bernanke, 2005). The actions from effects of monetary policy affects the general levels of efficiency of banks prevailing in the Country. The Government of Kenya is able to control the levels of interest rates in the banking sector through the monetary policy tools. The two main goals of the Central Bank of Kenya are to articulate and device monetary

strategies that are aimed at achieving and sustaining high efficiency on commercial banks and the other being to maintain a market-based financial system that is sound and stable.

The implications of the policy tools for instance interest rates that are short term in nature, on the goal determinants are secondary to the main agenda. Monetary regulations that have been put in place have an instant impact on financial markets that involve capital markets such as markets for corporate bonds and stocks (Mishkin, 2000). Whether alterations in tools that are used to regulate monetary systems have an effect on financial institutions is subject to debate. Through its monetary system regulations the Government of Kenya has the ability to control inflation levels that are reported in the country.

1.1.1 Monetary Policy Instruments

Monetary policy instruments refer to measures put in place to control the supply and the importance attached to money in any economy. It is a method of controlling the operation of credit amenities as a way of ensuring operational efficiency in the banking sector and economic development of a state (Chowdhury, Hoffman & Schabert, 2003). In other words, monetary policies refer to the operations of the Central Bank to control the flow of money which could be through regulations such as open market activities, interest rate charged, minimum reserve deposits and regulation of credit systems (Loayza & Schmidt-hebbel, 2002). There are limits on the ability of domestic regulations used to control monetary systems to expand real demand in the face of the need for changes in the real equilibrium of the economy. Monetary policy decision making has mostly focused on setting a target for the rate of interest that are short term in nature.

The main target variables for monetary policy instruments are inflation and output. However, the CBK doesn't have the ability to influence its determinants for policy instruments, it pays a part in their formulation indirectly through reserve deposits that is the minimum

requirement for deposits placed with the central bank and the interest rate charged on deposits. Majority of the hypothesis however considered the regulations as methods of making the best choice on associated channels of currency distribution. For instance, if the discount rate is the tool that has been chosen, then it is almost impossible to describe how the associated currency distribution can be established or put in the other way round, if the currency distribution is the tool, it is not described how the discount rate can be established (Mukunzi, 2004).

When it comes to some of the instruments use to regulate monetary systems such as deposits that have to be placed with a central bank and involvement in foreign currency markets, foreign exchange markets are supposed to have an effect on reserve requirements and liquid cash available in an economy. Policy instruments such as changes in the central bank interest rates are only meant to change the interest rates charged by the bank but not the liquid cash held by the bank (CBK, 2015).

Monetary policy instruments affect economy in two ways such as in short run or in long run. Not only policies but also decisions are supposed to guide the bank's rates of lending ensure that the level of credit demand and money growth are steady as per elasticity of supply (Loayza & Schmidt,2013) Low inflation (usually targeted), protecting the value of currency, attaining full employment and achieving sustainable economic output (economic growth) are among the major goals that central bank focuses to achieve. High co-ordination among monetary and other economic policies of the county are majorly achieved through monetary policy (Bergo, 2002).

Most emerging market central banks (CBs) have a long history of operating in a context of surplus reserve balances. CB balance sheets in these markets have commonly been 'asset driven' whereby the CB takes on certain assets in particular, foreign exchange (FX) reserves,

lending to government, or in some cases lender of last resort (LOLR) assists feeble banks whether to serve policy instruments goals or for lack of choice (Zhang, 2011). Doing so generates reserve balances in the accounts of commercial banks which exceed the demand for their use. Since excess reserve balances will tend to depress short-term interest rates (and/or lead to exchange rate pressures), many CBs undertake sterilization operations to minimize adverse consequences.

This may involve increasing monetary policy instruments like reserve requirements, paying interest on excess reserves, using instruments such as term deposits, reverse repo (or FX swaps), or the issuance of CB 91- day Treasury Bills. As a monetary policy instrument, a 91-day Treasury bill is often used to mop up the excess liquidity in the economy in the interest of stabilizing prices and inflation by the CBs. REPO rate is another key monetary tool that the CBK would utilize to influence inflation and output. It sets a benchmark to the lending rates by the commercial banks such that commercial banks would charge on credit some points over and above the REPO rate relatively (Limam, 2010).

Monetary instruments distressing operating targets classified broadly as direct or indirect. Direct instruments operate according to the guidelines that are granted to the central bank. The guidelines directly affect not only the interest rate but also the credit volume. Direct instruments of monetary policy are: Interest Rate, Direct Credit Control, Moral Suasion, Prudential Guidelines and Exchange Rate (CBK, 2015). Indirect instruments are also known market-based instruments, since their use has an effect on the market value of bank reserves as the central bank gets involved in transactions with both non-financial and financial institutions.

There are mainly three indirect instruments namely; Open-market operations, Central bank lending policies and reserve requirements. These instruments are used to not only to inject

but also absorb bank obligations and central bank auctions of central bank credit (Gitonga, 2010). The central bank works at maintaining efficiency in banks through controlling money supply. In this regard, monetary policy instruments stabilize the economy by influencing banking efficiency in a number of channels. Such channels include the direct foreign exchange rate channel to inflation and Real interest rate channel to aggregate demand. Also among the most used channels are not only the Exchange rate channel to aggregate demand but also the demand channel to inflation and the expectations channel to inflation (Ajayi & Atanda, 2012). This study will focus on cash reserve ratio, central bank rate (REPO), 91-day treasury bills and foreign exchange rate – US dollar.

1.1.2 Commercial Bank Efficiency

Efficiency is key concept in the banking industry and not any new according to (Cinca, 2002). Efficiency measurement is among the aspects of banks' performance. Bank efficiency can be measured with respect to output maximization, cost minimization or profit maximization. In general bank efficiency is important to banks themselves as it has direct relationship with profitability (present and future) in terms of solvency. Also regulatory authorities demand the same from banks in provision of cost effective financial products. The numerous stake holders' interests in a bank must be satisfied. Stakeholder theory suggests that the purpose of a business is to maximize stakeholders' wealth.

In order to sustain and succeed over time, stakeholders must have customer interests, suppliers, employees, communities and shareholders aligned and going in the same direction. Analytical argument links management by stake holder to the success of an organization. Analytical argument literature builds up on the reputable notions of principal-agent relations (Jensen & Meckling, 1976) and the firm as a node between contracts (Williamson & Winter, 1991).

According to Limam (2010), the question as to whether a bank is functioning at the lowest point in its long-run average cost curve is answered by scale efficiency. To measure scope efficiency, the difference between the cost of joint production and the sum of producing the different outputs individually is evaluated. Cost efficiency refers to how close a bank's actual cost is to the cost of a best-practice bank having similar products. At times, managers may utilize inputs in a scale higher than a best-practice firm (technical inefficiency) would use which results to a rise in cost efficiency.

Additionally, cost efficiency may rise when an input mix fails in minimizing cost for a particular input vector (allocative inefficiency) (Berger, 2000). Stiroh and Rumbie (2006) argue that inefficiency arises since neither firms nor individuals work hard, or effectively gather information as they should. Berger (1993) defines efficiency as the proportion of the lowest costs that could have been consumed to yield given output bundles to the real costs used. It is critical to note that it varies between 0 and 100 percent. X-efficiency stems from technical efficiency. Nyahan (1998) defines technical efficiency measures as a way of using minimum inputs to produce a given level of output (output orientation). Importantly, it gives the maximum output which can be achieved for a specified amount of input, or minimum cost for a specific output level and input prices (Limama, 2001). In this study, efficiency will be measured using operating costs/total operating income.

1.1.3 Relationship between Monetary Policy and Bank Efficiency

Monetary policy forms part of the macroeconomic environment that is very critical in enhancing the financial efficiency of organizations (Ilona, 2007). The financial development of any economy largely depends on the short-run stabilization of the monetary policy of any economy. Financial efficiency therefore plays a very significant role in the implementation of monetary policy.

There is a very high degree of interdependence between monetary policy implementation and the financial efficiency commercial banks in an economy. The main reason behind this interdependence results from the fact that commercial banks are the main agents of monetary policy implementation within any economy. The efficiency of monetary policy will therefore depend entirely on the level of financial efficiency within the banking industry (Krause & Rioja, 2006). According to Caruana (2005), monetary policy stability is very essential for financial efficiency of organizations in an economy and this also leads to stable asset prices. He further asserts that stability in monetary policy simply implies that it is expected that bank efficiency is realized. The monetary stability enables organizations to achieve high levels of financial efficiency because of the stable prices. However, Caruana (2005) further argues that having stability in monetary policy is not a guarantee that there will be no financial stress in the economy. He indicates that there are incidents when some developments in the financial sector may lead to financial stress and subsequent poor financial efficiency.

1.1.4 Monetary policy and Commercial Banks in Kenya

Commercial banks as financial intermediary institutions use deposits to give credit amongst other financial services. In Kenya, the banking sector plays a dominant role in the financial sector, particularly with respect to mobilization of savings and provision of credit (Thuku, 2015). In 31st December 2015, the banking segment comprising of the Central Bank of Kenya which acts as the regulatory body, 43 banking organizations where 42 are commercial banks and 1 mortgage finance company -MFC). Seven are representative agencies of foreign banks, nine Microfinance Banks (MFBs), two credit reference bureaus (CRBs) and 101 forex bureaus. Out of the 44 banking institutions, 30 locally possessed banks comprise 3 with unrestricted shareholding and 27 privately owned while 14 are foreign. The foreign owned financial establishments comprise of 10 locally assimilated foreign banks and 4 branches of foreign incorporated banks (Mwangi, 2015).

