THE ROLE OF CENTRAL BANK RATE ON COMMERCIAL BANKS PROFITABILITY IN KENYA

BY

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RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

NOVEMBER, 2013

DECLARATION

This research project is my original work and has not been presented to any other institution or university.

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This research project has been submitted for examination with our approval as the university supervisor.

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ACKNOWLEGEMENT

I am deeply indebted to all those who in their own way contributed to successful completion of this study. First and foremost I thank the almighty God, to whom all knowledge , wisdom and power belong for sustaining me in good health, sound judgment and strength to move on and complete my masters studies.

Special appreciation goes to my supervisor, James Ng'ang'a for his dedication, guidance, valuable suggestion and ideas throughout the course of this project. Without his enormous support this study would not have been successful.

Thanks to my family who always inspired me in every step to accomplish this study. I am eternally grateful for your love, encouragement and support in all my endeavors.

DEDICATION

This project is dedicated to my loving parents, my wife Agnes Wanjiku, my daughters

Angel and Abigail for instilling me virtue of hard work from a very early age.

ABSTRACT

The main purpose of the research is to investigate the role of central bank rate on commercial banks profitability in Kenya. Recent movements in interest rates, inflation and exchange rates present real dangers to economic stability. The economy has endured steep inflationary pressures and exchange depreciation for about 9 months in 2011. This was a descriptive study where the researcher gathered data from the published accounts and financial statements from the nine listed commercial banks in Kenya. The study found that taking all factors (central bank rate) constant at zero, commercial banks profitability in Kenya will be 1.147. Similarly, taking all other independent variables at zero, a unit increase in central bank rate will lead to a 0.752 increase in commercial banks profitability in Kenya. The study concluded that there has been a drastic change in CBK rates for the period between years 2007 to 2012. The increase in CBK rates has doubled over the reported period between 2007 and 2012. Although there were both upward and downward trends of CBK rate the overall effect was an increase in the CBK rates. The study recommends that the management of commercial banks in Kenya should invent strategies that cushion the banks from drastic changes in central bank rate which hamper their attractiveness to its customers. The study also recommends that the banks management should invest in economic research to predict the changes in the economy so as to be well prepared for the changing trends in the market that negatively impact on the banks profitability. This study encountered the following limitations; the limitation of time and financial constraint, which made has concentrate on a very narrow aspect of interest rates. In addition we could not carry an in-depth analysis of the data collected.

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ABBREAVIATION

CBK: Central Bank of Kenya

GDP: Gross domestic product

NIM: Net Interest Margin

NPAs: Non-Performing Assets

NSE: Nairobi Stock Exchange

ROA: Return On Asset

ROCE: Return On Capital Employed

ROE: Return On Equity

RONA: Return On Net Assets

UK: United Kingdom

US: United States

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007). Interest can be thought of as "rent of money". Interest rates are fundamental to a 'capitalist society' and are normally expressed as a percentage rate over the period of one year. Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation (Ngugi, 2001). Interest rate spread is defined by market microstructure characteristics of the banking sector and the policy environment (Ngugi, 2001). Risk-averse banks operate with a smaller spread than risk-neutral banks since risk aversion raise the bank's optimal interest rate and reduces the amount of credit supplied. Actual spread, which incorporates the pure spread, is in addition influenced by macroeconomic variables including monetary and fiscal policy activities (Emmanuelle, 2003).

Kenya's interest rates were fairly stable before 1990s due to a combination of price controls and banking controls in the country. Interest rate volatility quickly set in after 1992 multiparty elections (Ngugi, 2001). Together with runaway inflation, sharp rise in interest rates were noted in most of 1993. Treasury bills interest rates at one time reached 84.67 % in July 1993 and the interbank rate exceeded 68 percent in March 1993. The lending rate also rose steadily, exceeding 30 percent for the period

October 1993 to October 1994. Lending rates remained above or close to 30 percent through September 1998, but declined in 1999 (Beck, Cull, Fuchs, Getenga, Gatere, Randa, and Trandafir, 2010). The rates peaked again at 24 percent in November 1999 and that was the highest rate that preceded a decade of low and stable interest rates. Indeed the lending rates remained within 12 and 16 percent through September 2011 causing a huge expansion in credit to the private sector, rising government debt appetite, and growth in the economy (Ben-Khedhiri, Casu and Sheik-Rahim, 2005).

Central banks, on the other hand, owing to their capacity to create domestic liquidity are generally deemed reliable obligors in their own currency and hence would not appear to need capital as a guarantee for borrowing. In fact, in most cases, payments finality is defined as receipt of central bank money-either banknotes or deposits. This is not to deny there is a limit to the real resources that can be obtained by central banks (Ngugi, 2001). The implicit limit is expressed by the possibility of the market indirectly constraining the central bank, in the extreme by refusing to transact in and demand domestic monetary base. Nevertheless, liquidity per se, is almost never an issue in the domestic market (Jayaraman and Sharma, 2003). If foreign borrowing is the issue, while a strong balance sheet would prove helpful, central bank borrowing is likely to be treated as sovereign borrowing and thus counterparty concerns would be focussed on the overall government position, presuming that the bank would have either the explicit or implicit backing of government.

High interest rates may also lead to higher market prices associated with rising costs of production (Rhyne, 2002). This happens when companies increase their mark ups to

compensate for costly bank financing. This is a special case where rising interest rates could reduce the effectiveness of monetary measures to tame inflation. Thus, supply constraints such as food supply problems or cost-push related drivers of inflation such as high fuel prices could keep inflation high and potentially lead to a more worrisome scenario of high inflation and low growth (Jayaraman and Sharma, 2003). High interest rates may also have some income distribution aspects. For example, high interest rates could disproportionately affect the middle class who ordinarily are less affected by supply side inflation. If this effect comes through, then depressed middle class consumption demand could sharply undo employment gains and poverty reduction efforts since 2003. Since interest rates are likely to slow economic growth, it could only be hoped that inflation will decline. Alternatively, high interest will also have negative effect on the banking sector. For instance, already the interbank lending is about 30 percent and quite unstable. This implies that some banks are accessing operational funds at very high rates. In addition, the recent increase in the cash reserve ratio will further strain banks and probably affect their profitability (Ngugi, 2001).

Financial institutions facilitate mobilization of savings, diversification and pooling of risks and allocation of resources. However, since the receipts for deposits and loans are not synchronized, intermediaries like banks incur certain costs (Ngugi, 2001). They charge a price for the intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. The difference between the gross costs of borrowing and the net return on lending defines the intermediary costs (information costs, transaction costs (administration and default costs and operational costs) (Rhyne,

2002). The magnitude of interest rate spread, however, varies across the world. It is inverse to the degree of efficiency of the financial sector, which is an offshoot of a competitive environment. The nature and efficiency of the financial sectors have been found to be the major reasons behind differences in spread in countries across the world. In economies with weak financial sectors, the intermediation costs which are involved in deposit mobilisation and channeling them into productive uses, are much larger (Jayaraman and Sharma, 2003).

1.1.1 Central Bank Rate

A Central Bank also known as the Reserve Bank of the government is separate from the country's ministry of finance. It's still referred to as the government's bank because it manages buying and selling of government bonds and other instruments. Most developed nations today have an "independent" central bank, that is one which operates under rules designed to prevent political interference.

Central banks maintain the supply of money in the economy through measures called "open market operations". When a central bank buys securities such as bonds it infuses money into the market, which in turn means printing money to acquire a certain instrument. Conversely, selling of securities lowers the money supply. Central banks are also responsible for maintaining liquidity in the economy. When commercial banks go insolvent or cannot cover for their debt position (as seen in the 2009 financial crisis), the central banks prevent the financial system from collapsing (Bennaceur and Goaied, 2008).

Fortunately or unfortunately we have had some experience of this in the 2009 with many bank, financial institutions going bust and the central banks running to their rescue. So you will remember this one (Bennaceur and Goaied, 2008). In most countries a central bank through its subsidiaries and/or directly regulate and monitor the banking sector. In some countries like the United Kingdom regulatory responsibility lies with the UK Treasury, or an independent government agency (Allen, 1988). The regulatory body is in charge of verifying bank balance sheets and behaviour and policies toward consumers. Apart from refinancing, it also provides banks with services such as transfer of funds, bank notes and coins or foreign currency. Thus it is often described as the "bank of banks"

1.1.2 Bank Profitability

Measures of after-tax rates of return, such as the return on average total assets (ROA) and the return on total equity (ROE), are widely used to assess the performance of firms, including commercial banks (Allen, 1988). Bank regulators and analysts have used ROA and ROE to assess industry performance and forecast trends in market structure as inputs in statistical models to predict bank failures and mergers and for a variety of other purposes where a measure of profitability is desired. Commercial banks' profitability is determined from the interest spreads between loans and deposits, as majority of its income is from interest income. As profitability is determined from revenue and costs, banks have to closely monitor the factors that affect these two determinants (Bennaceur and Goaied, 2008).

