THE EFFECT OF MONETARY POLICY ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY:

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DECLARATION

I declare that this research project is my original work and has not been presented for examination in any other university of higher learning.

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This Research Project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

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TABLE OF CONTENT

LIST OF ABBREVIATIONS

AVECM	:	Asymmetric Vector Correction Model
ANOVA	:	Analysis of Variance
CBK	:	Central Bank of Kenya
CBR	:	Central Bank Rate
CRR	:	Cash Reserve Requirement
GDP	:	Gross Domestic Product
OMO	:	Open Market Operations
ROA	:	Return on Assets
ROCE	:	Return On Capital Employed
ROE	:	Return On Capital
POLS	:	Pooled Ordinary Least Square
SLR	:	Statutory Liquidity Requirement
SPSS	:	Statistical Package for Social Studies
U.S.A	:	United States of America
U.K	:	United Kingdom

LIST OF TABLES

ABSTRACT

Monetary policy is one of the principal economic management tools that the government uses to shape economic performance. The government through the Central Bank uses monetary policy tools like open market operations, central bank rate and cash reserve ratio for commercial banks with the objective of managing multiple monetary targets among them price stability, promotion of growth, achieving full employment, smoothing the business cycle, preventing financial crises, stabilizing long-term interest rates and the real exchange rate. Commercial banks act as a mediator for the Central Bank in implementing these tools and hence the basis for this study. This study was carried out with the following objectives; to establish the effect of Central Bank's open market operations on the financial performance of Commercial Banks; to establish the effect of Central Bank Rate (CBR) on the financial performance of Commercial Banks and to establish the effect of Reserve Ratio Requirement on the financial performance of Commercial Banks. The study adopted descriptive research design. The target population of this study was commercial banks operating in Kenya and regulated by the Central Bank of Kenya as at 31st December 2014. For the purpose of this study, only secondary data was used. The secondary data was sourced from the Financial Statements of the commercial Banks that are available from their websites and Central Bank of Kenya Publications. Data was collected for a period of five years from 2010 to 2014. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 16. The study then used descriptive statistics and inferential statistics to establish the relationship between monetary policies tools and the financial performance of commercial banks in Kenya. The study used Net Interest Margin as the measure for financial performance for the banks. The results showed that the model explained 17.7% of the variance in financial performance of commercial banks as given by the value of R^2. The model was also fit to explain the relationship as the *F*-Statistic of 5.581 was significant at 5% level, p=0.000. The study established that monetary policy tools as represented by open market operation β=0.506, p=0.608, CBR, β=-0.221, p=0.687, and cash reserve ratio, β=-4.349, p=0.622, have no significant effect on the financial performance of commercial banks in Kenya. Bank size was however found to have a weak positive effect, $\beta = 0.009$, $p < 0.0$, on financial performance of commercial banks in Kenya. The study concludes that monetary policy tools employed by the central bank of Kenya do not have a significant effect on the financial performance of commercial banks in Kenya. The study therefore recommends that commercial banks need to focus more on the internal factors that affect financial performance of commercial banks as have been identified in other studies. The study further recommends that commercial banks should focus on monetary policy changes to the extent of complying with the Central Bank guidelines and adjusting their variables accordingly. This is a matter of management efficiency.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

According to the Central Bank of Kenya, A commercial bank means a company which carries on, or proposes to carry on, banking business in Kenya and includes the Co-operative Bank of Kenya Limited but does not include the Central Bank of Kenya (CBK). Commercial banks in Kenya are licensed, supervised and regulated by the Central Bank of Kenya (CBK) as mandated under the Banking Act (Cap 488).

The environment in which commercial banks operate is constantly changing with different factors influencing their operations and hence performance. Since the turn of the millennium, the general business environment has become more volatile, unpredictable and very competitive, Pearce and Robinson (2005). Coping with the increasingly competitive environment has called on commercial banks to rethink their strategies. Commercial Banks must realize that their services and products, regardless of how good they are, will not simply guarantee good financial performance.

Recent trends in technology, financial innovations and globalization are certainly posing new challenges for market participants in the Kenyan financial sector. To this extent, advances in computer technology and telecommunications are expanding the frontiers of electronic banking and internet based financial services. In addition, local banks have continuously sought to establish branches in other East African countries. This leads to

the banks been exposed to different environments in terms of regulations, market size, markets rates, etc which are country-specific. All those developments would surely have implications on the costs and revenues and hence the profitability of the commercial banks in the Kenyan banking industry.