Most Kenyan banks have fully owned subsidiaries spread out in various countries within the region. For instance between the year 2002 to 2012, the banking sector in Kenya registered very significant growth patterns that saw most of the banks increase their deposits, profit before taxation net advances to customers and the number of accounts (Ndungu, 2013). The banking industry in Kenya is regulated by the Central Bank which is given the legal authority of formulating and implementing monetary and fiscal policies. The Central bank of Kenya is the lender of last resort in Kenya and the banking unit to all banks in operation in the country. The Central Bank of Kenya performs a number of main duties to ensure not only the efficient operation of the country's financial system but also liquidity in the county. Also, the Central Bank maintains the solvency of the Kenya shilling (CBK, 2015).

1.2 Research Problem

The most complex issue facing central banks across the globe is identifying the appropriate level and firm of intervention in the banking sector through monetary policies. The extent of regulatory intervention may also determine whether banking industry can develop to its full potential or not. Items in commercial banks, balance sheet are influenced through the use of direct monetary policies (Were, 2015). For instance, central bank sets the interest and allocates credits in the economy according to the economic objectives and plans of the Government. On this regard, commercial banks adopt the indicated monetary policies issued by the central bank. The policies involve targeting monetary aggregates to monitoring and manipulating policy rates to direct the interbank rate in the desired direction which in turn determines the direction of other market rates. In the event that the indicative policies are contractionary depending on the needs of the economy, commercial banks then would shy off from instituting measures that are unfavorable with their portfolio at risk hence resulting to inefficiency in their operations. Ultimately, any inefficiency must be funded by higher charges passed on to the banking community as cost arising from stringent regulation. The more

sophisticated the monetary policy, the greater its efficiency and the vice versa is true (Nibeza, 2015).

Monetary policy has the potential to trigger or inhibit investment activities through provision of affordable credit facilities. The type of monetary policy that any given country adopts is a major determinant on the financial operations of most financial institutions operating in that economy (Limam, 2010). Keynesian theory (1937) is of the view that monetary policy has a critical part in influencing economic activity and the banking efficiency. It contends that variations in money supply can enduringly change variables including interest rates and aggregate demand. Additionally, the supply of money can also change both the employment level and also output and income. Fontuba (2011) echoed that monetary policy had an inseparable outcome on money supply and exchange rate and it birthed the execution of policy ingenuities. As such, it has sustained economic Studies on monetary policy and bank operations indicate different results on the existing relationship, some showing a negative effect while others a positive one. For instance Ajayi and Atanda (2012) carried out a study on monetary policy and bank efficiency in Nigeria and confirmed that bank rate, inflation rate and exchange rate are total credit enhancers, while cash reserves and liquidity ratio have a negative effect on the total credit and efficiency of the banks.

Commercial banks are usually considered around the globe as the most appropriate channels of implementing monetary policy by most Central Banks in many countries (Nibeza, 2011). This leaves the commercial banks in a vulnerable situation that is likely to affect their financial efficiency due to changes occurring in the macroeconomic environment. Kenya has experienced unstable macro environment in the last few years which led to changes in monetary policy (CBK, 2015). These changes in monetary policy forced most of the

commercial banks to shift the effects to their customers. Shifting these changes to customers may have an impact on the financial efficiency of the banks.

Locally, Ongore and Kusa (2013) carried out a study on financial efficiency essentials of commercial banks in Kenya and discovered that it is mainly affected by not only capital adequacy and asset quality but also management efficiency and liquidity management. However, this study only focused on internal bank factors. Ngendo (2012) also conducted a research on the connection amid non-interest income and commercial efficiency of Kenyan commercial banks. The study revealed that non-interest income has fractional significant optimistic impact on financial presentation. Ajayi (2012) asserts that financial policy instruments remain ineffective towards stimulating credit. On the other hand, banks overall credit is extra reactive to cash backup system which is in line with loanable funds theory of (1968) both savings and investments are liable in determining interest rates in the long run. Gitonga (2010) studied the correlation between interest rate threat administration and productivity of commercial banks in Kenya. However, none of these studies addressed the effects of monetary policy instruments on efficiency of commercial banks in Kenya. Therefore, this study seeks fill this openings by answering the query; what is the effect of Central Bank monetary policy instruments on efficiency of commercial banks in Kenya?

1.3 Research Objectives

The objective of this research is to establish the effects of central bank monetary policy instruments on efficiency of commercial banks in Kenya.

1.4 Value of the Study

The results of this study aims at benefitting board of directors of commercial banks in determining the appropriate measures and liquidity level to be maintained in regard to the monetary policies issued at any particular point in time. This is to help banks to toiler their

strategies towards attaining efficiency given that these monetary policy tools usually have a direct effect on commercial bank operational efficiency and performance. This for instance assists to determine the interest rates that banks charge on their client upon issuance of central bank indicative lending rate.

To the investors, this study helps to highlight very crucial connection between monetary policy instruments issued and the overall economic return on undertaken investment projects. This is due to the fact that, monetary policy instruments such as interest rates would determine the cost of funds the commercial banks will charge. This has a direct impact on the availability of funds that are supposed to fund the investments. Consequently, the returns on those investments have to incorporate the cost of funds. This might encourage or discourage investment and affect the growth of the economy.

Academicians also benefit from this study. The study gives insights of the commercial banks in Kenya and how the monetary policy tools affect their efficiency. In this regard, they add knowledge about the effects of monetary policy instruments and their spiral effects on the banking sector efficiency.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter of the study reflects on related literature review as well as its analysis in line with the objective of the research. Crucial concerns and real complications regarding the topic of study are brought out and analytically examined in order to ascertain the present facts. The literature review section will be essential because it determines the information that relates to the present research to the past studies as well as what upcoming researchers will need to explore in order to advance knowledge. This chapter covers contributions from other scholars

on impacts of monetary policy instrument on commercial bank efficiency here in Kenya. The chapter is structured into theoretical review, empirical review, Central Bank Monetary Policy Instruments affecting Bank efficiency, experimental studies and a summary of the literature analysis.

2.2 Theoretical Review

The research study will base its arguments on the Keynesian theory, Quantity Theory of Money, Modern Monetary theory and loanable funds theory.

2.2.1 Keynesians Theory

This theory was postulated by Keynes (1937) and it states that certain microeconomic actions when undertaken collectively by individuals may lead to undesirable aggregate microeconomic outcomes. In this case, the economy is compelled to operate below its potential whereby the output cannot achieve a specific growth rate. As a result, a large number of the Keynesians propose for the adoption of active stabilization policy that helps in reducing the amplitude of businesses cycles, which they regard as one major economic problem to any economy (Canova & Pappa, 2011). According to Keynes, the answer to the Great Depression was supposed to be stimulation of the economy by encouraging individuals to invest through a blend of tactics like through the reduction of interest rates and state investment in development projects. By investing, the government introduces income, which causes people to spend more in the general economy. This ultimately stimulates an increase in production that still involves more income and spending as well (Burgess, 1993).

In this theory therefore, monetary policy plays a critical part in influencing economic undertakings and banking efficiency. The theory by Keynes asserts that an adjustment in the supply of money can as well interfere with microeconomic variables such as output, income, interest rates and aggregate demand for goods and services (Bibow, 2000). Keynes advocated

for the adoption of cheap monetary policy in case of unemployment. Therefore, when the supply of money is increased in an economy, there is a direct effect on the interest rates which tends to reduce. A reduction of the interest rates will stimulate investment due to capital's marginal efficiency. This will in turn increase income, employment rates and output due to the multiplier effect. According to Keynes, the rate of interest is coined by the demand for and supply of money which consequently leads to change in interest rates (Aziza, 2010).

According to Aziza (2010), the original incentive starts a flow of events, whose entire escalation in monetary activity is a manifold of the first investment. A major conclusion of the Keynesian theory is that under certain circumstances, no specific mechanism leads to the acquirement of full employment as well as an increase in total output. Previous economics concentrated on the specific case of complete utilization while Keynes saw it as a common theory where the utilization of resources could either be high or low depending in the supply of money. Financial strategy diffusion through the interest ratio channel is founded on the outdated Keynesian understanding of the role of money for actual interest rate movements. An alteration in interest rates impacts a firm's investment expenditure, consumer expenditure on accommodation and individual consumption of resilient products. A challenging remark from Mishkin (1995) is that the rate of interest cannot be recognized as quantitatively significant cost-of-capital variable for combined expenditure. The inadequacies in the old-fashioned interest rate channel are clarified with monetary marketplace limitations and the credit understanding of the spread instrument as Bernanke and Gertler (1995) points out.

2.2.2 Quantity Theory of Money

Quantity theory of money is among the initial remaining monetary policies. It states that variations in the inclusive general price level are mainly brought about by variations in the amount of currency in circulation. The quantity theory of money shaped the dominant

principal of nineteenth century classical economic analysis. This was meant to preserve the gold standard based on the intellectual foundation of orthodox policy prescription. According to Hume (2000), this is the first dynamic economic sector that alters not only comparative price but also quantity in the process.

Mishkin argued that this disequilibrium impacts temporary and insignificant in the long term equilibrium analysis. Empirical studies of the quantity theory of money (QTM) have focused directly on the association between the exchange rate of currency rate and inflation. In financial economics, the theory ascertains that money supply has a straight, proportional relationship with the price levels. Keynesian economics challenged this theory where it updated and revived the monetary school of economics. While conventional economists approve some truth in the quantity theory, there is still incongruity regarding its applicability in the short run. Economists criticize the theory arguing that money supply is not steady and, in the short-run, prices fluctuate

Additionally, regardless of its empathy with monetarism in the West, the theory has been an established doctrine of the Marxist financial authority. Quantity approach embraced is classical and transactions-based not the modern (Bergo, 2002). The situation can be applied assuming constancy of velocity of monetary circulation and the real output levels, the government could then automatically supply the appropriate amount of money to the economy to simplify transactions and maintain constancy in the price levels. Therefore, currency is endogenous and passive, driven by socialist planning as Canova and Pappa (2011) points out.

In a communist nation, the subject of money is affected by both economic as well as political factors, principally when the state is accountable for the larger share in determining the purchasing might, payment of wages to the public employees, agricultural procurements and

the sponsoring of state development projects (Alexander, Aliño & Enoch, 1996). The state may want to coerce it which is a distribution with its own logic and it is not possible to compromise it fully to result to macroeconomic stability as Alexander, Aliño and Enoch (1996) ascertains.