The determinants of banks' profitability are usually assorted into internal and external factors. Some studies were country specific and few of them considered panel of countries for reviewing the determinants of profitability (Allen, 1988). Overall these studies propose that the determinants of profitability for bank can be divided into two groups; internal and external factors. These studies specify return on asset (ROA), return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) as the dependent variables and considering the internal and external factors as independent variables. Molyneux and Thornton (1992) examine the profitability of banking zone on different countries. Return on Assets (ROA); this is measured by the net profits before tax divided by the total assets of the bank. It measures the overall effectiveness in generating profits with available assets.

1.1.3 Central Bank Rate and Commercial Banks Profitability

Interest rates in the recent past have become a very sensitive factor in the operation of commercial banks. The central bank of Kenya has used it as a tool to control the inflation levels and also to manage the foreign exchange rates to acquire stability in the economy (Bennaceur and Goaied, 2008). With these happenings the commercial banks have had to contend with periods of high interest rates which have affected the banks differently as different banks react differently to the impact of interest rate changes. This changes cause consumers to reduce their borrowings or halt them with the expectations that interest rates will eventually come down (Ben-Khedhiri, Casu and Sheik-Rahim, 2005). Since one of the major sources of income for commercial banks is earned from interest related

activities it is of paramount importance that the commercial banks understand the impact of interest rates on their productivity in order to maximize shareholders wealth. The objective of this study was to find out the relationship between interest rates and the profitability of commercial banks in Kenya .The study adopted a regression research design which involved determining profitability when interest rate is varied at different times to determine its effects on profit levels (Bennaceur and Goaied, 2008).

In Kenya, the banking sector plays a dominant role in the financial sector, particularly with respect to mobilization of savings and provision of credit (Beck, Cull, Fuchs, Getenga, Gatere, Randa, and Trandafir, 2010). An analysis of bank interest rate spreads is therefore central to the understanding of the financial intermediation process and the macroeconomic environment in which banks operate. This paper is motivated by the fact that although Kenya's financial sector was liberalized in the early 1990s to allow for market determination of interest rates, concerns about high interest rate spreads have persisted and attracted a lot of debate in both public and policy forums. However, there has been little empirical research on this issue, particularly with respect to the analysis of interest rate spreads at the micro or bank level (Bennaceur and Goaied, 2008).

Nampewo (2013) studies the determinants of the interest rate spread of the banking sector in Uganda using time series data for the period 1995-2010. The study applies the Engle and Granger two-step procedure to test for cointegration between the bank rate, treasury bill rate, exchange rate volatilities, the ratio of money supply to gross domestic product and the proportion of non-performing loans to total private sector credit. Results show that the interest rate spread in Uganda is positively affected by the bank rate, the Treasury

bill rate and non-performing loans. On the other hand, M2/GDP ratio and real GDP have a negative influence on the spread. However the analysis is undertaken at macro level hence concealing micro and bank-specific characteristics.

Aboagye, et al (2008) studies the response of net interest margin of banks to changes in factors that are bank-specific, banking industry specific and Ghanaian economy macroeconomic factors. It finds that an increase in the following factors increases the net interest margin of banks: bank market power (or concentration), bank size, staff costs, administrative costs, extent to which a bank is risk averse and inflation. On the other hand, an increase in excess reserves of banks, central bank lending rate and management efficiency decreases the net interest margin of banks.

1.1.4 Commercial Banks in Kenya

In Kenya, the Banking Sector is composed of the Central Bank of Kenya, as the regulatory authority and the regulated; Commercial Banks, Non-Bank Financial Institutions and Forex Bureaus (CBK, 2010). As at 31st December 2011 the banking sector comprised 45 institutions, 43 of which were commercial banks and 2 mortgage finance companies, and 120 Foreign Exchange Bureaus. Commercial banks and mortgage finance companies are licensed and regulated under the Banking Act, Cap 488 and Prudential Regulations issued there under. Foreign Exchange Bureaus are licensed and regulated under the Central Bank of Kenya (CBK) Act, Cap 491 and Foreign Exchange Bureaus Guidelines issued there under. Out of the 43 commercial bank institutions, 33 were locally owned and 12 were foreign owned. The locally

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owned financial institutions comprised 3 banks with significant government shareholding and 28 privately owned commercial banks. The foreign owned financial institutions comprised 8 locally incorporated foreign banks and 4 branches of foreign incorporated banks. Of the 42 private banking institutions in the sector, 71% are locally owned and the remaining 29% are foreign owned (CBK, 2009).

It is accepted that the quantity or percentage of non-performing assets (NPAs) is often associated with bank failures and financial crises in both developing and developed countries (Caprio and Klingebiel, 2002). In fact, there is abundant evidence that the financial/banking crises in East Asia and Sub-Saharan African countries were preceded by high non- performing assets. For instance, in Indonesia where over 60 banks collapsed during the financial crisis, nonperforming assets represented about 75% of total asset portfolios (Caprio and Klingebiel, 2002). The banking crisis which affected a large number of Sub-Saharan African countries in the 1990s was also accompanied by a rapid accumulation of nonperforming assets (Caprio and Klingebiel, 2002).

The probability of a banking crisis occurring may be even more important because non-performing asset-related risks are compounded by the structure of the banking system which is dominated by a few large banks (Fofack, 2005). However, despite the implications of nonperforming assets for banking crisis, for investment and economic growth, and for anticipating future banking and financial crises, very few studies have been done on the effect of interest rate spread on the level of non-performing assets in Sub-Saharan Africa (Caprio and Klingebiel, 2002).

1.2 Statement of the Problem

Recent movements in interest rates, inflation and exchange rates present real dangers to economic stability. The economy has endured steep inflationary pressures and exchange depreciation for about 9 months in 2011. This started with the build-up in inflationary pressures early in the year, then the onset of exchange rate depreciation around April 2011, and the recent rise in interest rates (Ngugi, 2001).

While quite a number of studies have investigated the effect of interest rate spread, most of these studies have been done in developed countries with few being done in developing countries. In Kenya, Ngugi (2001) conducting a study on interest rate spread in Kenya found that commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. Other studies done on interest rate spread showed that indicated that potential savers are discouraged due to low returns on deposits and thus limits financing for potential borrowers (Ndung'u and Ngugi, 2000). These implications of banking sector inefficiency have spurred numerous debates in developing countries about the determinants of banking sector interest rate.

Research on the determinants of bank profitability has focused on both the returns on bank assets and equity, and net interest rate margins. It has traditionally explored the impact on bank performance of bank-specific factors, such as risk, market power, and regulatory costs. More recently, research has focused on the impact of macroeconomic factors on bank performance (Ngugi, 2001). Studies have shown that there is a

pervasive view amongst some stakeholders that high interest rate spreads are caused by the internal characteristics of the central bank, such as their tendency to maximize profits in an oligopolistic market, while many others argue that the spreads are imposed by the macroeconomic, regulatory and institutional environment in which banks operate (Fofack, 2005). These debates can only be resolved through objective, quantitative analysis of the determinants of banking sector interest rate spreads in developing countries. This study therefore sought to fill this gap by establishing the links between interest rate and banks profitability of commercial banks in Kenya.

1.3 Objective of the Study

The objective of the study was to investigate the role of central bank rate on commercial banks profitability in Kenya.

1.4 Value of the Study

Findings of the study may particularly be useful in providing additional knowledge to existing and future institutions on the role of central bank rate on banks profitability of listed commercial banks in Kenya and provide information to potential and current scholars on financial management, lending, profitability and firms' performance theories and practice in Kenya. This may expand their knowledge on the role of central bank rate on banks profitability of listed commercial banks in Kenya and also identify areas of further study. The study may be a source of reference material for future researchers on other related topics; it may also help other academicians who undertake the same topic in their studies.

The findings of this study may help in enlightening the key decision makers in central bank of Kenya and commercial banks in policies and formulation. The study may in addition to the above, be useful to stakeholders, financiers, and investors in formulating and planning areas of intervention and support.

Finally, the study is important not only to small medium enterprises in Kenya but also to other managers in other sectors. It would help them understand the relationship between central bank rate and banks profitability of listed commercial banks in Kenya; it helps different firms achieve success better than others.