During the 2015/16 Budget presentation by the Kenyan Cabinet Secretary to the National Treasury and the subsequent Finance Bill, Commercial Banks in Kenya have been given up to 2018 to increase their minimum core capital to KES 5 Billion from the current requirement of KES 2 billion. The Central Bank of Kenya through it Monetary Policy Committee has raised the Central Bank Rate in two consecutive meetings.

The understanding of the monetary policies in the home country and also the country of operation by the commercial bank would not only be useful for sustaining high profitability but would also be essential for the survival of these commercial banks by enabling them to hedge against the adversities of external shocks.

1.1.1 Monetary Policy in Kenya

The first decade after independence can be characterized as passive in the conduct of monetary policy in Kenya, mainly because no intervention was necessary in an environment of 8% GDP growth and below 2% inflation rate (Kinyua, 2001). The first major macroeconomic imbalance arose in the second decade in the form of 1973 oil crisis and the coffee boom of 1977/78. This came at a time when the fixed exchange rate system had just collapsed with the Britton Woods System in 1971. In these first two

decades, monetary policy was conducted through direct tools which were cash reserve ratio, liquidity ratio, credit ceilings for commercial banks, and interest rate controls.

The 1990s brought about the liberalization of the economy where interest rate controls were removed and exchange rate made flexible, ushering in a new era in monetary policy where open market operations (OMO) was the main tool. This was a period characterized by high interest rates and widening interest spread, which inhibited the benefits of flexible interest rate policy such as increasing financial savings and reducing cost of capital. Competing against double digit inflation rate spurred on by excessive money supply and accommodation of troubled banks, CBK used indirect tools to tame inflation in an atmosphere of instability and extreme uncertainty. In 1996, the CBK Act was amended and this allowed the CBK to shift from targeting broad money to targeting broader money as the principal concept of money stock, (Kinyua, 2001).

The CBK operates under a monetary policy programming framework that includes monetary aggregates (liquidity and credit) targets that are consistent with a given level of inflation and economic growth. According to the Monetary Policy Statement (2014), overall month-on-month inflation remained within the Government target bounds during the second half of 2014 except in July and August 2014. This reflected the success of the monetary policy stance adopted by the Monetary Policy Committee (MPC) in the period. Specifically, overall inflation rose from 7.39 percent in June 2014 to 8.36 percent in August 2014 mainly reflecting increases in the prices of energy and most foodstuffs. However, it declined gradually thereafter to 6.02 percent in December 2014 mainly

reflecting the indulgence of the base effect attributed to the implementation of the VAT Act in September 2013 and decreases in prices of energy and some food items. The 12-month non-food-non-fuel inflation, which measures the impact of monetary policy, remained stable below the 5 percent target in the second half of 2014 indicating that there was no significant demand driven inflationary pressure or threat to the economy. The threat of imported inflation was dampened by the significant decline in international oil prices during the period.

Despite the temporary pressures on most international currencies reflecting the global strengthening of the US Dollar, the exchange rate of the Kenya Shilling against the US Dollar maintained its stable trend during the year 2014. The Kenya Shilling strengthened, on average, against the other major international currencies and regional currencies. The strengthening of the US Dollar partly reflects the strong performance of the US economy and changing expectations on the timing of the first US interest rate increase coupled with weak growth in the Eurozone. The Kenya Shilling continued to be supported by the resilient foreign exchange inflows through diaspora remittances, increased net purchases of equity by foreign investors in the Nairobi Securities Exchange (NSE), and sustained confidence in the economy reflected in the massive over-subscription of the Sovereign Bond that was re-opened on tap in December 2014. Interventions by the Central Bank of Kenya (CBK) through direct sales of foreign exchange to commercial banks stopped short-term volatility in the period.

The movements in short-term rates were generally aligned to the Central Bank Rate (CBR) while Open Market Operations continued to support liquidity management during the period. The MPC retained the CBR at 8.50 percent in the second half of 2014 to continue anchoring inflationary expectations and maintain the desired price stability objective.