2.2.3 Modern Monetary Theory

This theory was put across by Eric and Randall in (1995) holds a totally diverse view. The theorists are for the idea that when the Central Bank procures securities in open market, not only do motion substitution effects arise but also wealth effects. This is true because the public portfolio comprises of a variety of assets including mortgages and shares. These later increase aggregate demand for money and increase output. Among the major contributions of MMT theory is that monetarily independent states possess a policy space that is unfettered by financial limitations (Bernanke & Gertler, 1995).

Modern monetary Theory provides policy intuitions regarding financial stability, price stability, and full employment. As expected, several authors have been quite critical of MMT. Every single transaction in the world economy affects financial statements of those involved (Adegbite & Alabi, 2013). A typical example used by the developers of the theory is a framework used in conventional economics known as loanable funds market (Bergo, 2002).

The theory is connected to fiscal economics which is fundamentally concerned with the role of money in the economy. The theory focuses on the expansion of financial model and policy, and it is applied in manipulating the economic activities and currency in exchange. Financial rule shakes all sectors of the economy including both inflation and interest rate and also employment. Additionally, fiscal economics study the behavior of monetary institutions like banks which are substantial in defining the speed of progression and expansion in the economy (Vijaya, Ramachandran, Manju & Shah, 1994).

2.2.4 Loanable Funds Theory

According to Wicksell (1968), the rate of interest is determined on the base of demand and supply of loanable funds available in the capital market. It promotes both savings and investments as the cause of interest rates in the long run while short-term rates of interest are developed on the based on monetary conditions dominant in the economy (Zhao, 2001). Calculation of the rates of interest as per loanable funds theory relies on the obtainability of loan amounts. The obtainability depends on factors such as the net growth in deposit of currency, the volume of savings made, preparedness to improve cash balances and chances for the creation of additional capitals (Bibow, 2000).

According to Zhang (2001), an upsurge in loanable funds supply births a drop in interest rates. A change in not only the demand but also the supply of the loanable funds varies, the subsequent rate of interest depends on the level and direction of movement of both demand and supply of loanable funds (Bernake, 2000).

2.3 Central Bank Monetary Policy Instruments affecting Bank efficiency

There is interdependence between central bank monetary policy instruments implementation and the financial efficiency commercial banks. This section covers the relationship between the central bank monetary policy instruments (Central Bank Cash Reserve Ratio, Central Bank Rate, Treasury Bill Rate and Foreign Exchange Rate) as well as efficiency of commercial banks.

2.3.1 Central Bank Cash Reserve Ratio

The role of minimum reserve necessities has changed considerably. The intersection of changing drives and practices has resulted to a vague picture of what the present purpose of reserve necessities are, and this necessarily obscures pondering of the perfect structure of a reserve government (Gray, 2011). The cash reserve obligation is arrived at by the

multiplication of average liabilities deposits for the prior maintenance period by the reserve ratio (Gregory 2011).

Minimum reserves must be held with the national central bank for each bank. For instance here in Kenya, a banking institution has an obligation maintain minimum reserves in Kenya's Central Bank. Settlement accounts reserve holdings may be utilized for intraday settlement (Simon, 2014).

2.3.2 Central Bank Rate (REPO rate)

According to Richhild and William (2013), central bank has voiced concerns about impairing financial market functioning by providing forecasts of future policy rates. In a case where a bank experiences a shortage of funds it can acquire funds from central bank through borrowing. Banks can easily access funds if the REPO rates are reduced and vice versa (Ndung'u, 2013). To enlarge money supply on a temporary basis, the central bank brings down repo rates allowing banks the opportunity to exchange their government securities for cash. On the other hand, to contract the money supply repo rates are increased (Wanjohi, 2015).

Equivalently, central bank chooses a preferred money supply level but then allows the market to determine the appropriate repo rate. A rise in reverse repo rate prompts banks to retain more funds with the Central Bank to receive greater returns on its extra cash. It is also a tool used by the central bank to gutter excess liquidity (money) out of the banking system (Robert, 2009).

2.3.3 91-day Treasury Bill Rate

The 91-Day Treasury Bills is a debt obligation that the central bank issues as a monetary policy instrument on behalf of the Governments. This is usually in a period of three months at either a discount or face value on a competitive auction done weekly. The dissimilarity amid

the discounted price and the face value defines interest earned as Kiptui, Ndolo and Kaminchia (2005) points out. Lenders practice the 3-month average rate, to regulate interest rates on loans and commercial bonds as economic conditions vary. When the rate raises, interest rates on any corporate bond associated to it escalates (Mishkin, 2000). Treasury bills are low risk investments with the hugest risk being theft of the original certificate (Jalil, 2011).

2.3.4 Foreign Exchange Rate--US dollar

Forex markets have been used by central banks as a monetary tool to achieve efficacy in the banking. Previously, a large number of small open economies including Kenya, have had the US dollar as their nominal anchor in their exchange rate. This has been in the aim of reducing and stabilizing efficiency in banks and/or fostering international regional integration (Robert, 2013).

The downfall of the Bretton Woods system in 1970s signified the end of the United States dollar's official part as a central currency in the global exchange rate to bring efficiency in the banking sector. However, numerous small open economies have then preferred maintaining exchange rate link to US dollar as the reserve currency (Brian, 1999). The role of other currencies including the British pound as commentator currencies disappeared towards the end of the 1970s. On the other hand, the euro's role has become comparatively substantial. However, it is mainly limited to countries with close institutional and jurisdictional ties with the Euro region. In the situation of currency crises of 1990's affecting emergent and developing countries, numerous systemically vital economies in not only America but also Asia have commenced increasing the elasticity of their exchange rate in order to stabilize output and deal with unstable capital movements (Bracke & Bunda, 2011).

2.4 Empirical Studies

Various studies have been conducted on earnings management and stock market returns. Fontuba (2011) conducted research on the impact of Monetarist Policy on Rwanda's Economy focused on the analysis of Vector Error Correction Model for the period 1980-2006 targeting to examine the impact of monetary policy on macroeconomic variable in Rwanda. The researcher analyzed how independent variables of Monetary Policy such as Money Supply (M2) and Exchange Rate (EXCH) affect dependent variable, Gross Domestic Product (GDP). The data analysis was done using Eviews 7 software. The tests revealed that there is cointegration among variables: Monetary rule had a substantial consequence on exchange rates and money supply and witnessed the application of various policy initiatives. As a result, it has experienced sustained economic improvement over the years under consideration.

Nwannebuike (2015) examined the effect of monetary rule instruments on productivity of commercial banks in Nigeria using the Zenith Bank Plc experience. The paper used descriptive research design. It utilized time series data collected from published financial statements of Zenith Bank Plc as well as Central Bank of Nigeria Bulletin from 2005 to 2012. Pearson Product moment correlation technique was used to analyze the data collected while t-test statistic was employed in testing the hypotheses. The paper concluded that a good number of monetary policy instruments do not impact significantly on productivity of commercial banks in Nigeria (Gambacorta and Lannoti 2005)

2.5 Conceptual Framework

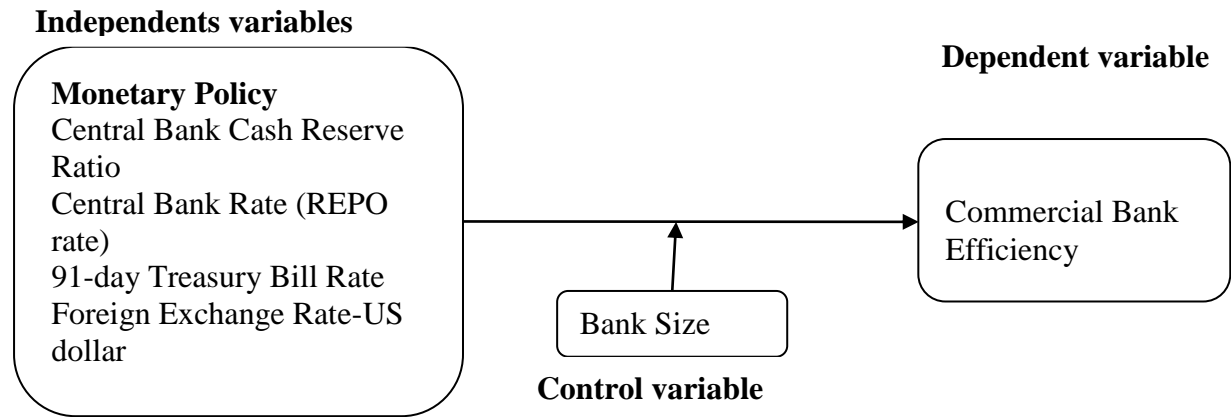


Figure 1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter analyzes the methods used in data collection to answer the research questions. Section 3.2 presents research design, 3.3 presents the population of the study, 3.4 presents data collection and finally section 3.5 presents data analysis.

3.2 Research Design

The study used descriptive research design. The design concentrated on determining the regularity with which occurrences happen or the connection amid variables (Bryman & Bell, 2011). Descriptive survey research design choice was made based on the point that the study was concerned on the state of affairs existence in the field and no variable was manipulated. This method was suitable for this study, as the study collected comprehensive information through descriptions which was helpful for identifying variables.

Bryman and Bell (2011) assert that a descriptive design pursues getting information describing prevailing spectacles by questioning individual discernments and attitudes. Descriptive design also allows gathering large data from a sizable population economically.

3.3 Population

According to Pole and Lampard (2002), population refers to all the members of a particular group which investigation is connected. Accessible population is defined in terms of elements within the reach of the study present in the target population. Cooper and Schindler (2003) define an entire group of interest to the researcher as target population.