2.1 Introduction

This chapter presents the literature review, this is given in subsection to outline on the role of central bank rate on banks profitability, section 2.2 discuss on the theoretical review where it brings into perspective on Woodford's neo-Wicksellian theory and agency theory. Section 2.3 outlines on profitability versus Liquidity trade offs, section 2.4 reviews on empirical research and finally section 2.5 discuss the summary of literature review

2.2 Theoretical Review

2.2.1 Woodford's Neo-Wicksellian Theory

Woodford's neo-Wicksellian theory of monetary policy is based on the assumption that central banks can control short-term market rates of interest and, hence, affect inflation without taking any recourse to monetary aggregates. In order to show this, Woodford (2003) presents a model of a "purely cashless economy. In that model, "markets are perfectly competitive, prices adjust continuously to clear markets, and there exist markets in which state-contingent securities of any kind may be traded. As is well known, no one would have to hold money in this world of complete financial markets, as all payments could be effected by transfers of other assets (Arrow and Hahn 1971). Woodford assumes nevertheless that there is a "distinguished financial asset" that forms "the monetary base"

insofar as it defines the unit of account. The base money is a liability of the central bank that represents nothing but a claim to payment in terms of itself. There is no cash in the economy, since all base money is held in and transferred between bank accounts.

Given that Woodford's base model excludes monetary frictions, there is no specific demand for base money. Other riskless nominal assets are perfect substitutes for those liabilities of the central bank. Therefore Woodford explores the conditions under which "the private sector" would be willing to hold money in a model of asset pricing under rational expectations. In this model, the infinitely lived representative household maximizes intertemporal utility from the consumption of the economy's single good. Making the standard assumptions for this class of intertemporal general-equilibrium models and postulating that the money supply is always positive.

The asset-pricing model is thus held to provide the base for demonstrating that a Wicksellian interest-rate rule (a positive feedback to deviations of the price level from the target path) can yield determinate rational-expectations equilibrium paths of the prices and interest . Woodford's account is reminiscent of Hicks's (1946: 251-54) interpretation of Wicksell's process as an equilibrium phenomenon, with no actual discrepancies between the money and the natural rates. However, in contrast with Hicks, Woodford does not conclude from that that Wicksell's theory is of little use as guide to banking policy. Moreover, the distinction between those two rates of interest, together with Wicksell's notion that changes in the natural rate are important sources of price-level variation, can only be accommodated by a model with sticky prices and output gaps (Woodford, 2003). The problems posed by a negative natural rate of interest are also

mentioned by Woodford (2003), who suggests that a sharp deflation can be avoided by a regime that creates expectations of subsequent inflation. This is not inconsistent with Wicksell's approach, although Wicksell's distinction between long and short investment is not part of Woodford's framework. It is, on the other hand, only implicit in Wicksell that monetary policy should not aim at stabilizing prices at depression level, while Woodford makes clear that the central bank should in that context replace its zero inflation target by a policy commitment able to generate expectations of a higher future price level (Eggertsson and Woodford 2003).

2.2.2 Classical theory of interest rates

The classical theory of interest rates applies the classical theory of economics to determining interest rates. Classical theory of interest rates compares the supply of savings with the demand for borrowing. Using supply and demand curves the equilibrium rate is calculated by determining the curves intersection point. Thus if savings are greater than investments the interest rate drops until they reach equilibrium and vise versa, if savings are less than investment the interest rate increases until the reward for savings encourages increased savings rates causing the market to again reach equilibrium. However the classical theory of interest rates fails to account for factors besides supply and demand that may affect interest rates such as the creation of funds, the importance of income and wealth and changes in the primary borrowers in an economy (Ho and Saunders, 1981).

For the classical theory, as can be seen from the above quotations, assumes that it can then proceed to consider the effect on the rate of interest of (e.g.) a shift in the demand curve for capital, without abating or modifying its assumption as to the amount of the given income out of which the savings are to be made (Ho and Saunders, 1981). The independent variables of the classical theory of the rate of interest are the demand curve for capital and the influence of the rate of interest on the amount saved out of a given income; and when (e.g.) the demand curve for capital shifts, the new rate of interest, according to this theory, is given by the point of intersection between the new demand curve for capital and the curve relating the rate of interest to the amounts which will be saved out of the given income. The classical theory of the rate of interest seems to suppose that, if the demand curve for capital shifts or if the curve relating the rate of interest to the amounts saved out of a given income shifts or if both these curves shift, the new rate of interest will be given by the point of intersection of the new positions of the two curves. But this is a nonsense theory. For the assumption that income is constant is inconsistent with the assumption that these two curves can shift independently of one another. If either of them shift, then, in general, income will change; with the result that the whole schematism based on the assumption of a given income breaks down. The position could only be saved by some complicated assumption providing for an automatic change in the wage-unit of an amount just sufficient in its effect on liquidity-preference to establish a rate of interest which would just offset the supposed shift, so as to leave output at the same level as before. In fact, there is no hint to be found in the above writers as to the necessity for any such assumption; at the best it would be plausible only in relation to long-period equilibrium and could not form the basis of a short-period theory;

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and there is no ground for supposing it to hold even in the long-period. In truth, the classical theory has not been alive to the relevance of changes in the level of income or to the possibility of the level of income being actually a function of the rate of the investment (Ho and Saunders, 1981).

The above can be illustrated by a diagram as follows:
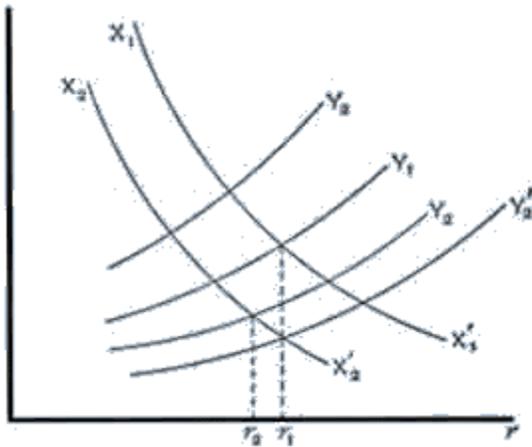
In this diagram the amount of investment (or saving) I is measured vertically, and the rate of interest r horizontally. X_1X_1' is the first position of the investment demand-schedule, and X_2X_2' is a second position of this curve. The curve Y_1 relates the amounts saved out of an income Y_1 to various levels of the rate of interest, the curves Y_2, Y_3, etc., being the corresponding curves for levels of income Y_2, Y_3, etc. Let us suppose that the curve Y_1 is the Y-curve consistent with an investment demand-schedule X_1X_1' and a rate of interest r_1. Now if the investment demand-schedule shifts from X_1X_1' to X_2X_2', income will, in general, shift also. But the above diagram does not contain enough data to tell us what its new value will be; and, therefore, not knowing which is the appropriate Y-curve, we do not know at what point the new investment demand-schedule will cut it. If, however, we

introduce the state of liquidity-preference and the quantity of money and these between them tell us that the rate of interest is r_2, then the whole position becomes determinate. For the Y-curve which intersects X_2X_2' at the point vertically above r_2, namely, the curve Y_2, will be the appropriate curve. Thus the X-curve and the Y-curves tell us nothing about the rate of interest. They only tell us what income will be, if from some other source we can say what the rate of interest is. If nothing has happened to the state of liquidity-preference and the quantity of money, so that the rate of interest is unchanged, then the curve Y_2' which intersects the new investment demand-schedule vertically below the point where the curve Y_1 intersected the old investment demand-schedule will be the appropriate Y-curve, and Y_2' will be the new level of income.

Thus the functions used by the classical theory, namely, the response of investment and the response of the amount saved out of a given income to change in the rate of interest, do not furnish material for a theory of the rate of interest; but they could be used to tell us what the level of income will be, given (from some other source) the rate of interest; and, alternatively, what the rate of interest will have to be, if the level of income is to be maintained at a given figure (e.g. the level corresponding to full employment).

2.2.3 Rational expectations theory

Rational expectations theory defines this kind of expectations as being identical to the *best guess of the future* (the optimal forecast) that uses all available information (Muth, 1961). Thus, it is assumed that outcomes that are being forecast do not differ systematically from the market equilibrium results. As a result, rational expectations do

not differ systematically or predictably from equilibrium results. That is, it assumes that people do not make systematic errors when predicting the future, and deviations from *perfect foresight* are only random. In an economic model, this is typically modelled by assuming that the expected value of a variable is equal to the expected value predicted by the model.