1.1.2 Financial Performance

Financial performance measurement generally looks at firms' financial ratios (derived from their financial statements) such as liquidity ratios, activity ratios, profitability ratios, and debt ratios. The financial performance of commercial banks is measured through its profitability. There are various profitability measures that are used to measure the performance of commercial banks such as the Net Interest Margin (NIM), the Return on Assets (ROA) and the Return on Equity (ROE).

The Net Interest Margin is a measure of the difference between the interest income generated by banks from their loans and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their (interest-earning) assets. It is usually expressed as a percentage of what the financial institution earns on loans in a specific time period and other assets minus the interest paid on borrowed funds divided by the average amount of the assets on which it earned income in that time period (the average earning assets). The NIM variable is defined as the net interest income divided by total earnings assets (Gul et. al., 2011).

Net interest margin measures the gap between the interest income the bank receives on loans and securities and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. Thus, it is one of the key measures of bank profitability. However, a higher net interest margin could reflect riskier lending practices associated with substantial loan loss provisions (Khrawish, 2011).

The Return on Equity (ROE) is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. It is further explained by Khrawish (2011) that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. It represents the rate of return earned on the funds invested in the bank by its stockholders. ROE reflects how effectively a bank management is using shareholders' funds. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital.

The Return on Assets (ROA) is another financial ratio that refers to the profitability of a firm. It is a ratio of Income to its Total Assets (Khrawish, 2011). It measures the ability of the firm management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to

generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). Wen (2010), state that a higher ROA shows that the company is more efficient in using its resources.

1.1.3 Effect of Monetary Policy on Financial Performance

The overall aim of the Monetary Policy is to set monetary policy targets that would ensure low and stable inflation, encourage growth, support long-term sustainability of public debt through stable interest rates and, by enhancing financial access within the economy, contribute to lowering the cost of doing business (MPS, 2014).

The CBK through, through Open Market Operations, purchases and sales of eligible securities to regulate the money supply and the credit conditions in the economy. OMO can also be used to stabilise short-term interest rates. When the Central Bank buys securities on the open market, it increases the reserves of Commercial banks, making it possible for them to expand their loans which increase the money supply. This thus means Commercial Banks can expand their loan book and thus increase in their profits.

The CBR is the lowest rate of interest charged on loans to commercial banks by the CBK. The level of the CBR is reviewed and announced by the Monetary Policy Committee (MPC) at least every two months and its movements, both in direction and magnitude, signal the monetary policy stance. An increase in the CBR signals an increase in the banks' lending rates hence a tightening of the banks' loan books. This is expected to reduce the banks' profitability.

The CRR is the proportion of a commercial bank's deposit liability which must be deposited at CBK. These deposits are held in the CRR Account at no interest. A reduction in the CRR releases liquidity thus enhancing the capacity of commercial banks to expand credit. This then is expected to increase interest income to the banks and hence increased profitability. An increase in the CRR tightens liquidity and could also dampen demand-driven inflationary pressures.

1.1.4 Commercial Banks in Kenya

The Companies Act, the Banking Act, the Central Bank of Kenya Act, the Kenya Bankers Association and the various guidelines issued by the Central Bank of Kenya (CBK), governs the Banking industry in Kenya. The banking sector in Kenya was liberalized in 1995 and exchange controls lifted. The CBK, which falls under the Cabinet Secretary to the National Treasury docket, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. The Central Bank of Kenya acts as the main regulator of commercial banks in Kenya (CBK Annual Report, 2014).

The banking industry in Kenya is composed of 43 Commercial Banks with 10 of them listed at the Nairobi Securities Exchange, 24 being locally owned and 4 being foreign owned. The banks have come together under the Kenya Bankers Association (KBA), which serves as a lobby for the banks' interests and addresses issues affecting member institutions. The commercial banks offer corporate and retail banking services with of

late most of the banks starting to offer other services including investment banking and insurance products.

The banking sector plays a significant role in the implementation of government monetary policy. One of the key services rendered by banks is offering credit to the members of public. The rate at which members of the public are able to access loans and the amounts available for banks to lend, are highly guided by the CBK regulations. The banks also participate in purchase of government securities for example treasury bills and bonds which are aimed at raising funds for the government and maintaining low inflation levels. CBK also acts as a lender of last resort for commercial banks and hence the rate at which banks access credit influences the rate at which they offer credit to the members of the public.