The population of the study encompassed 42 commercial banks as at 31st December 2015. There was no sampling since the population was not too large i.e. the study took a census

approach where data is mined from all members of the population (Hair, Celsi, Money, Samouel, & Page, 2011).

3.4 Data Collection

Regarding the data collection, the research obtained absolute secondary data. The secondary data was gathered from not only from annual reports but also financial statements of the banks at the CBK and also from the Kenya National Bureau of Statistics (KNBS) for the period January 2011 to December 2015.

A data collection form was designed to record data on the monetary policy instruments (91-day Treasury bill rate, US dollar, Central Bank Cash Reserve Ratio, REPO rate) and also on total assets, Loans, Equity, Annual GDP growth rate, Consumer Price Index, Weighted Bank Lending Interest Rate, total employee cost, Total Deposits, Interest Income, Other Operating Costs, Total loans, investments in securities and Interest Expenses.

3.5 Data Analysis

To determine the relationship the effect of central bank monetary instruments and efficiency on Kenya's commercial banks, regression and correlation analysis was undertaken. Regression analysis measures the pattern of the association and its closeness in absolute terms. This was achieved with the help of SPSS version 21.

3.5.1 Determination of Efficiency Measure, Variable Y

Analysis of the bank efficiency was measured using Data Envelopment Analysis. DEA is a valuable non-parametric and mathematical programming methodology for conning the efficient frontier. It relies on the particular input and output variables (Johnes, 2009). The efficiency is computed by dividing output over input. This study adopted the inputs and outputs adopted in a previous study by Hancock (2015) in a study on Bank Efficiency derived from the profit

function. The inputs for this study included Labor (LAB) which is represented by the total employee cost; Total Deposits (TD); Interest Expense (IE) and Other Operating Costs (OOC). On the other hand, the outputs included Direct Credit Facilitation (DCF) comprising of Total loans which encompasses not only loans and overdrafts but also Other Earning Assets (OEA) representing majorly investments in securities and also Interest Income (II).

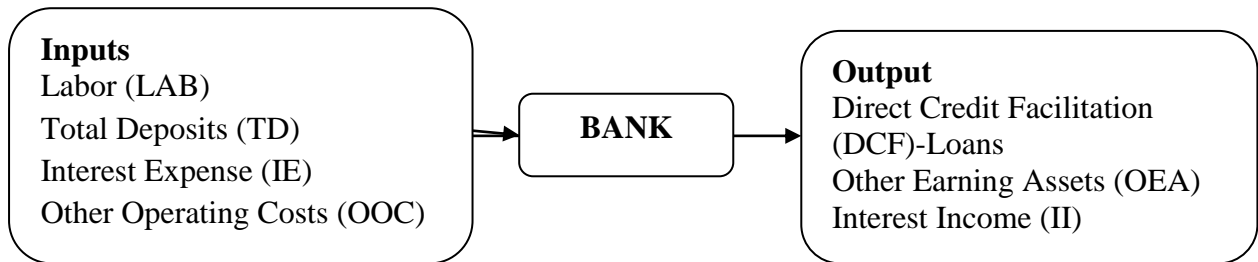


Figure 2: Intermediation DEA Model

Source: Hancock (2015)

The bank efficiency was computed as a ratio of inputs to output using the categorical DEA model developed by Basso and Funari (2003). The major pluses of DEA include the fact that it incorporates manifold inputs and outputs and, to compute technical efficiency, only necessitates info on output and input quantities (not prices) (Banker, 1993). In this regard, it is suitable for examining the efficiency of banks since it may not be possible to assign prices to social returns. The second advantage is that likely cradles of inefficiency can be coined. Importantly, efficiency levels can be determined. DEA decomposes economic inefficiency to both technical and allocative inefficiency (Basso and Funari, 2003).

3.5.2 Analytical Model

To examine the relationship between efficiency and predictive variables, ordinary least squares regression was used. The regression equation was expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \alpha$$

Where: **Y** is Bank efficiency (measured using DEA) – Dependent variable

β_0 is the regression coefficient/constant/Y-intercept,

$\beta_1, \beta_2, \beta_3 \dots \beta_4$ are the slopes of the regression equation,

X_1 is 91-day Treasury bill rate - monetary policy instrument (independent variable)

X_2 is Foreign exchange rate (US dollar)-monetary policy instrument (independent variable)

X_3 is Central Bank Cash Reserve Ratio - monetary policy instrument (independent variable)

X_4 is Central Bank Rate (REPO rate) - monetary policy instrument (independent variable)

α is an error term.

3.5.3 Test of Significance

The model's test of significance was measured on the ability of the regression model to fit the data by making a comparison on explanatory variables that actually explain variations in the dependent variable. Coefficient of determination (R^2), Analysis of variance (ANOVA) and F-statistic were also computed to test whether there was any significant relationship central bank monetary policy instruments and efficiency of Kenyan banks.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

Information processed from data collection in the study on the relationship between central bank monetary policy instruments and efficiency of commercial banks in Kenya is presented in this chapter.

4.2 Descriptive Statistics

This section focus on the general description of the study variables characteristics including the minimum (Min), maximum (Max), Mean, standard deviation (Std. Dev), Skewness and Kurtosis.

Table 4.1: Descriptive Statistics

	Min	Max	Mean	Std. Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Foreign exchange rate	-0.4857	7.40	3.018	6.346	5.891	.357	36.868	.702
91-day Treasury bill rate	5.22	8.69	7.08	0.92	-0.16	0.21	-0.90	0.42
Central Bank cash reserve	0.23	21.62	3.44	2.75	3.64	0.21	19.25	0.42

ratio								
Bank efficiency	0.30	1	0.52	0.09	-0.85	0.21	-4.40	0.42

Source: Research Findings

The results in Table 4.1 showed that Foreign exchange rate had a mean score of 3.018, 91-day Treasury bill rate had a mean score of 7.08, and Central Bank cash reserve ratio had a mean score of 3.44 while Bank efficiency had a mean score of 0.52. Analysis of skewness shows that foreign exchange rate and Central Bank cash reserve ratio are asymmetrical to the right around their mean while bank efficiency and 91-day Treasury bill rate are skewed to the left.

4.3 Inferential Statistics

The study conducted a Pearson’s product moment correlation analysis and a multiple regression analysis to establish the relationship between the study variables.

4.3.1 Correlation Analysis

Pearson’s correlations analysis was conducted at 95% confidence interval and 5% confidence level 2-tailed. The table above indicates the correlation matrix between the macroeconomic variables (91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate)) and bank efficiency.

Table 4.2: Correlation Matrix

		Bank efficiency	91-day Treasury bill	Foreign	Central	Central Bank Rate
Bank efficiency	Pearson Correlation	1				
	Sig. (2-tailed)	.				
91-day Treasury bill rate	Pearson Correlation	.638	1			
	Sig. (2-tailed)	.029	.			
Foreign exchange rate	Pearson Correlation	.764	.523	1		
	Sig. (2-tailed)	.017	.016	.		
Central Bank cash reserve ratio	Pearson Correlation	.622	.743	.597	1	
	Sig. (2-tailed)	.031	.012	.028	.	
Central Bank Rate (REPO rate)	Pearson Correlation	.529	.533	.720	.531	1
	Sig. (2-tailed)	.047	.009	.002	.014	.

Source: Research Findings

According to the table, there is a positive relationship between bank efficiency and 91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate) of magnitude 0.638, 0.764, 0.622 and 0.529 respectively. The positive relationship indicates that there is a correlation between the factors and the bank efficiency. This infers that foreign exchange rate has the highest effect on bank efficiency, followed by

91-day Treasury bill rate, then Central Bank cash reserve ratio while Central Bank Rate (REPO rate) having the lowest effect on the bank efficiency.

4.3.2 Regression Analysis

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (bank efficiency) that is explained by all the four independent variables (91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate)).

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.848	0.709	0.694	0.194

Source: Research Findings

The four independent variables that were studied explain 70.9% of the bank efficiency as represented by the adjusted R^2 . This therefore means the four variables contribute to 70.9% of bank efficiency, while other factors not studied in this research contributes 29.1% of bank efficiency. Therefore, further research should be conducted to investigate the other (29.1%) factors influencing efficiency of commercial banks in Kenya.

Table 4.4: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.763	4.642	.000	1.621	0.022
	91-day Treasury bill rate	0.351	0.324	0.157	0.833	0.021
	Foreign exchange rate	0.118	0.360	0.010	0.253	0.027
	Central Bank cash reserve ratio	0.102	0.041	0.330	1.920	0.015
	Central Bank Rate (REPO rate)	0.125	0.383	0.011	0.269	0.029

Source: Research Findings

The coefficient of regression in table 4.4 above was used in coming up with the model below:

$$Y = 9.763 + 0.118TB + 0.351 FER + 0.102CRR + 0.125 REPO$$

Where TB is the 91-day Treasury bill rate, CRR is Central Bank cash reserve ratio, FER is foreign exchange rate and REPO is the Central Bank Rate (REPO rate). From the model,

taking all factors (91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate)) constant at zero, bank efficiency was 9.763. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in 91-day Treasury bill rate will lead to a 0.118 increase in bank efficiency; a unit increase in Foreign exchange rate lead to a 0.351 increase in bank efficiency; a unit increase in Central Bank cash reserve ratio will lead to a 0.102 increase in bank efficiency. According to the model, all the variables were significant as their P- value was less than 0.05. All the variables were positively correlated with bank efficiency.

4.3.3 ANOVA

ANOVA statistics were also computed to establish the fitness of the model in predicting the relationship between the study variables.

Table 4.5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.457	4	1.364	32.057	0.063
	Residual	2.341	55	0.043		
	Total	7.797	590			

Source: Research Findings

From the ANOVA statistics in table 4.3, the processed data, which are the population parameters, had a significance level of 0.063 which shows that the data is ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 32.057. Since F calculated is greater than the F critical (value = 5.46), this shows that the

overall model was significant i.e. there is a significant relationship between central bank monetary policy instruments and bank efficiency.