The rational expectations theory of interest rates is based on the idea that people formulate expectations based on all the information that is available in the market (Hanish, 2005). Rational expectation theory holds that the best estimation for future interest rates is the current spot rate and that changes in interest rates are primarily due to unexpected information or changes in economic factors. The rational expectations theory can be incorporated with the loanable funds theory in order to better consider the available information with the economy. The limiting factors of rational expectation theory are mostly related to the difficulty in gathering information and understanding how the public uses its information to form its expectations.

For example, suppose that *P* is the equilibrium price in a simple market, determined by supply and demand. The theory of rational expectations says that the actual price will only deviate from the expectation if there is an 'information shock' caused by information unforeseeable at the time expectations were formed (Hanish, 2005). In other words ex ante the actual price is equal to its rational expectation:

$$P = P* + \epsilon$$
$$E[P] = P*$$

where $P*$ is the rational expectation and ϵ is the random error term, which has an expected value of zero, and is independent of $P*$.

Rational expectations theories were developed in response to perceived flaws in theories based on adaptive expectations. Under adaptive expectations, expectations of the future value of an economic variable are based on past values. For example, people would be assumed to predict inflation by looking at inflation last year and in previous years. Under adaptive expectations, if the economy suffers from constantly rising inflation rates (perhaps due to government policies), people would be assumed to always underestimate inflation (Muth, 1961).

2.3 Empirical Review

A number of studies have revealed that central bank intervention does not actually calm volatility but instead it increases the volatility behaviour of exchange rates. Kiprono, (2004) studied the relationship between cash flow and earnings performance measures for companies listed in the Nairobi Stock Exchange (NSE). His objective was to determine the relationship between return on assets (ROA) return on equity (ROE) and return on net assets (RONA) against the cash flows of firms. To achieve this, regression analysis was employed on thirty companies listed on the NSE. The companies were picked randomly and were analyzed for the five years period between 1998 and 2003. He concluded that there is a positive or direct association between cash flows from operating activities and all the return performance indicators. The results also showed that there is a negative or indirect association between cash flow from financing and investing activities and returns performance indicators. On overall, there is a weak relationship between cash flows and performance indicators. However, he noted that it is important to determine the impact of firm size in cash flow and earnings performance indicators.

Ngugi (2001) analyzed the interest rates spread in Kenya from 1970 to 1999 and found that interest rate spread increased because of yet-to-be gained efficiency and high intermediation costs. Increase in spread in the post-liberalization period was attributed to the failure to meet the prerequisites for successful financial reforms, the lag in adopting indirect monetary policy tools and reforming the legal system and banks' efforts to maintain threatened profit margins from increasing credit risk as the proportion of non-performing assets. She attributed the high non-performing assets to poor business environment and distress borrowing, owing to the lack of alternative sourcing for credit when banks increased the lending rate, and the weak legal system in enforcement of financial contracts. According to her findings, fiscal policy actions saw an increase in treasury bill rates and high inflationary pressure that called for tightening of monetary policy. As a result, banks increased their lending rates but were reluctant to reduce the lending rate when the treasury bill rate came down because of the declining income from assets. They responded by reducing the deposit rate, thus maintaining a wider margin as they left the lending rate at a higher level. Postulating an error correction model and using monthly data for the study period, Ngugi (2001) found that for Kenya, rising inflation resulting from expansionary fiscal policy, tightening of monetary policy, yet-to-be realized efficiency of banks and high intermediation costs explained interest rate spreads.

Maudos et al (2004) analyzed interest margins in the principal European banking countries over the period 1993–2000 by considering banks as utility maximizers bearing operating costs. They found that factors that explain interest margins are the

competitive condition of the market, interest rate risk, credit risk, operating expenses, and bank risk aversion among others. Elsewhere Angbanzo (1997) tested the hypothesis that banks with more risky assets and higher interest rate risk select lending and deposit rates so as to earn wider net interest margins. He used United States bank data from 1989–93 and found evidence in support of the hypothesis.

Keeton and Morris (1987) undertook a study on why banks' loan losses differ. They examined the losses by 2,470 insured commercial banks in the United States (US) over the 1979-85. Using NPAs net of charge-offs as the primary measure of loan losses, Keeton and Morris (1987) shows that local economic conditions along with the poor performance of certain sectors explain the variation in loan losses recorded by the banks. The study also reports that commercial banks with greater risk appetite tend to record higher losses.

Gelos (2006) studies the determinants of bank interest margins in Latin America using bank and country level data. He finds that spreads are large because of relatively high interest rates (which in the study is a proxy for high macroeconomic risk, including from inflation), less efficient banks, and higher reserve requirements.

Another set of researchers namely Kaminsky and Lewis (1996) also lent support to the efficacy of the intervention through the signalling channel. They examined the signalling channel hypothesis to test whether or not the Federal Reserve's intervention activities implied changes in future monetary policy. They also examined the effect of intervention on the exchange rate. Using data on market observations from the financial press of foreign exchange rate intervention by the Fed for the period September 1985 to February

1990 and testing whether or not intervention provided no information about future policy, the duo found that intervention provided significant information about future changes in monetary policy.

Kiprono, (2004) studied the relationship between cash flow and earnings performance measures for companies listed in the Nairobi Stock Exchange (NSE). His objective was to determine the relationship between return on assets (ROA) return on equity (ROE) and return on net assets (RONA) against the cash flows of firms. To achieve this, regression analysis was employed on thirty companies listed on the NSE. The companies were picked randomly and were analyzed for the five years period between 1998 and 2003. He concluded that there is a positive or direct association between cash flows from operating activities and all the return performance indicators. The results also showed that there is a negative or indirect association between cash flow from financing and investing activities and returns performance indicators. On overall, there is a weak relationship between cash flows and performance indicators. However, he noted that it is important to determine the impact of firm size in cash flow and earnings performance indicators.

Fatum and Hutchison (1999B) slightly differed with the work of Dominguez, Kaminsky and Lewis. They used an event study methodology to assess the Germans Bundesbank and Federal Reserve bank's intervention operations in the foreign exchange market on the M/$. They covered the period from 1st September 1985 to 31st December 1995. They contended that intervention affected the exchange rate only in the short run. They however, did agree that there was evidence that intervention signalled future monetary policy.

2.4 Discussion Summary

Monetarist economists argued long ago that central bank interest rate rules exacerbate macroeconomic fluctuations, essentially by not allowing the interest rate to respond promptly to shifts in the supply and demand for loans. To support this critique, they pointed to the pro-cyclicality of the money stock. Yet, when there are real shocks and a real business cycle, modern macroeconomic models imply that some pro-cyclicality of money is desirable, to stabilize the price level. A simple interest rate rule illustrates that the monetarist critique can be valid within this model, since the rule exacerbates the response of real activity to real shocks. Other interest rate rules instead limit the macro economy's response to real shocks. But, while these interest rate rules have diverse effectson real activity, there is an important common implication: By smoothing the nominal interest rate in the short run, the rules all lead to increases in the longer-run variability in inflation and nominal interest rates.

The major problem with these early studies was that the researchers did not use real high frequency intervention data provided by central banks. During this period central banks were very secretive in their intervention operations and so they did not release their intervention data to researchers or indeed the market (Ngugi, 2001). So most researchers instead, used proxies of various kinds as intervention variables. Expectedly therefore their results were not really reliable.

While quite a number of studies have investigated the effect of interest rate spread, most of these studies have been done in developed countries with few being done in

developing countries. In Kenya, Ngugi (2001) conducting a study on interest rate spread in Kenya found that commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. Other studies done on interest rate spread showed that indicated that potential savers are discouraged due to low returns on deposits and thus limits financing for potential borrowers (Ndung'u and Ngugi, 2000). These implications of banking sector inefficiency have spurred numerous debates in developing countries about the determinants of banking sector interest rate spreads.

Studies have shown that there is a pervasive view amongst some stakeholders that high interest rate spreads are caused by the internal characteristics of the banks themselves, such as their tendency to maximize profits in an oligopolistic market, while many others argue that the spreads are imposed by the macroeconomic, regulatory and institutional environment in which banks operate (Fofack, 2005). These debates can only be resolved through objective, quantitative analysis of the determinants of banking sector interest rate spreads in developing countries. The prevailing margin between deposit-lending rates, the interest rate spreads (IRS) in an economy has important implications for the growth and development of such economy, as numerous authors suggest, a critical link between the efficiency of bank intermediation and economic growth. Quaden (2004), for example, argues that a more efficient banking system benefits the real economy by allowing 'higher expected returns for savers with a financial surplus, and lower borrowing costs for investing in new projects that need external finance. However, the results conflicted with the traditional signalling hypothesis in that despite intervention providing significant

information about future policy, most of the information came from interventions to sell the $ that were followed by tight monetary policy. Further, evidence showed that major movements in the exchange rates occurred after interventions depended on whether the interventions were consistent with future monetary policy.