1.2 Research Problem

Monetary policy is one of the principal economic management tools that governments use to shape economic performance. Measured against fiscal policy, monetary policy is said to be quicker at resolving economic shocks. Monetary policy objectives are concerned with the management of multiple monetary targets among them price stability, promotion of growth, achieving full employment, smoothing the business cycle, preventing financial crises, stabilizing long-term interest rates and the real exchange rate. Experience shows that emphasis is usually placed on maintaining price stability or ensuring low inflation rates.

The Central Bank of Kenya is responsible for the recommendation and implementation of monetary policy tools in Kenya. The CBK recommends the CRR, CBR and Treasury bill rates. Those tools are implemented through commercial banks and they are aimed at stabilizing the price levels in the economy. The use of cash reserve ratio affects the level of liquidity in the commercial banks. When commercial banks are faced with limited liquidity, they turn to other commercial banks for inter-bank borrowing. Those funds are borrowed at the CBR and it is usually very high, which affects the interest expense for the borrowing bank and the interest income for the lending bank. The other way to increase liquidity in the bank will be to borrow by floating a debt instrument. The rate offered for the debt instrument is also tied to the treasury bills or treasury bonds issued by the government through the Central Bank. These effects of the monetary tools are expected to have an effect on the financial performance of commercial banks.

Several research studies have been done in relation to commercial banks in Kenya: Gitonga (2010) studied the relationship between interest rate risk management and profitability of commercial banks in Kenya; Kimoro (2010) did a survey of the foreign exchange reserves risk management strategies adopted by the Central Bank of Kenya and Mbotu (2010) did a study on the impact of the Central Bank of Kenya rate (CBR) on commercial banks' benchmark lending interest rates. Ongore and Kusa (2013) study examined the effects of bank specific factors and macroeconomic factors on the performance of commercial banks in Kenya during the period from 2001 to 2010. Kiganda (2014) carried out a study on effect of macroeconomic factors on the profitability of commercial banks in Kenya with a focus on Equity Bank.

This study has identified a gap in the current literature and research with respect to monetary policy and its effect on financial performance of commercial banks. The literature reveals that while there is much effort by the government to influence the money supply by instituting various policy tools, an analysis on the effects of those tools on Commercial Banks' financial performance, which are the most used channel of transmission of the policies, is inconclusive. This study will therefore be motivated to fill the knowledge gap on effects of the various monetary policy tools on financial performance of commercial banks in Kenya with firm size as the control variable. The following research question will therefore be explored: What is the effect of monetary policy on the financial performance of commercial banks in Kenya?

1.3 Objectives of the study

The general objective of the study is to determine the effect of monetary policy and the financial performance of Commercial Banks in Kenya.

The specific objectives are as follows:

i. To establish the effect of Central Bank's open market operations on the financial performance of Commercial Banks.
ii. To establish the effect of Central Bank Rate (CBR) on the financial performance of Commercial Banks.
iii. To establish the effect of Reserve Ratio Requirement on the financial performance of Commercial Banks.

1.5 Value of the study

While this study may be of value to any person interested in monetary policies, it is anticipated that its findings will specifically benefit the following groups of people.

Investors will be in a position to utilize the research findings and recommendations from the study to forecast the financial performance of Commercial Banks and rebalance their portfolios accordingly given the changes in monetary policy tools.

The study is expected to contribute to the existing literature in the field of monetary policies. Future scholars can use this research as a basis for further research in the area of monetary policy theories.

The study will also enlighten management teams of commercial bank on the short-term and long-term effects of the monetary policy implementations by the Central Bank. This will greatly help them in designing the risk management measures to employ given anticipated changes in monetary policies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews various theories that inform economic development and their macroeconomic effects, seeks to locate the place of our focus subject and its relevance to the finance discipline. A critical review of empirical studies is undertaken and an effort to evaluate contributions is made and pertinent knowledge gaps identified.

2.2 Theoretical Review

A number of macroeconomic theories have been developed over the decades. They are often aimed at addressing pressing economic problems of the day. The pressing economic problems tend to be unemployment, inflation or stagnant economic growth; most macroeconomic theories make a concentrated effort to shed light on these issues.