4.4 Interpretation of the Findings

From the above regression model, the study found out that 91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate) had a positive effect on bank efficiency. The study found out that the intercept was 9.763 for all years.

The four independent variables that were studied (91-day Treasury bill rate, foreign exchange rate, Central Bank cash reserve ratio and Central Bank Rate (REPO rate)) explain a substantial 70.9% of efficiency of commercial banks in Kenya as represented by adjusted R^2 (0.684). This therefore means the four variables contribute to 70.9% of bank efficiency, while other factors not studied in this research contributes 29.1% of bank efficiency. This is in agreement with Dietrich and Wanzenried (2011) who stated that firm efficiency can be influenced by factors that can be controlled by the firm, as well as by factors that are not under the control of such firms. Several studies conducted under the same topic by the South African Ncube (2009), Tanzanian Aikaeli (2008), Ikhide (2008) and Adongo, Stork and Hasheela (2005) found positive results in the relationship between micro economic variables and efficiency. However, Casu and Molyneux (2003), Chakrabarti and Chawla (2005) and Kiyota (2009) found no significant relationship between micro economic variables and bank efficiency.

The study also established that the coefficient for 91-day Treasury bill rate was 0.118, meaning that 91-day Treasury bill rate positively and significantly influenced the efficiency of commercial banks in Kenya. This is in line with Agiomirgiannakis et al (2006) who found that 91-day Treasury bill rate is positively related to a firm's ability to produce

technologically complicated products which in turn leads to efficiency. Amato and Amato (2004) also found that the positive association between 91-day Treasury bill rate and efficiency stems from implementing greater differentiation and specialization strategies, and should therefore lead to higher efficiency. Prasetyantoko and Parmono (2008) who re-evaluated earlier findings against new data within an improved analytical framework showed that 91-day Treasury bill rate influences efficiency in some, but not all industries.

The study established that the coefficient for Foreign exchange rate was 0.351, meaning that Foreign exchange rate positively and significantly influenced the efficiency of commercial banks in Kenya. This correlates to Garcia-Herrero et al. (2009) proved that there is a positive impact of capital on company efficiency. Concurrently, Hoffmann, (2011), showed substantial negative impact of capital on company efficiency. Disputing empirical results put forward that greater capital ratio results to lower efficiency.

The study also established that the coefficient for Central Bank cash reserve ratio was 0.102, meaning that Central Bank cash reserve ratio positively and significantly influenced the efficiency of commercial banks in Kenya. This agrees with Bothwell, Cooley and Hall (1984) who indicated that higher Central Bank cash reserve ratioed firms (with relatively high liabilities) are more profitable (Van Horne, 2002. Aivazian et al. (2005) for Canada and Odit and Chittoo (2008) for Mauritius found that Central Bank cash reserve ratio is negatively related to investment.

The study also established that the coefficient for Central Bank Rate (REPO rate) was 0.125, meaning that Central Bank Rate (REPO rate) positively and significantly influenced the efficiency of commercial banks in Kenya. This agrees with Thuo (2014) who said that Central Bank Rate (REPO rate) positively and significantly influenced efficiency of commercial banks in Kenya. Njoroge (2013) who investigated the determinants of efficiency

on savings and credit co-operative societies in Nairobi County also established that Central Bank Rate (REPO rate) positively and significantly influenced efficiency of the SACCOs.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary, conclusion and recommendations of the main findings concerning relationship between central bank monetary policy instruments and efficiency of Kenya's commercial banks.

5.2 Summary

Efficiency of a company or an industry is very essential as it shows the outcomes attained over a certain period. Firm efficiency can be influenced by factors that can be controlled by the firm, as well as by factors that are not under the control of such firms. Controllable factors include everything related to management of inputs and outputs or transforming inputs into outputs. The study sought to establish the relationship between central bank monetary policy instruments and efficiency of Kenya's commercial banks. The research adopted a descriptive research design. The interest population for this research was all the 42 commercial banks in Kenya. Thus it was a census survey. The study applied secondary data which is extracted from the companies' yearly reports and financial statements for a five-year period commencing 2011 up to 2015. The data collected were therefore cleaned, coded and systematically organized in a manner that facilitates analysis using the Statistical Package for Social Sciences (SPSS). In order to test the relationship between the variables the inferential tests including the regression analysis was used. The study found that the four variables contribute to 70.9% of bank efficiency and that a unit acceleration in Foreign exchange rate leads to a 0.118 rise in bank efficiency. From the research results and discussion, the study

concludes that central bank monetary policy instruments impact the efficiency level of Kenya's commercial banks. The conclusion is that central bank monetary policy instruments had a positive and significant impact on efficiency of Kenya's commercial banks for the period of this study. The study recommends that companies listed in NSE should approve approach and significant regulations associated with the management of liquidity risk under both normalized and stressed situations and review these regulations frequently as need arise. Also, it was recommended that a structure should be put in place to effectively execute financial strategies and also develop methods and regulations to explore the size of earmarked liquid properties.

5.3 Conclusions

The study concludes that 91-day Treasury bill rate positively and significantly influence the efficiency of Kenya's commercial banks. This is in regard with Agiomirgiannakis et al (2006) who found that 91-day Treasury bill rate is positively associated with the company's ability to offer technologically complicated goods and services which in turn leads to efficiency. Amato and Amato (2004) also found that the positive association between 91-day Treasury bill rate and efficiency stems from implementing heavy differences and specialized approaches, and should thus result in higher effectiveness.

The study also concludes that foreign exchange rate positively and significantly influence the efficiency of commercial banks in Kenya. This correlates to Garcia-Herrero et al. (2009) indicated a positive effect of capital on company efficiency. Besides, studies of Hoffmann, (2011), revealed a critical negative effect of capital on company efficiency. The contrasting empirical evidence asserts that high financial ratio results in lower efficiency.

The study further concludes that the coefficient for Central Bank cash reserve ratio was 0.102, meaning that Central Bank cash reserve ratio positively and significantly influenced

the efficiency of commercial banks in Kenya. This agrees with Bothwell, Cooley and Hall (1984) who indicated that higher Central Bank cash reserve ratio firms (with relatively high liabilities) are more profitable. Van Horne (2002) also argues that the merit of debt in a corporate taxes world is that paid interest are deducted as an expense. Previous studies revealed that controllers rarely keep accelerating the debt level and that debt can also be used as a protection mechanism in avoiding overinvesting since cash is payable to the bondholders reducing the possibility of accessing wasteful resources and bondholders have a probability to conduct management (Pawlina, 2010).

The study finally concludes that the coefficient for Central Bank Rate (REPO rate) was 0.125, meaning that Central Bank Rate (REPO rate) positively and significantly influenced the efficiency of Kenya's commercial banks. This agrees with Thuo (2014) who said that Central Bank Rate (REPO rate) positively and significantly influenced efficiency of Kenyan commercial financial institutions. Njoroge (2013) who investigated the factors contributing to the effectiveness on savings and credit co-operative societies in Nairobi County also established that Central Bank Rate (REPO rate) positively and significantly influenced efficiency of the firms.

5.4 Recommendations for Policy and Practice

The study also recommends that local researchers and academicians should increasingly study the central bank monetary policy instruments to add on to the limited literature in the area. This will ensure that there will be adequate local literature that can be used to relate to local situation. Foreign studies may not be reliable to explain the case of the effect of central bank monetary policy instruments in Kenya. The study further recommends that there should be a policy set to standardize the presentation of financial statements commercial banks in Kenya. This will make it easier for all the parties interested in using the data from these statements. Further studies can also use primary data to collect data from the commercial

financial institutions in Kenya. The research also suggests that future studies should allocate more time to the data collection process and sponsors step in to support the studies. This will make it possible for researchers to study other determinants affecting the operational efficiency of commercial financial institutions in Kenya that the study did not address.

Finally, the study recommends that financial institutions should relate the central bank monetary policy instruments to their financial reports. This should indicate the appropriate effect of each microeconomic variable. This will make it easier for other researchers to collect and relate data on central bank monetary policy instruments.

5.5 Limitations of the Study

The key limitations of this research with regard to data availability, the data was tedious to collect and compute as it was in its very raw form. Due to lack of standardization of financial statements from various companies listed in NSE, data computation was made even harder. In addition, time and resources allocated to this study could not allow the study to be conducted as deeply as possible in terms of other predictor variables for operational efficiency of commercial banks in Kenya. Finally, the study had a draw back from most financial institutions which lacked proper reports that showed records of the benefits directly accrued from the central bank monetary policy instruments. This posed a challenge on data collection process.

Another challenge is data availability was limited and the uncertain quality of the information used. Data quality is a limitation in the research. It is impossible to conclude from the research whether the outcomes are as a result of natural factors or the quality of the utilized data or whether it is a clear indication of the real scenario. The utilization of the data from different sources such as KNBS is solely dependent on the assumption that the data was collected in an accurate manner.

On the other hand, the study considered the period between 2011 and 2015, a period of 5 years. Within this period many changes occurred in the stock market that the study did not account for such as share splits for some of the companies considered in the study. These unaccounted for issues may have in one way or another affected the outcomes of the study. However, this effect was not expected for the study since the occurrence of such cases is rare and none was recorded within the study period for the firms involved in the study, though one share split was observed in the market for a firm not involved in the research. Therefore, the study was limited to the research factors only.

Another limitation is developing a model which would enable a researcher to research the connection between the various variables. Further, the model may not be reliable due to some shortcoming of the regression models. Due to the shortcomings of regression models, other models can be used to explain the various relationships between the variables. When developing this model, there was a great essence to define the dependent variables and independent variables. If the model is not correct, the process of analysis may not give the right results. In this case, multiple linear regressions was used since there were multiple variables which required to be studied.

5.6 Suggestions for Further Studies

Since the research focused on the impact of central bank monetary policy instruments on bank efficiency of the commercial banks that are mostly listed in NSE, further studies should be done on companies not listed in NSE to find out whether the study will give the same results.