<div align="center">**CHAPTER THREE**</div>

<div align="center">**RESEARCH METHODOLOGY**</div>

3.1 Introduction

This chapter discusses the methodology that was used in gathering, analyzing the data and reporting the results. It describes the type and source of data, the population and the sampling methods and techniques used to select the sample size. Further, it describes how data was collected and analyzed and concludes with the ethical issues deemed likely to influence the implementation of the study and how they were dealt with.

3.2 Research Design

This was a descriptive study where the researcher gathered data from the published accounts and financial statements from the nine listed commercial banks in Kenya (appendix I). The study employed both quantitative method through analysis of the financial statements using various models and ratios to provide predominantly quantitative data to the study. Quantitative data enabled for a more in-depth analysis of the research problem. The data to be used was accessed from the financial statements from the nine listed commercial banks in Kenya.

3.3 Population

According to Cooper and Schindler, (2000), population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions.

Population is defined as all the members of a real or hypothetical set of people, events or objects to which a researcher wishes to generalize the results of the research study (Borg and Gall, 1989). The population of interest in this study comprised all commercial banks. The total number of commercial banks is 43 as per the Central Bank of Kenya report 2012 (Appendix II).

3.4 Sampling

Sampling means selecting a given number of subjects from a defined population as representative of that population. Any statements made about the sample should also be true of the population (Orodho, 2002). Stratified random sampling is a procedure that is used to reduce chance variation between a sample and the population it represents (Cooper and Schindler, 2000). It is also considered as a fair way of selecting a sample from a given population since every member is given equal opportunities of being selected. Simple random sampling is its representativeness of the population. Systematic sampling relies on arranging the study population according to some ordering scheme and then selecting elements at regular intervals through that ordered list. Systematic sampling involves a random start and then proceeds with the selection of every kth element from then onwards. In this case, k=(population size/sample size). Systematic sampling technique was used to select the sample of 9 commercial banks

3.5 Data Collection

The study will use secondary data which was obtained from the company's published accounts, CBK and from the Nairobi stock on quarterly basis due to fluctuation of interest rates. Ratio analysis and various models were used to analyze the secondary data collected. The target data in this study was the CBK rate, financial statements and the profits made in each of the financial years under review.

3.6 Data Analysis

Data analysis involves organizing, accounting for and explaining the data; that is, making sense of the data in terms of respondents' definition of the situation noting patterns, themes, categories and regularities. After the data has been analyzed, a cross examination was done to ensure the trend and patterns of the various ratios and models used to enable for an accurate and complete interpretation (Mugenda and Mugenda, 2003). The data was thereafter analyzed using a statistical computer package, the SPSS. Qualitative statistical techniques were also used during the analysis. The researcher used non-parametric tests in the computation on correlation, frequencies, percentages, standard deviations, graphs and charts.

Empirical model for interest rates are Proposition (long run return to profitability): A central bank in an economy as described by the system of equations (1-9), absence of shocks, and initial values of inflation and key rates at their equilibrium levels of will always return to profitability and positive capital at a certain moment in time, regardless

of starting values, By substitution using the balance sheet identity, one obtains the profit function:

$P = i (B + C) + (i\ ri).Fq$,

Therefore, a higher capital means higher profits since it increases the size of the (cost-free) liability side. For given values of the other parameters, one may therefore calculate a critical value of central bank capital, which is needed to make the central bank profitable.

The data was analysed by use of descriptive statistics (e.g. mean score and standard deviation) and inferential statistics; Correlation and multiple regression

The model specification is as follows

$Y = \alpha + \beta_1 X_1 + \varepsilon$.

Where;

Profitability = ROA
Y = Profitability

X_1 = Interest Rates

ε = error term

β = coefficient

α = constant

CHAPTER FOUR

## DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data that was found on the role of central bank rate on commercial banks profitability in Kenya. The research was conducted on sample size of 20 commercial banks. The study made use of company's published financial statements and accounts to generate information on banks' profitability. The central bank rates were derived from CBK reports. The study considered financial reports for years 2007 to 2012. The findings were then presented in tables, graphs and charts as appropriate with explanations being given in prose thereafter.

4.2 Trends in CBK rates

The study initially reviewed the trends in CBK rates that guided banks operations for the period between years 2007 to 2012. The findings are as stipulated in table 4.1 below.

Figure 4.1 Trends in CBK rates for year 2007-2012
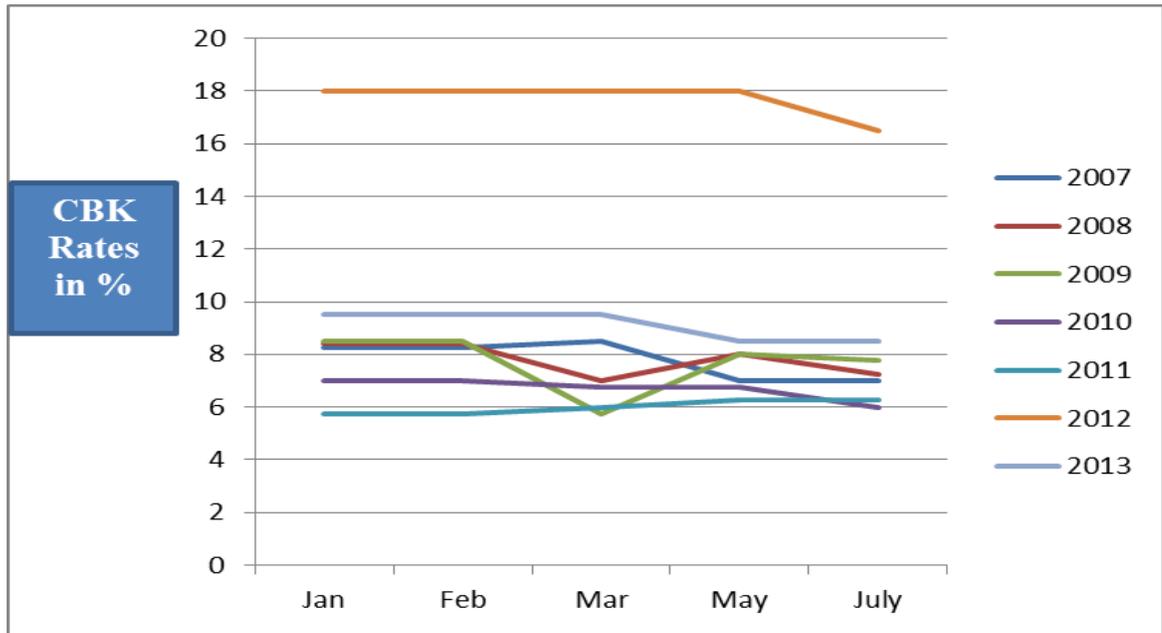
From the findings, there has been a continuous increase in CBK rates during the period between years 2007 to 2012. The increase in CBK rates has doubled over the reported period from 8.75% in 2007 to 18% in 2012. However the increase in CBK rates was not constant but was characterised by declines in CBK rates period between December 2008 where the CBK rates was at 8.5% to September 2011 when the CBK rates was at 7%. Since September 2007 to December 2012 there has been a continuous increase in CBK rates. This implies that the changes in CBK rates influences that profitability of the commercial banks in Kenya. The increase in CBK rates increases the lending rates of the banks which discourages borrowing from the banks by the customers and thus decline in profitability of the commercial banks as customers seek for alternative financial sources where the lending rates are low.

4.3 Growth in profitability of selected banks in Kenya

The study further reviewed the changes in the profits being reported by various major commercial banks in Kenya for the period 2007-2012. The findings are as shown in table 4.2 below.