2.2.1 Classical Economics.

Smith (1776), in his book ‘Wealth of Nations’ was the beginning of classical economics. Smith argued that if everyone did what was best for themselves, the result would be best for society. Before that, economics was about the king's personal interests, and the wealth of a nation was measured by the king's treasury. Smith said what's important is what's best for the whole nation, and that wealth should be measured by the yearly income of the nation. He wanted to discover how wealth can grow, and how people could do things to

support that growth. Smith observed that land, labor, and capital were the three "factors of production" and the main contributors to a nation's wealth.

The classical economists based their predictions about full employment on a principle known as Say's Law. According to Say's Law, "Supply creates its own demand." In other words, in the process of producing output, businesses also create enough income to ensure that all the output will be sold. Prices naturally adjust to having more or less of something: supply and demand. If there is too much of something (more supply), prices go down so that people have more reason to buy it. If a lot of people want something (high demand), there may not be enough of it (scarcity); there will be a competition among the people who want to buy it, and some people will agree to pay more to get what they want, and prices go up. The primary policy implication is that government intervention is not needed to maintain economic stability.

2.2.2 Keynesian Economics.

Keynes (1936) argued that the solution to the Great Depression was to stimulate the economy ("inducement to invest") through some combination of two approaches: a reduction in interest rates and government investment in infrastructure. Investment by government injects income, which results in more spending in the general economy, which in turn stimulates more production and investment involving still more income and spending. The initial stimulation starts a cascade of events, whose total increase in economic activity is a multiple of the original investment.

Keynes argued capitalism was a good economic system. In a capitalist system, people earn money from their work. Businesses employ and pay people to work. Then people can spend their money on things they want. Other people work and make things to buy. Sometimes the capitalist system has problems; people lose their work, businesses close, people cannot work and cannot spend money. Keynes recommended that the government should step in and help people who do not have work.

This idea is called "demand-side policy". If people are working, the economy is good. If people are not working, the economy is bad. Keynes said when the economy is bad, people want to save their money. That is, they do not spend their money on things they want. As a result, there is less economic activity. Keynes said the government should spend more money when people do not have work. The government can borrow money and give people jobs (work). Then people can spend money again and buy things. This helps other people find work.

Some people, such as conservatives, libertarians, and people who believe in Austrian economics, do not agree with Keynes' ideas. They say government work does not help capitalism. They say when the government borrows money, it takes money away from businesses. They do not like Keynesian economics because they believe the economy can get better without government help.

During the late 1970s, Keynesian economics became less popular because inflation was high at the same time that unemployment was high. This is because many people interpreted Keynesian theory to mean that it was impossible for there to be both high

inflation and high unemployment. When a big recession happened in 2007, Keynesian economics became more popular. Leaders around the world created stimulus packages which would allow their government to spend a lot of money to create jobs. The primary policy implication is that economic instability runs rampant without government intervention.

2.2.3 Monetarism:

Championed by Nobel Prize winner Friedman (1963), monetarism is a macroeconomic school of thought that emphasizes on long-run monetary neutrality, short-run monetary non-neutrality, the distinction between real and nominal interest rates, and the role of monetary aggregates in policy analysis.

An economy possesses basic long-run monetary neutrality if an increase of *Z* percent in its stock of money would ultimately be followed, after all adjustments have taken place, by a *Z* percent increase in the general price level, with no effects on real variables (e.g., consumption, output, relative prices of individual commodities). While most economists believe that long-run neutrality is a feature of actual market economies, at least approximately, no other group of macroeconomists emphasizes this proposition as strongly as do monetarists.

Short-run monetary non-neutrality is obtained, in an economy with long-run monetary neutrality, if the price adjustments to a change in money take place only gradually, so that there are temporary effects on real output (GDP) and employment.

Real interest rates are ordinary ("nominal") interest rates adjusted to take account of expected inflation as rational, optimizing people would do when they make trade-offs between present and future. However, the distinction was often neglected in macroeconomic analysis until monetarists began insisting on its importance during the 1950s.

While some disagreement remains, certain things are clear. Interestingly, most of the changes to Keynesian thinking that early monetarists proposed are accepted today as part of standard macro/monetary analysis. After all, the main proposed changes were to distinguish carefully between real and nominal variables, to distinguish between real and nominal interest rates, and to deny the existence of a long-run trade-off between inflation and unemployment. Also, most research economists today accept, at least tacitly, the proposition that monetary policy is more potent and useful than fiscal policy for stabilizing the economy. There is some academic support, and a bit in central bank circles, for the real-business-cycle suggestion that monetary policy has no important effect on real variables, but this idea probably has marginal significance.