This study was generalized to companies listed in NSE. Therefore, there is a need to narrow down to specific sectors to look at the effect of central bank monetary policy instruments in other sectors, for example manufacturing, agriculture, and construction among others.

The study recommends that further studies can be undertaken to determine the connection between bank efficiency and financial performance of companies listed in the Nairobi Stock Exchange in Kenya. Other studies can also be done on the impact of macroeconomic variables (external variables) and their effect on financial institution's efficiency of companies listed in NSE.

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APPENDICES

Appendix I: List of Commercial Banks in Kenya

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank Kenya
6. CFC Stanbic Holdings
7. Citibank
8. Commercial Bank of Africa
9. Consolidated Bank of Kenya
10. Cooperative Bank of Kenya
11. Credit Bank
12. Development Bank of Kenya
13. Diamond Trust Bank
14. Ecobank Kenya
15. Equatorial Commercial Bank
16. Equity Bank
17. Family Bank
18. Fidelity Commercial Bank Limited
19. Fina Bank
20. First Community Bank
21. Giro Commercial Bank
22. Guaranty Trust Bank Kenya
23. Guardian Bank

24. Gulf African Bank
25. Habib Bank
26. Habib Bank AG Zurich
27. Housing Finance Company of Kenya
28. I&M Bank
29. Imperial Bank Kenya
30. Jamii Bora Bank
31. Kenya Commercial Bank
32. K-Rep Bank
33. Middle East Bank Kenya
34. National Bank of Kenya
35. NIC Bank
36. Oriental Commercial Bank
37. Paramount Universal Bank
38. Prime Bank (Kenya)
39. Standard Chartered Kenya
40. Trans National Bank Kenya
41. United Bank for Africa
42. Victoria Commercial Bank

Source: Central Bank of Kenya (2015)

Appendix II: Secondary Data

91-day Treasury bill rate

YEAR	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	2.46	2.59	2.77	3.26	5.35	8.95	8.99	9.23	11.93	14.80	16.14	18.30
2012	18.34	17.93	17.80	14.87	9.45	10.09	9.87	8.98	7.77	7.98	10.53	8.30
2013	7.45	8.87	9.88	9.32	8.93	6.21	6.34	9.20	9.58	9.56	8.89	9.52
2014	9.07	9.78	8.98	8.64	7.44	9.81	9.76	9.46	8.38	8.88	9.51	8.58
2015	8.65	9.08	8.76	6.53	8.56	9.65	9.51	8.68	9.67	8.76	9.43	10.76

REPO

YEAR	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	-	-	1.66	4.50	5.72	5.73	-	-	-	18.89	-	17.75
2012	7.81	7.78	-	6.78	6.68	17.59	5.73	5.94	8.42	6.23	6.33	6.79
2013	6.43	6.75	9.35	6.84	7.03	7.93	7.19	7.49	7.11	7.44	6.42	9.38
2014	9.21	8.56	6.92	7.98	7.93	6.46	8.65	7.34	8.39	8.90	9.25	8.29
2015	7.75	6.90	6.46	6.67	7.42	7.61	7.41	6.35	6.06	6.03	6.27	7.75

ANNUAL GDP GROWTH RATE

GDP	2011	2012	2013	2014	2015
Jan	5.4	4.2	6.4	6.2	4.9
Feb	5.2	4.3	6.7	6.6	5.2
March	5.5	3.9	5.8	5.5	5.1
April	6.3	5.1	6.1	6.0	5.4
May	5.7	4.8	5.2	4.6	5.3
June	7.7	4.2	6.4	6.1	6.1
July	6.2	5.3	4.6	4.0	5.6
Aug	6.8	3.6	5.1	4.6	5.8
Sep	6.9	3.6	5.1	4.5	6.1
Oct	5.8	4.3	6.6	6.2	6.2
Nov	6.4	4.7	5.4	4.7	5.7
Dec	5.9	4.2	6.1	5.7	5.4

US DOLLAR

Year	Jan	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	80.3	82.4	83.4	83.4	85.7	89.9	91.1	92.8	99.8	99.8	89.7	85.1	81.3
2012	79.5	82.7	80.4	81.7	82.3	84.0	86.6	86.2	84.9	85.2	84.9	85.7	89.5
2013	88.6	86.6	84.8	87.1	88.0	79.7	82.3	80.7	83.2	89.7	87.9	86.6	89.6
2014	90.9	92.2	96.9	92.2	89.3	94.9	87.6	89.6	90.7	92.0	93.9	96.4	100.9
2015	101.5	102.7	101.8	106.3	102.0	103.6	67.5	99.7	101.0	102.1	98.4	99.5	103.5

CONSUMER PRICE INDEX

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	4.70	4.10	3.60	4.20	3.90	4.70	4.50	3.80	5.4	9.60	13.0	5.50
2012	5.50	4.40	5.30	5.00	4.70	5.50	5.50	6.00	5.70	6.00	5.90	5.73
2013	4.70	4.40	4.40	4.30	4.20	3.90	4.20	3.90	4.00	4.00	4.60	4.60
2014	5.70	6.70	7.10	7.70	8.70	9.00	10.4	10.50	10.40	10.5	10.9	8.90
2015	7.40	7.60	7.30	7.10	5.90	5.10	4.10	3.30	3.00	3.40	3.80	4.10

INTEREST EXPENSE AND OTHER COSTS

	2011	2012	2013	2014	2015
Interest Expenses (Ksh '000')	48,762	110,9111	83,793	103,635	145,064
Interest Income (Ksh '000')	142,036	275,414	275,991	317,164	323,064
Other Operating Costs (Ksh '000')	120,882	137,495	152,624	173,917	192,343
Investments in securities (Ksh '000')	13,089	20,023	14,349	15,507	18,204
Total employee cost (Ksh '000')	52,435	59,546	68,820	75,371	81,242

TOTAL ASSETS ('000')-DEPOSITS

	2011	2012	2013	2014	2015
Kenya Commercial (KCB)	164,875,372	172,690,915	282,494,456	304,112,456	323,564,786
Equity Bank Limited	168,223,215	223,024,556	176,911,564	215,829,345	238,345,678
Co-op Bank	123,909,119	142,880,029	167,772,345	199,663,435	229,456,780
Barclays Bank	100,811,750	133,889,997	167,305,897	195,493,564	221,786,786
Standard Chartered Bank Ltd	110,531,373	153,983,533	164,182,123	185,102,345	207,345,412
CFC Stanbic Bank	47,146,767	62,069,592	140,087,545	133,378,346	171,785,785
Commercial Bank of Africa	51,404,408	63,591,642	83,283,234	101,772,987	125,345,345
Diamond Trust Bank Kenya	44,655,313	58,605,823	77,453,345	100,456,678	114,345,234

I & M Bank	18,280,761	60,026,694	76,903,674	94,512,234	113,908
Citibank, N.A.	5,130,103	54,776,432	74,646,897	91,520,312	110,234
NIC Bank Ltd	97,337,054	62,552,113	73,581,675	69,580,654	92,493,033
National Bank(NBK)	23,697,056	107,138,602	68,665	67,155	76,568,930
Bank of Africa	57,628,290	29,325,841	38,734,872	49,105,346	71,242,659
Bank of Baroda (K) Ltd	3,664,948	6,215,384	36,701,671	48,958,346	52,683,299
Chase Bank Limited	6,898,919	32,444,424	36,513,340	46,138,907	52,021,524
Prime Bank Limited	15,358,108	4,530,094	35,185,876	43,463,895	49,460,889
Housing finance	6,777,889	10,478,682	31,972,132	40,686,456	43,500,989
Ecobank Kenya Ltd	3,364,459	19,399,089	27,210,780	34,590,563	43,006,228
Family Bank	4,491,372	8,031,214	26,002,674	31,771,568	36,907,137
Imperial Bank Limited	44,009,222	4,761,853	25,618,533	30,985,875	30,721,440
Bank of India	21,939,617	32,331,505	23,352,678	24,877,908	25,638,049
Consolidated Bank of Kenya	18,331,250	14,112,365	15,318,871	19,071,907	19,639,370
Fina Bank Limited	5,498,595	8,208,537	14,630,564	18,001,780	16,778,631
Equitorial Commercial Bank	490,890	1,723,233	12,927,654	17,150,340	16,053,971
Gulf African Bank	6,914,485	10,233,964	12,915,345	14,109,657	15,580,630
African Banking Corporation	16,919,962	26,699,124	12,507,678	13,562,765	15,562,475
Giro Commercial Bank	13,305,770	20,188,379	11,846,321	13,417,768	13,644,242
Development Bank of Kenya	8,109,411	10,649,758	11,523,978	12,280,765	13,623,296
Fidelity Commercial Bank	12,969,712	21,858,603	10,789,907	11,772,876	13,199,240
K-Rep Bank Ltd	3,100,351	4,419,806	9,319,978	11,745,825	12,834,687
Guardian Bank	15,394,571	19,671,456	8,754,978	10,323,563	12,778,509
First community Bank	51,371,890	10,398,805	8,740,980	9,959,564	11,305,398
Habib AG Zurich	4,461,421	10,348,739	8,722,987	9,702,875	11,009,480
Victoria Comm. Bank Ltd	8,971,669	4,558,349	7,645,986	9,548,342	9,657,868
Transnational Bank Limited	3,052,314	26,892,185	7,287,986	8,801,786	8,078,122
Habib Bank Limited	13,949,400	8,127,135	5,861,778	7,255,987	8,028,877
Credit Bank Ltd	7,339,320	4,018,428	5,394,456	7,014,342	7,308,854
Oriental Comm. Bank	3,141,381	7,670,050	5,030,345	6,407,234	7,010,323
Paramount-Universal Bank	7,136,327	5,425,541	4,727,653	6,220,876	7,006,527
Middle East Bank of Kenya	4,658,793	1,874,268	4,639,890	5,870,8765	5,765,799
UBA BANK	1,596,398	9,594,061	3,206,645	3,480,453	3,709,630
Dubai Bank Limited	7,748,940	6,380,098	2,316,389	2,924,954	2,926,860
Jamii Bora Bank	4,451,626	3,876,876	2,070,879	2,584,987	2,660,000
K-Rep Bank Ltd	164,875,372	172,690,915	282,494,456	304,112,456	323,564,786
Guardian Bank	168,223,215	223,024,556	176,911,564	215,829,345	238,345,678
First community Bank	123,909,119	142,880,029	167,772,345	199,663,435	229,456,780
Habib AG Zurich	100,811,750	133,889,997	167,305,908	195,493,564	221,786,786
Victoria Comm. Bank Ltd	110,531,373	153,983,533	164,182,123	185,102,345	207,345,412
Transnational Bank Limited	47,146,767	62,069,592	140,087,545	133,378,346	171,785,785
Habib Bank Limited	51,404,408	63,591,642	83,283,234	101,772,987	125,345,345
Credit Bank Ltd	44,655,313	58,605,823	77,453,345	100,456,678	114,345,234