Table 4.1 Growth in profit before tax for (in kshs Billions)

Year	Equity bank	BBK	Standard chartered	KCB	Cooperative Bank of Kenya	CFC Stanbic Bank Ltd	Bank Of Baroda	Diamond Trust Bank	K-rep Bank	Consolidated Bank Of Kenya	Family Bank
2007	2.4	7.1	4.9	5.2	2.32	0.7	0.55	1.06	-	0.07	0.43
2008	5.0	8.0	4.7	6.1	3.36	0.99	0.57	1.6	-	0.09	0.47
2009	5.3	9.0	6.7	6.4	3.74	1.1	0.62	1.93	-	0.12	0.51
2010	9.0	13.6	7.6	9.7	5.77	2.0	0.83	3.46	0.11	0.26	0.56
2011	12.8	12.0	8.2	15.1	6.36	2.79	0.68	4.3	0.26	0.25	0.61
2012	17.4	13.0	11.5	17.2	9.98	4.58	0.78	6	0.31	0.31	0.75

Table 4.2 Growth in profit before tax for (in kshs Billions)

Year	Dubai Bank Kenya Ltd	Bank Of India	Bank of Africa Kenya Ltd	Equatorial Commercial Bank Ltd	Chase Bank (K) ltd	Development Bank Of Kenya Ltd	Fidelity Commercial Bank Ltd	Fina Bank Ltd	Imperial Bank Ltd
2007	0.11	0.55	0.06	0.17	0.07	0.43	0.16	0.05	0.03
2008	0.12	0.57	0.12	0.19	0.09	0.47	0.17	0.06	0.07
2009	0.14	0.62	0.13	0.21	0.12	0.51	0.20	0.07	0.11
2010	0.3	0.83	0.16	0.23	0.26	0.56	0.21	0.08	0.16
2011	0.4	0.68	0.17	0.26	0.25	0.61	0.23	0.09	0.18
2012	0.5	0.78	0.16	0.31	0.31	0.75	0.28	0.11	0.23

According to the findings in Table 4.2, the major commercial banks in Kenya namely; Equity Bank, Barclays Bank of Kenya, Standard Charted, and Kenya commercial Bank, reported a continuous growth in profitability for the period between 2007 and 2012. However the growth in profitability was not high during when the CBK rates increased at very high proportion for the period between 2008-2010. The increase in profits for all the commercial banks reviewed increased tremendously between 2011 and 2012. Therefore the changes in CBK rates determined the growth in banks profitability as very drastic increase in CBK rates lead to slowed growth in banks profitability as banks readjusted to this regulation and invented ways of remaining competitive in the highly dynamic banking sector. This implies that the CBK rate was a critical factor that determined the profitability of the commercial banks in Kenya.

4.4 The role of central bank rate on commercial banks profitability in Kenya

In determining the role of central bank rate on commercial banks profitability in Kenya, the study conducted a multiple regression analysis to determine the nature of relationship between the variables.

The regression model specification were as follows

$Y = \alpha + \beta_1 X_1 + \varepsilon$.

Where;

Profitability = ROA
Y= Profitability

X_1= Interest Rates

ε= error term

β=coefficient

α= constant

4.4.1 Regression Analysis

The study further applied multiple regressions to determine the predictive power of the central bank rate on commercial banks profitability in Kenya. The researcher conducted a multiple regression analysis so as to test relationship among variable (independent) on the commercial banks profitability in Kenya. The researcher applied the statistical package

for social sciences (SPSS V 17.0) to code, enter and compute the measurements of the multiple regressions for the study.

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 (commercial banks profitability in Kenya) that is explained by the independent variable (central bank rate).

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.919	0.845	0.789	0.6273

The independent variable that was studied, explain only 84.5% of the commercial banks profitability in Kenya as represented by the R^2. This therefore means that other factors not studied in this research contribute 15.5% of the commercial banks profitability in Kenya. Therefore, further research should be conducted to investigate the other factors (15.5%) that affect commercial banks profitability in Kenya.

ANOVA Results

Table 4.4 ANOVA of the Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.534	50	1.267	9.475	.000[a]
	Residual	9.307	200	2.327		
	Total	**11.841**	**250**			

The significance value is 0.000 which is less than 0.05 thus the model is statistically significance in predicting how central bank rate affect the commercial banks profitability in Kenya. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant.

Table 4.5 Coefficient of determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.147	0.2235		5.132	0.000
	Central bank rate	0.752	0.1032	0.1032	7.287	.000

Multiple regression analysis was conducted as to determine the relationship between commercial banks profitability in Kenya and the one independent variable (central bank rate). As per the SPSS generated table below, regression equation

$(Y=\alpha+\beta_1 X_1 +\varepsilon)$ becomes:

$(Y= 1.147+ 0.752X_1+ \varepsilon)$

According to the regression equation established, taking all factors into account (central bank rate) constant at zero, commercial banks profitability in Kenya will be 1.147. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in central bank rate will lead to a 0.752 increase in commercial banks profitability in Kenya;

This infers that central bank rate contribute most to the commercial banks profitability in Kenya. At 5% level of significance and 95% level of confidence, central bank rate was significant, factor in predicting the commercial banks profitability in Kenya.

4.4.2 Correlation Analysis

The data presented before on CBK rates was computed into single variables per factor by obtaining the averages of each factor. Pearson's correlations analysis was then conducted at 95% confidence interval and 5% confidence level 2-tailed. The table below indicates the correlation matrix between the CBK rates and commercial banks profitability in Kenya. According to the table, there is a positive relationship between commercial banks profitability in Kenya and CBK rates of magnitude 0.894. The positive relationship

indicates that there is a correlation between the commercial banks profitability in Kenya with CBK rates.

Table 4.6 Correlation Matrix

	Commercial banks profitability in Kenya	CBK rate
Commercial banks profitability in Kenya (r) (p) Sig. (2 tailed)	1.000	
CBK rate (r) (p) (2 tailed)	0.894 0.018	1.000

This notwithstanding, all the factors had a significant p-value (p<0.05) at 95% confidence level. The significance values for relationship between commercial banks profitability in Kenya and CBK rate was 0.018. This implies that CBK rate was a significant factor on commercial banks profitability in Kenya.

4.5 Discussion in relation to Literature Review

The study established that there has been a drastic increase in CBK rates for the period between years 2007 to 2012. The increase in CBK rates doubled over the reported period from 8.75% in 2007 to 18% in 2012. However, the increase in CBK rates was not constant but was characterised by both upward and downward trends for the period between December 2008 when the CBK rates was at 8.5% and September 2011 when the CBK rates was at 7%.

The findings are corroborated by Kiprono, (2004) who established that central bank intervention does not actually calm volatility but instead it increases the volatility behaviour of exchange rates.

Since September 2007 to December 2012 there has been a continuous increase in CBK rates. Therefore the change in CBK rates influences that profitability of the commercial banks in Kenya. The increase in CBK rates increases the lending rates of the banks which discourage borrowing consequently leading to decline in profitability of the commercial banks as customers seek for alternative financial sources with low lending rates such as SACCOs. The findings are similar to Ngugi (2001) who analyzed the interest rates spread in Kenya from 1970 to 1999 and found that interest rate spread increased because of yet-to-be gained efficiency and high intermediation costs. The high non-performing assets are owing to poor business environment and distress borrowing, owing to the lack of alternative sourcing for credit when banks increased the lending rate, and the weak legal system in enforcement of financial contracts (Ngugi, 2001).

The study established that the major commercial banks in Kenya namely; Equity Bank, Barclays Bank of Kenya, Standard Charted, and Kenya commercial Bank, has witnessed a continuous growth in profitability for the period between 2007 and 2012. However the growth in profitability was not high during when the CBK rates increased at very high proportion for the period between 2008 and 2010. The growth in profitability for all the commercial banks studied was highest between 2011 and 2012. Therefore the changes in CBK rates determined the growth in commercial banks profitability as very drastic increase in CBK rates lead to slowed growth in banks' profitability as banks readjusted to

this regulation through inventing new ways of remaining competitive in the highly dynamic banking sector. Thus the CBK rate was a critical factor that determined the profitability of the commercial banks in Kenya.

The findings are in line with Gelos (2006) who studied the determinants of bank interest margins in Latin America using bank and country level data. He found that spreads are large because of relatively high interest rates (which in the study is a proxy for high macroeconomic risk, including from inflation), less efficient banks, and higher reserve requirements. Maudos et al (2004) who found that factors that explain interest margins are the competitive condition of the market, interest rate risk, credit risk, operating expenses, and bank risk aversion among others. Similarly Ngugi (2001) who found out that fiscal policy actions saw an increase in treasury bill rates and high inflationary pressure that called for tightening of monetary policy. As a result, banks increased their lending rates but were reluctant to reduce the lending rate when the treasury bill rate came down because of the declining income from assets. They responded by reducing the deposit rate, thus maintaining a wider margin as they left the lending rate at a higher level.

From the multiple regression analysis the study established that taking all factors (central bank rate) constant at zero, commercial banks profitability in Kenya will be 1.147. Similarly, taking all other independent variables at zero, a unit increase in central bank rate will lead to a 0.752 increase in commercial banks profitability in Kenya. Therefore, the central bank rate contributes significantly towards the commercial banks profitability in Kenya. At 5% level of significance and 95% level of confidence, central bank rate was

significant, factor in predicting the commercial banks profitability in Kenya. The findings are corroborated to Kiprono, (2004) who studied the relationship between cash flow and earnings performance measures for companies listed in the Nairobi Stock Exchange (NSE). He concluded that there is a positive or direct association between cash flows from operating activities and all the return performance indicators. The results also showed that there is a negative or indirect association between cash flow from financing and investing activities and returns performance indicators.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary, conclusion and recommendations of the study. The study focused on the role of central bank rate on commercial banks profitability in Kenya.