2.2.4 New Keynesian Economics.

New Keynesian economics is the school of thought in modern macroeconomics that evolved from the ideas of Keynes (1936). In the 1970s, however, new classical economists such as Robert Lucas, Thomas J. Sargent, and Robert Barro called into question many of the precepts of the Keynesian revolution. The label New Keynesian

describes those economists who, in the 1980s, responded to this new classical critique with adjustments to the original Keynesian tenets.

The primary disagreement between new classical and new Keynesian economists is over how quickly wages and prices adjust. New classical economists build their macroeconomic theories on the assumption that wages and prices are flexible. They believe that prices "clear" markets by adjusting quickly. New Keynesian economists, however, believe that market-clearing models cannot explain short-run economic fluctuations, and so they advocate models with "sticky" wages and prices. New Keynesian theories rely on this stickiness of wages and prices to explain why involuntary unemployment exists and why monetary policy has such a strong influence on economic activity.

A long tradition in macroeconomics (including both Keynesian and monetarist perspectives) emphasizes that monetary policy affects employment and production in the short run because prices respond sluggishly to changes in the money supply. According to this view, if the money supply falls, people spend less money and the demand for goods falls. Because prices and wages are inflexible and do not fall immediately, the decreased spending causes a drop in production and layoffs of workers. New classical economists criticized this tradition because it lacks a coherent theoretical explanation for the sluggish behavior of prices. Much new Keynesian research attempts to remedy this omission.

One reason prices do not adjust immediately to clear markets is that adjusting prices is costly. To change its prices, a firm may need to send out a new catalog to customers, distribute new price lists to its sales staff, or, in the case of a restaurant, print new menus. These costs of price adjustment, called "menu costs," cause firms to adjust prices from time to time rather than continuously.

New Keynesian explanations of sticky prices often emphasize that not everyone in the economy sets prices at the same time. Instead, the adjustment of prices throughout the economy is staggered. Staggering complicates the setting of prices because firms care about their prices relative to those charged by other firms. Staggering can make the overall level of prices adjust slowly, even when individual prices change frequently.

Some new Keynesian economists suggest that recessions result from a failure of coordination. Coordination problems can arise in the setting of wages and prices because those who set them must anticipate the actions of other wage and price setters. Union leaders negotiating wages are concerned about the concessions other unions will win. Firms setting prices are mindful of the prices other firms will charge.

Another important part of new Keynesian economics has been the development of new theories of unemployment. Persistent unemployment is a puzzle for economic theory. Normally, economists presume that an excess supply of labor would exert a downward pressure on wages. A reduction in wages would in turn reduce unemployment by raising

the quantity of labor demanded. Hence, according to standard economic theory, unemployment is a self-correcting problem.

2.3 Determinants of Financial Performance

The determinants of bank performances can be classified into bank specific (internal) and macroeconomic (external) factors. Internal factors are individual bank characteristics which affect the bank's financial performance. These factors are basically influenced by internal decisions of the management and the board. The CAMEL framework is often used to proxy the bank specific factors. CAMEL stands for Capital Adequacy, Asset Quality, Management Efficiency, Earnings Ability and Liquidity Management. External determinants of bank profitability are factors that are beyond the control of a bank's management. They represent events outside the influence of the bank. However, the management can anticipate changes in the external environment and try to position the institution to take advantage of anticipated developments.

2.3.1 Capital Adequacy

Capital is the amount of owner funds available to support a bank's business and act as a buffer in case of adverse situation (Athanasoglou, Brissimis and Delis, 2005). Bank's capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs. Moreover, greater bank capital reduces the chance of distress. Capital adequacy is the level of capital required by the banks to enable them withstand risks such as credit, market and operational risks they are exposed to in order to absorb the potential loses and protect the bank's debtors. The adequacy of capital is judged on the basis of

capital adequacy ratio (CAR). Capital adequacy ratio shows the internal strength of the bank to withstand losses during crisis. Capital adequacy ratio is directly related to the resilience of the bank to crisis situations. It has also a direct effect on the profitability of banks by determining its expansion to risky but profitable ventures or areas (Sangmi and Nazir, 2010).