Oriental Comm. Bank	18,280,761	60,026,694	76,903,674	94,512,234	113,908
Paramount-Universal Bank	5,130,103	54,776,432	74,646,897	91,520,312	110,234
Middle East Bank of Kenya	97,337,054	62,552,113	73,581,675	69,580,654	92,493,033
UBA BANK	23,697,056	107,138,602	68,665,654	67,155,987	76,568,930
Dubai Bank Limited	57,628,290	29,325,841	38,734,872	49,105,346	71,242,659
Jamii Bora Bank	3,664,948	6,215,384	36,701,671	48,958,346	52,683,299
K-Rep Bank Ltd	6,898,919	32,444,424	36,513,340	46,138,907	52,021,524
Guardian Bank	15,358,108	4,530,094	35,185,876	43,463,895	49,460,889
First community Bank	6,777,889	10,478,682	31,972,132	40,686,456	43,500,989
Habib AG Zurich	3,364,459	19,399,089	27,210,780	34,590,563	43,006,228
Victoria Comm. Bank Ltd	4,491,372	8,031,214	26,002,674	31,771,568	36,907,137
Transnational Bank Limited	44,009,222	4,761,853	25,618,533	30,985,875	30,721,440
Habib Bank Limited	21,939,617	32,331,505	23,352,678	24,877,908	25,638,049
Credit Bank Ltd	18,331,250	14,112,365	15,318,871	19,071,907	19,639,370
Oriental Comm. Bank	5,498,595	8,208,537	14,630,564	18,001,780	16,778,631
Paramount-Universal Bank	490,890	1,723,233	12,927,654	17,150,340	16,053,971
Middle East Bank of Kenya	6,914,485	10,233,964	12,915,345	14,109,657	15,580,630
UBA BANK	16,919,962	26,699,124	12,507,678	13,562,765	15,562,475
Dubai Bank Limited	13,305,770	20,188,379	11,846,321	13,417,768	13,644,242
Jamii Bora Bank	8,109,411	10,649,758	11,523,978	12,280,765	13,623,296
K-Rep Bank Ltd	12,969,712	21,858,603	10,789,907	11,772,876	13,199,240
Guardian Bank	3,100,351	4,419,806	9,319,978	11,745,825	12,834,687
First community Bank	15,394,571	19,671,456	8,754,978	10,323,563	12,778,509
Habib AG Zurich	51,371,890	10,398,805	8,740,980	9,959,564	11,305,398
Victoria Comm. Bank Ltd	4,461,421	10,348,739	8,722,987	9,702,875	11,009,480
Transnational Bank Limited	8,971,669	4,558,349	7,645,986	9,548,342	9,657,868
Habib Bank Limited	3,052,314	26,892,185	7,287,986	8,801,786	8,078,122
Credit Bank Ltd	13,949,400	8,127,135	5,861,778	7,255,987	8,028,877
Oriental Comm. Bank	7,339,320	4,018,428	5,394,456	7,014,342	7,308,854
Paramount-Universal Bank	3,141,381	7,670,050	5,030,345	6,407,234	7,010,323
Middle East Bank of Kenya	7,136,327	5,425,541	4,727,653	6,220,876	7,006,527
UBA BANK	4,658,793	1,874,268	4,639,890	5,870,8765	5,765,799
Dubai Bank Limited	1,596,398	9,594,061	3,206,645	3,480,453	3,709,630
Jamii Bora Bank	7,748,940	6,380,098	2,316,389	2,924,954	2,926,860

TOTAL LOANS - CREDIT(ksh '000')

TOTAL LOANS	2011	2012	2013	2014	2015
Kenya Commercial (KCB)	93,542,609	87,146,982	179,844,784	187,023,675	233,701,908
Equity Bank Limited	98,749,618	137,344,567	106,486,655	122,410,987	169,088,981
Co-op Bank	56,694,876	60,336,829	109,409,987	119,088,453	165,766,453
Barclays Bank	63,378,232	72,902,021	96,098,435	112,695,214	159,373,908

Standard Chartered Bank Ltd	62,274,421	86,618,311	99,072,768	104,204,644	150,882,907
CFC Stanbic Bank	30,634,025	21,322,597	64,257,763	66,150,786	82,828,765
Commercial Bank of Africa	13,156,455	32,608,876	52,025,907	66,381,764	83,059,786
Diamond Trust Bank Kenya	31,133,485	37,850,277	39,610,987	42,504,987	89,182,908
I & M Bank	14,495,208	20,844,636	50,944,231	59,930,876	76,608,876
Citibank, N.A.	436,729	38,340,879	46,779,234	55,375,543	92,053,876
NIC Bank Ltd	44,977,967	35,658,053	28,451,456	23,331,234	40,009,746
National Bank(NBK)	10,615,380	58,984,960	28,068,456	28,347,876	35,025,345
Bank of Africa	30,087,373	19,503,400	18,139,765	29,284,231	45,962,765
Bank of Baroda (K) Ltd	1,880,943	3,484,944	21,640,653	29,882,452	36,560,132
Chase Bank Limited	3,868,472	14,836,692	19,144,546	21,923,890	38,601,786
Prime Bank Limited	9,676,110	1,926,918	18,394,342	21,151,651	37,829,890
Housing finance	4,121,977	6,047,276	25,223,897	30,294,567	46,972,453
Ecobank Kenya Ltd	1,688,664	11,262,362	14,904,451	19,038,897	25,716,650
Family Bank	1,953,296	4,732,471	11,381,442	13,968,875	10,646,774
Imperial Bank Limited	24,591,500	1,991,178	16,332,678	17,869,734	24,547,674
Bank of India	9,084,430	13,434,459	7,229,764	10,015,435	26,693,664
Consolidated Bank of Kenya	9,291,539	6,718,235	7,074,874	9,790,875	16,468,907
Fina Bank Limited	3,293,085	4,472,541	9,197,875	10,077,009	16,755,000
Equitorial Commercial Bank	183,868	327,331	277,645	743,983	421,987
Gulf African Bank	3,682,333	4,933,235	6,635,987	7,538,897	14,216,543
African Banking Corporation	9,120,438	14,122,485	7,440,890	9,447,567	6,125,125
Giro Commercial Bank	7,675,806	10,208,137	5,902,765	6,932,342	13,610,678
Development Bank of Kenya	4,768,579	5,392,436	6,360,987	5,519,876	62,197,875
Fidelity Commercial Bank	6,745,468	11,131,009	6,546,654	6,639,567	23,317,234
K-Rep Bank Ltd	1,355,655	1,735,099	5,865,765	7,153,234	11,678,831
Guardian Bank	5,439,539	5,923,970	4,110,761	5,291,875	8,969,000
First community Bank	21,401,747	4,851,414	4,258,564	5,453,789	9,131,765
Habib AG Zurich	2,749,529	5,288,180	2,667,564	2,328,456	4,006,876
Victoria Comm. Bank Ltd	3,992,127	2,450,600	6,754,789	6,955,324	14,633,908
Transnational Bank Limited	1,518,545	9,693,276	6,382,987	4,360,432	11,038,987
Habib Bank Limited	6,444,336	2,249,351	2,067,987	2,740,345	4,418,876
Credit Bank Ltd	2,175,272	2,213,290	2,177,987	3,341,345	5,223,019
Oriental Comm. Bank	1,619,369	5,252,438	2,883,543	3,112,543	9,790,568
Paramount-Universal Bank	4,816,960	1,595,752	2,851,657	3,499,123	5,177,876
Middle East Bank of Kenya	1,253,920	1,086,032	2,564,456	3,145,342	4,823,678
UBA BANK	1,144,162	6,270,684	8,564,302	11,309,543	17,564,987
Dubai Bank Limited	4,950,218	2,983,550	3,543,506	9,096,440	17,118,567
Jamii Bora Bank	2,290,296	3,456,789	1,517,674	1,783,678	4,461,564

EQUITY (ksh '000')