5.2 Summary

From the findings, the study established that there has been a drastic increase in CBK rates for the period between years 2007 to 2012. The increase in CBK rates doubled over the reported period from 8.75% in 2007 to 18% in 2012. However, the increase in CBK rates was not constant but was characterised by both upward and downward trends for the period between December 2008 when the CBK rates was at 8.5% and September 2011 when the CBK rates was at 7%.

Since September 2007 to December 2012 there has been a continuous increase in CBK rates. Therefore the change in CBK rates influences that profitability of the commercial banks in Kenya. The increase in CBK rates increases the lending rates of the banks which discourage borrowing consequently leading to decline in profitability of the commercial banks as customers seek for alternative financial sources with low lending rates such as SACCOs.

The study established that the major commercial banks in Kenya namely; Equity Bank, Barclays Bank of Kenya, Standard Charted, and Kenya commercial Bank, has witnessed

a continuous growth in profitability for the period between 2007 and 2012. However the growth in profitability was not high during when the CBK rates increased at very high proportion for the period between 2008 and 2010. The growth in profitability for all the commercial banks studied was highest between 2011 and 2012. Therefore the changes in CBK rates determined the growth in commercial banks profitability as very drastic increase in CBK rates lead to slowed growth in banks' profitability as banks readjusted to this regulation through inventing new ways of remaining competitive in the highly dynamic banking sector. Thus the CBK rate was a critical factor that determined the profitability of the commercial banks in Kenya.

From the multiple regression analysis where;

$(Y = \alpha + \beta_1 X_1 + \varepsilon)$ becomes:

$(Y = 1.147 + 0.752 X_1 + \varepsilon)$

The study established that taking all factors (central bank rate) constant at zero, commercial banks profitability in Kenya will be 1.147. Similarly, taking all other independent variables at zero, a unit increase in central bank rate will lead to a 0.752 increase in commercial banks profitability in Kenya. Therefore, the central bank rate contributes significantly towards the commercial banks profitability in Kenya. At 5% level of significance and 95% level of confidence, central bank rate was significant, factor in predicting the commercial banks profitability in Kenya.

5.3 Conclusion

The study concluded that there has been a drastic change in CBK rates for the period between years 2007 to 2012. The increase in CBK rates has doubled over the reported period between 2007 and 2012. Although there were both upward and downward trends of CBK rate the overall effect was an increase in the CBK rates.

Therefore the change in CBK rates influences the profitability of the commercial banks in Kenya. The increase in CBK rates increases the lending rates of the commercial banks which discourage borrowing consequently leading to decline in profitability of the commercial banks as customers seek for alternative financial sources with low lending rates such as SACCOs.

The study concluded that the major commercial banks in Kenya have had a continuous growth in profitability for the period between 2007 and 2012. However, the growth in profitability was not high during when the CBK rates increased at very high proportion between years 2008-2010. The growth in profitability for all the commercial banks studied was highest between 2011 and 2012. Therefore the changes in CBK rates determined the growth in commercial banks profitability as very drastic increase in CBK rates slowed the growth in banks' profitability as banks readjusted to this regulation through inventing new ways of remaining competitive in the highly dynamic banking sector. Thus the CBK rate was a critical factor that determined the profitability of the commercial banks in Kenya. Therefore, the central bank rate contributes significantly towards the commercial banks profitability in Kenya.

The central bank rate contributes significantly towards the commercial banks profitability in Kenya. Therefore, central bank rate was a significant factor in predicting the commercial banks profitability in Kenya.

The significance values for relationship between commercial banks profitability in Kenya and CBK rate was 0.018. This implies that CBK rate was a significant factor influencing commercial banks profitability in Kenya.

5.4 Recommendations

i. The study recommends that the management of commercial banks in Kenya should invent strategies that cushion the banks from drastic changes in central bank rate which hamper their attractiveness to its customers.

ii. The study recommends that the government through the management of central bank should regulate the central bank rate to avoid very high increment in central bank rate.

iii. The study also recommends that the banks management should invest in economic research to predict the changes in the economy so as to be well prepared for the changing trends in the market that negatively impact on the banks profitability.

iv. The study further recommends that the players in the banking sector should lobby the government against raising the central bank rates.

5.5 Limitation of the Study

This study encountered the following limitations; the limitation of time and financial constraint, which made has concentrate on a very narrow aspect of interest rates. In addition we could not carry an in-depth analysis of the data collected. The fact that interest rates are dynamic in nature and tend to fluctuate when other variables are introduced. As such, our research findings are subject to frequent alterations as well as different opinions.

One of the limiting factors was the time to carry out research especially could use of longer period to capture the role of central bank rate on commercial banks profitability in Kenya. an empirical assessment of Kenya firms.

Another difficulty has to do with interpreting the results. Interpretations are more difficult in the context of international standards than from domestic perspective because the number of confounding factors multiplies when moving out of a strictly domestic setting.

5.6 Suggestions for further studies

Since this study was on the the role of central bank rate on commercial banks profitability in Kenya, the study recommends that;

i.   Similar study should be done in other financial institutions for comparison purposes and to allow for generalization of findings on the role of central bank rate on profitability of financial institutions in Kenya.

ii.   Other research should be done on other factors influencing bank profitability.

REFERENCES

Aboagye, A.Q.Q., S.K. Akoena, T.O. Antwi-Asare and Gockel A.F. (2008). Explaining Interest Rate Spreads in Ghana, African Development Review.

Afanasieff, T. S., Lhacer, P. M. V. and Nakane, M. I. (2002). *The Determinants of Bank Interest Spreads in Brazil*, Banco Central do Brasil Working Paper.

Ahokpossi, C. (2013). *Determinants of Bank Interest Margins in Sub-Saharan Africa,* IMF Working Paper WP/13/34.Washington D.C.: International Monetary Fund.

Allen L. O (1988). The Determinants of Bank Interest Margins: A Note, *Journal of Financial and Quantitative Analysis.*

Andrew K. M., (2005), *The Role of Central Banks in Macroeconomic Stability, Growth and Poverty:* Have We Won the Battle But Not the War

Angbanzo, L., (1997). Commercial Bank Net Interest Margins, Default Risk, Interest-Rate Risk and Off-Balance Sheet Banking. *Journal of Banking and Finance..*

Asian Development Bank, (2001). *Financial Sector Development in the Pacific Developing Member Countries.* Manila: Asian Development Bank.

Banco Central do Brasil., (1999). Jurose Spread Bancario no Brasil. In Crowley J. *Interest Rate Spreads In English-Speaking Africa*. IMF Working Paper, April

Beck, T and Hesse, H (2006). *Bank Efficiency, Ownership and Market Structure:* Why Are Interest Spreads So High in Uganda? World Bank Policy Research Working Paper 4027, October.

Beck, T., Cull, R., Fuchs, M., Getenga, J., Gatere, P., Randa, J and Trandafir, M. (2010). Banking Sector Stability, Efficiency and Outreach in Kenya, *World Bank Policy Research Working Paper 5442*, October. Washington D.C.: The World Bank.

Ben-Khedhiri H., B. Casu and F. Sheik-Rahim (2005). *Profitability and Interest Rates Differentials in Tunisian Banking.* University of Wales Working Papers.

Bennaceur, S and Goaied, M (2008*). The Determinants of Commercial Bank Interest Margin and Profitability:* Evidence from Tunisia, Frontiers in Finance and Economics.

Bercoff, J.J., Giovanni, J., and Grimard, F., (2002). *Argentinean Banks, Credit Growth and The Tequila Crisis:* A Duration Analysis.

Boudriga, A, Boulila, N, and Jellouli, S., (2009). *Does Bank Supervision Impact Nonperforming Loans: Cross-Country Determinants Using Aggregate Data.* Unpublished Manuscript.

Caprio, J., and Klingebiel, D., (2002). Episodes of Systemic and Borderline Financial Crises. In Daniela Klingebiel and Luc Laeven (Eds.) *Managing the real and fiscal effect of banking crisis*. Washington, DC:

Central Bank of Kenya (CBK)., (2009). Bank Supervision Annual Report 2008. Also accessed from www.cbk.co.ke on 31/02/2010

Chand,S., (2002). Financial Sector Development and Economic Growth in Pacific Island Countries. *Pacific Economic Bulletin.*

Crowley, J., 2007). Interest Rate Spreads in English-Speaking Africa. *IMF Working Paper.*

Daumont, R., Gall, F., and Leroux, F., (2004). Banking in Sub- Saharan Africa: What went wrong? *IMF Working Paper*

Demirguc-Kunt, A., Laeven, L., and Levine, R., (2003). *The Impact of Bank Regulations, Concentration and Institutions on Bank Margins*. Mimeo.