2.3.2 Asset Quality

The bank's asset is another bank specific variable that affects the profitability of a bank. The bank asset includes among others current asset, loan portfolio, fixed asset, and other investments. More often than not the loan book of a bank is the major asset that generates the major share of the banks income. The loan portfolio quality has a direct bearing on bank profitability. The highest risk facing a bank is the losses that arise from non-performing loans. Thus, nonperforming loan ratios are the best proxies for asset quality. It is the major concern of all commercial banks to keep the amount of nonperforming loans at a low level. Thus, low nonperforming loans to total loans ratio shows good health of the portfolio a bank. The lower the ratio, the better the commercial banks' financial performance, (Sangmi and Nazir, 2010).

2.3.3 Management Efficiency

Management Efficiency is one of the key internal factors that determine the bank profitability. It is represented by different financial ratios like total asset growth, loan growth rate and earnings growth rate. Yet, it is one of the complex subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is

another dimension for evaluating management quality. The performance of management is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staff, and others parameters. The capability of the management to deploy resources efficiently, income maximization, reducing operating costs can be measured by financial ratios. One of the ratios used to measure management quality is operating profit to income ratio (Sangmi and Nazir, 2010). The higher the operating profits to total income (revenue) the more the efficient management is in terms of operational efficiency and income generation. The other important ratio that proxy management quality is expense to asset ratio. The ratio of operating expenses to total asset is expected to be negatively associated with profitability. Management quality in this regard, determines the level of operating expenses and in turn affects profitability (Athanasoglou et al. 2005).

2.3.4 Earnings Ability

Financial institutions in the recent years have increasingly been generating income from off-balance sheet business and fee income. Albertazzi and Gambacorta (2006) noted that the decline in interest margins forced banks to explore alternative sources of revenues leading to diversification into trading activities, other services and non-traditional financial operations. The concept of revenue diversification follows the concept of portfolio theory which states that individuals can reduce firm specific risk by diversifying their portfolios.

Sufian and Chong (2009) found a positive relationship between total non-interest income divided by total assets, a proxy for income diversification, a bank profitability using data from all commercial banks in Philippines.

2.3.5 Liquidity Management.

Liquidity is another factor that determines the level of bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. Adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a bank are customer deposit to total asset and total loan to customer deposits. Other financial ratios can be used to measure liquidity. Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia.

2.3.6 Macroeconomic variables

Macroeconomic conditions may affect banking performance in a number of ways. Firstly, there will be a higher demand for bank credit in times of economic boom than in times of recession. A high aggregate growth rate may strengthen the debt servicing capacity of domestic borrowers, and therefore, contribute to less credit risk. Alternatively, adverse macroeconomic conditions hurt banks by increasing the amount of non-performing loans. Thus, it is expected that an improvement in economic growth helps bank performance.

Secondly, it is generally believed that a rising interest rate should lead to higher banking sector profitability by increasing the spread between the saving and the borrowing rates. Hanweck and Kilcollin (1984) found that this relationship is particularly apparent for smaller banks in the USA during the 1976-1984 period. They noticed that falling interest rates during recession lead to slower growth in loans and increase in loan loss. Consequently, banks, particularly the small ones, may have difficulty in maintaining profit as market rate drops. Further studies by Demirguc-Kunt and Huizinga (1999), Staikouras and Wood (2003) and Cheang (2005) all notice a positive relationship between interest rates and bank profitability.

Finally, the effect of inflation is also another important determinant of banking performance. In general, high inflation rates are associated with high loan interest rates and thus high income. Perry (1992), however, asserts that the effect of inflation on banking performance depends on whether inflation is anticipated or unanticipated. If inflation is fully anticipated and interest rates are adjusted accordingly, a positive impact on profitability will result. Alternatively, unexpected rises in inflation cause cash flow difficulties for borrowers, which can lead to premature termination of loan arrangements and precipitate loan losses. Indeed, if the banks are sluggish in adjusting their interest rates, there is a possibility that bank costs may increase faster than bank revenues. Hoggarth et. al., (1998) even conclude that high and variable inflation may cause difficulties in planning and in negotiation of loans.

The findings of the relationship between inflation and profitability are mixed. Although the studies of Guru et al., (2002) in Malaysia and Jiang et al., (2003) in Hong Kong show that higher inflation rate leads to higher bank profitability, the study of Abreu and Mendes (2000), nevertheless, reports a negative coefficient for the inflation variable in European countries. In addition, Demirguc-Kunt and Huizinga (1999) notice that banks in developing countries tend to be less profitable in inflationary environments, particularly when they have a high capital ratio. In these countries, bank costs actually increase faster than bank revenues.