	2011	2012	2013	2014	2015
African Banking Corporation	774,456	958,876	1,118,765	1,876,280	1,530,899
Bank of Africa	845,786	1,678,223	1,715,909	2,567,969	5,101,905
Bank of Baroda (K) Ltd	1,456,912	2,456,247	3,095,876	3,867,685	4,345,554
Bank of India	676,534	730,765	906,234	1,876,204	722,234
Barclays Bank	13,645,933	16,342,103	29,456,202	20,763,972	28,778,967
CFC Stanbic Bank	7,534,118	8,342,143	10,345,035	10,563,150	18,345,101
Chase Bank Limited	1,345,690	2,345,069	2,756,545	3,678,378	4,456,063
Citibank, N.A.	456,208	468,908	930,456	467,456	674,450
Commercial Bank of Africa	345,190	567,077	1882,879	345,112	678,346
Consolidated Bank of Kenya	424,987	490,765	801,564	1,017,876	1,185,345
Co-op Bank	240,463	274,210	391,465	269,223	239,583
Credit Bank Ltd	464,675	465,456	896,234	688,231	711,780
Development Bank of Kenya	763,645	935,342	1,103,456	1,579,897	2,456,036
Diamond Trust Bank Kenya	5,345,334	6,456,263	8,057,890	10,453,366	14,786,878
Dubai Bank Limited	282,897	231,678	596,876	373,453	264,342
Ecobank Kenya Ltd	968,890	1,345,145	1,631,908	1,702,986	2,345,112
Equitorial Commercial Bank	1,876,229	1,789,363	1,489,098	1,345,562	1,879,634
Equity Bank Limited	19,660,897	23,337,654	28,308,456	35,890,047	42,786,672
Family Bank	1,273,876	1,150,876	1,224,654	1,342,319	1,890,561
Fidelity Commercial Bank	620,456	747,897	896,345	1,234,062	1,892,348
Fina Bank Limited	1,890,129	1,543,107	1,158,907	1,452,331	1,098,527
First community Bank	492,546	527,342	785,342	1,026,567	1,357,136
Giro Commercial Bank	835,897	873,654	948,908	1,876,065	1,905,219
Guardian Bank	666,643	728,453	948,765	958,908	1,023,179
Gulf African Bank	1,897,235	1,876,325	1,547,342	1,875,743	1,987,834
Habib AG Zurich	877,987	904,764	1,027,907	1,234,100	1,678,124
Habib Bank Limited	501,765	512,789	2,103,345	752,908	801,765
Housing finance	846,345	927,897	1,477,789	1,345,435	1,908,574
I & M Bank	5,789,529	6,435,434	7,896,876	9,875,900	15,789,065
Imperial Bank Limited	608,987	857,907	1,340,985	1,452,579	1,745,775
Kenya Commercial (KCB)	20,645,058	22,543,398	27,876,876	45,789,163	52,067,926
K-Rep Bank Ltd	944,904	982,654	1,138,234	1,897,290	1,345,385
Middle East Bank of Kenya	355,345	324,567	459,457	499,678	443,098
National Bank(NBK)	3,456,075	3,890,065	3,898,543	3,786,742	4,789,175
NIC Bank Ltd	1,456,910	2,789,565	4,744,342	4,789,936	5,097,758
Oriental Comm. Bank	428,897	418,456	2,138,908	625,765	622,345
Paramount-Universal Bank	391,546	371,653	622,342	562,876	532,674
Prime Bank Limited	171,435	1,198,987	1,336,784	1,536,765	2,890,504
Standard Chartered Bank Ltd	11,390,786	13,807,098	20,210,987	20,346,571	30,893,603

Transnational Bank Limited	537,987	559,543	948,872	815,564	890,876
UBA BANK	319,786	278,432	627,543	436,897	353,071
Victoria Comm. Bank Ltd	411,876	463,876	596,654	712,345	917,568

Weighted Bank Lending Interest Rate

Name of the Bank	2011	2012	2013	2014	2015
African Banking Corporation	0.20	0.18	0.23	0.11	0.16
Bank of Baroda	0.13	0.14	0.19	0.34	0.12
Bank of India	0.11	0.13	0.17	0.03	0.10
Barclays Bank of Kenya Ltd	0.31	0.30	0.28	0.17	0.09
CFC Stanbic Bank Ltd	0.18	0.16	0.17	0.06	0.07
Chase Bank Ltd	0.06	0.06	0.08	0.25	0.22
Citibank N.A.	0.10	0.10	0.09	0.17	0.07
Commercial Bank of Africa	0.11	0.11	0.23	0.07	0.14
Consolidated Bank of Kenya	0.10	0.07	0.08	0.21	0.10
Cooperative Bank Ltd	0.23	0.26	0.26	0.08	0.15
Credit Bank Ltd	0.10	0.15	0.15	0.03	0.18
Development Bank of Kenya	0.24	0.19	0.30	0.05	0.09
Diamond Trust Bank Ltd	0.01	0.06	0.04	0.08	0.25
Dubai Bank Ltd	0.10	0.10	0.11	0.13	0.08
Ecobank Kenya Ltd	0.18	0.16	0.13	0.18	0.06
Equatorial Commercial Bank	0.28	0.06	0.00	0.11	0.32
Equity Bank Ltd	0.14	0.06	0.05	0.28	0.06
Family Bank Ltd	0.15	0.15	0.18	0.14	0.12
Fidelity Bank Ltd	0.1	0.14	0.18	0.15	0.16
Fina Bank Ltd	0.07	0.06	0.04	0.1	0.18
First Community Bank Ltd	0.11	0.21	0.24	0.07	0.06
Giro Commercial Bank Ltd	0.91	0.11	0.12	0.11	0.14
Gulf African Bank Ltd	0.08	0.09	0.09	0.91	0.23
Guardian Bank Ltd	0.09	0.11	0.12	0.08	0.09
Habib A.G. Zurich	0.11	0.11	0.12	0.09	0.08
Habib Bank Ltd	0.23	0.23	0.27	0.11	0.06
Imperial Bank Ltd	0.03	0.10	0.08	0.34	0.18
I&M Bank Ltd	0.17	0.17	0.15	0.03	0.08
Kenya Commercial Bank Ltd	0.06	0.08	0.07	0.17	0.14
K-Rep Bank Ltd	0.25	0.12	0.15	0.06	0.14
Middle East Bank (K) Ltd	0.17	0.16	0.19	0.25	0.17
National Bank of Kenya Ltd	0.07	0.08	0.06	0.17	0.14
NIC Bank Ltd	0.21	0.18	0.17	0.07	0.08
Oriental Commercial Bank	0.08	0.08	0.31	0.21	0.33
Paramount Universal Bank	0.03	0.10	0.08	0.08	0.07
Prime Bank Ltd	0.05	0.06	0.06	0.03	0.08
Standard Chartered Bank (K)	0.08	0.09	0.07	0.05	0.14
Trans-National Bank Ltd	0.13	0.10	0.12	0.08	0.18
UBA Kenya Bank	0.18	0.16	0.13	0.13	0.14
Victoria Commercial Bank	0.11	0.11	0.12	0.18	0.22

TOTAL DEPOSITS (Ksh '000')

NAME OF THE BANK	2011	2012	2013	2014	2015
Kenya Commercial Bank Ltd	234,234	245,776	267,654	276,750	321,897
Kenya Commercial Bank Ltd	156,786	342,654	276,987	216,174	267,564
Equity Bank Ltd.	176,867	287,675	213,564	202,485	298,775
Barclays Bank of Kenya Ltd	98,765	123,876	156,879	164,779	209,776
Standard Chartered Bank (K) Ltd	76,452	89,876	123,987	154,067	187,663
Commercial Bank of Africa Ltd	344,564	564,345	134,564	122,044	324,987
CfC Stanbic Bank (K) Ltd	46,876	67,897	56,765,	9 6,830	105,987
Diamond Trust Bank (K) Ltd	87,765	96,876	68,456	101,594	156,876
NIC Bank Ltd	47,890	57,879	88,761	92,791	109,786
I&M Bank Ltd	76,876	90,987	65,765	86,621	97,876
National Bank of Kenya Ltd	108,675	89,765	106,987	104,734	143,876
Chase Bank Ltd	67,876	45,654	76,755	79,124	87,654
Citibank N.A. Kenya	65,876	76,765	65,654	5 1,150	45,786
Family Bank Ltd	34,765	38,987	43,876	47,186	56,645
Bank of Baroda (K) Ltd	34,879	41,890	45,879	48,683	64,876
Bank of Africa (K) Ltd	23,754	36,890	40,786	41,671	53,876
Imperial Bank Ltd	23,674	26,754	47,890	47,148	54,789
Prime Bank Ltd	45,786	43,768	56,879	4 4,940	78,907
Housing Finance Co. of Kenya Ltd	23,645	56,987	43,765	3 6,310	27,908
Ecobank Kenya Ltd	21,534	43,789	34,877	32,414	45,732
Bank of India	12,534	15,768	20,766	24,668	36,987
Guaranty Trust Bank Ltd	7,897	21,765	29,087	17,734	28,987
Gulf African Bank Ltd	9,876	14,765	14,657	15,795	19,078
African Banking Corporation Ltd	4,654	8,978	15,785	16,050	21,764

Victoria Commercial Bank Ltd	7,865	9,876	15,768	12,289	15,657
K - Rep Bank Ltd	8,987	4,879	10,786	1 2,065	14,675
Giro Commercial Bank Ltd	8,976	9,876	10,876	12,451	14,867
Fidelity Commercial Bank Ltd	12,897	23,654	23,765	13,559	17,897
Development Bank of Kenya Ltd	3,655	5,678	8,765	8 ,465	10,876
Jamii Bora Bank Ltd	5,765	6,764	8,234	8 ,485	9,098
Equatorial Commercial Bank Ltd	12,765	14,756	12,765	1 4,306	16,876
First Community Bank Ltd	6,789	8,987	12,678	13,339	14,785
Guardian Bank Ltd	7,897	6,786	4,755	12,643	14,765
Consolidated Bank of Kenya Ltd	9,908	8,897	11,765	1 0,642	12,765
Habib Bank A.G. Zurich	4,675	3,876	8,900	8 ,948	9,765
Trans - National Bank Ltd	6,876	9,876	10,876	7 ,666	9,765
Habib Bank Ltd	6,785	9,098	10,765	6 ,399	12,876
Paramount Universal Bank Ltd	4,567	6,789	8,768	8,048	9,876
Oriental Commercial Bank Ltd	6,235	7,855	5,680	6 ,231	7,689
Credit Bank Ltd	4,657	6,987	4,768	7 ,213	6,786
Middle East Bank (K) L	3,567	4,678	4,765	4 ,127	6,876
UBA Kenya Ltd	4,657	6,879	4,678	3 ,576	4,987