Demirguc-Kunt, A., and Huizinga, H., (1997). *Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence*. Washington,

D.C: World Bank Policy Research Working Paper No. 1900.

Disyatat P. and P. Vongsinsirikul, (2003), Monetary Policy and Transmission Mechanism in Thailand, *Journal of Asian Economics,* 14: 389-418

Dornbusch, R. (1976). Expectations and Exchange Rate Dynamics. *Journal of Political Economy*.

Dwyer G.P. and Hafer. R.W. (2000). Is Money Irrelevant? Federal Reserve Bank of St. Louis *Review* (May/June): 3–17.

Edwards, F., and Mishkin, S, (1995). *The Decline of Traditional Banking: Implications for Financial Stability and Regulatory Policy,* Federal Reserve Bank of New York Economic Policy Review.

Eggertsson, G. and Woodford, M. (2003), The Zero Bound on Interest Rates and Optimal Monetary Policy, *Brookings Papers on Economic Activity*.

Els, P., A. Locarno, J. Morgan and J.P. Viletelle, (2003), The effects of Monetary Policy in Euro Area: evidence from structural macroeconomic models in Monetary Policy Transmission in Euro Area, Angeloni Ignazio, Anil K. Kashyap and Benoit Mojon (eds), Cambridge University Press.

Emmanuelle, N.Y.S., 2003. *A European Study Of Bank Interest Margins: Is Net Fees Revenue A Determinant.* Doctoral Thesis. United Kingdom, U.K: University of Birmingham

Estrella, A. and F. S. Mishkin (2005): .Is there a role for monetary aggregates for the conduct of monetary policy?,. *Journal of Monetary Economics*

Favero Carlo A., (2001) Applied Macro-econometrics, Oxford University Press

Fischer, B., M. Lenza, H. Pill, and L. Reichlin (2008): Money and Monetary Policy: The ECB Experience 2006-2006,. in The Role of Money and Monetary Policy in the Twenty-First Century, ed. by A. Beyer, and L. Reichlin, pp. 102.175.

Fofack, H., 2005. Non-Performing Loans in sub-Saharan Africa: Causal Analysis and Macroeconomic Implications. *World Bank Policy Research Working Paper No. 3769,* 134-154.

Gelos, G. (2006). Banking Spreads in Latin America, *IMF Working Paper* 06/44.

Goldstein, M., and Turner, P., (1996). Banking Crises in Emerging Economies: Origins and Policy Options. Basel: Bank for International Settlements. *BIS Economic Paper.*

Hanish C. L (2005) The Irrationality of Rational Expectations - An Exploration into Economic Fallacy. 1st Edition, Warwick University Press, UK.

Ho, T., Saunders, A., (1981), The determinants of bank interest margins: Theory and empirical evidence, Journal of Financial Economics

Jayaraman, T.K., and Sharma, R., (2003). Why is Interest Rate Spread High in Fiji? Results from a Preliminary Study. *Fijian Studies.*

Jensen, M. C., and Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics.*

Keeton, W.R., (1999). Does Faster Loan Growth Lead To Higher Loan Losses? Federal Reserve Bank of Kansas City, *Economic Review,* Second Quarter.

Kiprono D.K (2004). Relationship between cash flow and earnings performance measures for companies listed on Nairobi Stock Exchange. *Unpublished MBA Management Research Paper, University of Nairobi.*

McNulty, J., Akhigbe, A., and Verbrugge, J., (2001). Small bank loan quality in a deregulated Environment: The Information Advantage Hypothesis. *Journal of Economics and Business.*

Mugenda, O.M., and Mugenda, A.G. (2003). *Research Methods: Quantitative and Qualitative Approaches.* Acts Press. Nairobi. Kenya.

Muth J, F. (1961). Rational Expectations and the Theory of Price Movements. reprinted in *The new classical macroeconomics. Volume 1.*

Ngugi, R.W., 2001. *An Empirical Analysis of Interest Rate Spread in Kenya. African Economic Research Consortium*, Research Paper 106

Njuguna, S.N., and Ngugi R.W., (2000). Banking Sector Interest Rate Spread in Kenya. Macroeconomic and Economicetric Modeling. *Kenya Institute for Public Policy Research and Analysis (KIPPRA) Discussion Paper No 5.*

Rhyne, E., (2002). The Yin and Yang of Microfinance: Reaching the Poor and Sustainability. *Microbanking Bulletin.*

Salas, V. and Saurina J., (2002). Credit Risk in Two Institutional Regimes: Spanish Commercial and Savings Banks. *Journal of Financial Services Research,* 22(3) 203-224.

Sinkey, J.F., and Greenwalt M.B., (1991). Loan-loss experience and risk-taking behavior at large commercial banks. *Journal of Financial Services Research..*

Waweru, N.M., and Kalani, V.M., (2009). Commercial Banking Crises in Kenya: Causes and Remedies. *Global Journal of Finance and Banking Issues.*

Woodford, Michael (2003), *Interest and Prices. Foundations of a Theory of Monetary Policy,* Princeton and Oxford: Princeton University Press.

APPENDIX I: COMMERCIAL BANKS IN KENYA

1) African Banking Corporation Ltd

2) Bank of Africa Kenya Ltd

3) Bank of India

4) Barclays Bank of Kenya Ltd

5) Bank of Baroda (K) Ltd

6) CFC Stanbic Bank Ltd

7) Citibank N.A Kenya

8) Charterhouse Bank Ltd

9) Chase Bank (K) ltd

10) Commercial Bank of Africa Ltd

11) Co-operative Bank of Kenya Ltd

12) Consolidated Bank of Kenya Ltd

13) Credit Bank Ltd

14) Diamond Trust Bank Kenya Ltd

15) Development Bank Of Kenya Ltd

16) Dubai Bank Kenya Ltd

17) Ecobank Kenya Ltd

18) Equity Bank Ltd

19) Equatorial Commercial Bank Ltd

20) Family Bank Limited

21) Fidelity Commercial Bank Ltd

22) Fina Bank Ltd

23) First Community Bank Ltd

24) Giro Commercial Bank Ltd

25) Guardian Commercial Ltd

26) Gulf African Bank Ltd

27) Habib Bank A.G Zurich

28) Habib Bank Ltd

29) Imperial Bank Ltd

30) I and M Bank Ltd

31) Jamii Bora Bank Ltd

32) Kenya Commercial Bank Ltd

33) K-Rep Bank (K) Ltd

34) Middle East Bank (K) Ltd

35) National Bank of Kenya Ltd

36) NIC Bank Ltd

37) Oriental Commercial Bank Ltd

38) Paramount Universal Bank Ltd

39) Prime Bank Ltd

40) Standard Chartered Bank of Kenya Ltd

41) Trans-National Bank Ltd

42) UAB Kenya Bank Ltd

43) Victoria Commercial Bank Ltd

SOURCE: CBK REPORT DECEMBER 2012

APPENDIX II: TRENDS IN CBK RATES FOR YEAR 2007-2012

Period of Year	CBK Rate in percentage (%)
May, 2013	8.5
Mar, 2013	9.5
Jan, 2013	9.5
Nov, 2012	11
Sep, 2012	13
Jul, 2012	16.5
Jun, 2012	18
May, 2012	18
Apr, 2012	18
Mar, 2012	18
Feb, 2012	18
Jan, 2012	18
Dec, 2011	18
Nov, 2011	16.5
Oct, 2011	11
Sep, 2011	7
Jul, 2011	6.25
May, 2011	6.25
Mar, 2011	6
Jan, 2011	5.75
Nov, 2010	6
Sep, 2010	6.75
Jul, 2010	6
May, 2010	6.75
Mar, 2010	6.75
Jan, 2010	7
Nov, 2009	7
Sep, 2009	7.75
Jul, 2009	7.75
May, 2009	8
Mar, 2009	8.25
Jan, 2009	8.5
Dec, 2008	8.5
Oct, 2008	9
Sep, 2008	9

Aug, 2008	9
Jun, 2008	9
Aug, 2007	8.75
Jun, 2007	8.5
Aug, 2006	10
Jun, 2006	9.75

SOURCE: CBK REPORT DECEMBER 2012