2.3.7 Financial structure variables

Many studies in the banking literature investigate whether financial structure, which is defined as the relative importance of banks, plays a role in determining banking performance. In general, a high bank asset-to-GDP ratio implies that financial development plays an important role in the economy. This relative importance may reflect a higher demand for banking services, which in turn, attracts more potential competitors to enter the market. When the market becomes more competitive, banks need to adopt different strategic moves in order to sustain their profitability.

Demirguc-Kunt and Huizinga (1999) present evidences that financial development and structure variables are very important. Their results show that banks in countries with more competitive banking sectors, where bank assets constitute a large portion of GDP, generally have smaller margins and are less profitable. Also, they notice that countries with underdeveloped financial systems tend to be less efficient and adopt less-than-

competitive pricing behaviours. In fact, for these countries, greater financial development can help to improve the efficiency of the banking sector. Consequently, the market structure of the banking industry shows important implications for profitability.

Furthermore, studies by Smirlock (1985), Bourke (1989) and Staikouras and Wood (2003) suggest that industry concentration has a positive impact on banking performance. The more concentrated the industry is, the greater the monopolistic power of the firms will be. This, in turn, improves profit margins of banks. However, there are also some studies that report conflicting results. For example, Naceur (2003) reports a negative coefficient between concentration and bank profitability in Tunisia. Also, Karasulu (2001) finds that the increasing concentration does not necessarily contribute to profitability of the banking sector in Korea.

2.4 Empirical Review

There are several documented studies on the determinants of financial performance of commercial banks globally. Some of the studies incorporated various monetary tools in analyzing the effect of macroeconomic stability on commercial banks' financial performance. Some of these studies are reviewed in this section.

2.4.1 International Evidence

Gertler and Gilchrist (1994) conducted a study that specifically looked at how bank lending business responds to monetary policy tightening. Their study reveals that business lending does not decline when policy is tightened. They concluded that the

entire decline in total lending comes from a reduction in consumer and real estate loans. In contrast to Gertler and Gilchrist (1994) study, Kashyap and Stein (1994) found evidence that business lending may respond to a tightening of monetary policy. They found that when policy is tightened, both total loans and business loans at small banks fall, while loans at large banks are unaffected. The differential response of small banks may indicate they have less access to alternative funding sources than large banks and so are less able to avoid the loss of core deposits when policy is tightened.

Gambacorta and Iannoti (2005) investigated the velocity and asymmetry in response of bank interest rates (lending, deposit, and inter-bank) to monetary policy shocks (changes) in Italy from 1985-2002 using an Asymmetric Vector Correction Model (AVECM) that allows for different behaviours in both the short-run and long-run .The study shows that the speed of adjustment of bank interest rate to monetary policy changes increased significantly after the introduction of the 1993 Banking Law, interest rate adjustment in response to positive and negative shocks are asymmetric in the short run, but not in the long-run. They also found that banks adjust their loan (deposit) prices at a faster rate during period of monetary tightening (easing).

Rao and Somaiya (2006) investigated the impact of monetary policy on the profitability of banks in India between 1995 and 2000. The monetary variables were banks rate, lending rates, cash reserve ratio and statutory ratio, and each regressed on banks profitability independently. Lending rate was found to exact positive and significant influence on banks' profitability, which indicates a fall in lending rates will reduce the

profitability of the banks. Also, bank rate, cash reserve ratio and statutory ratio were found to significantly affect profitability of banks negatively. Their findings were the same when lending rate, bank rate, cash reserve ratio and statutory ratio were pooled to explain the relationship between bank profitability and monetary policy instruments in the private sector.

Younus and Akhta (2009) examined the significance of Statutory Liquidity Requirement (SLR) as a monetary policy instrument in Bangladesh. Using descriptive analysis techniques like trend analysis and summary statistics, they found that statutory liquidity requirement has experienced infrequent changes and past evidence has shown that reduction in SLR produced positive impact on bank credit and investment especially prior to the 1990s. SLR and Cash Reserve Requirement (CRR) were found to be significant tools of reducing inflation and both for scheduled banks are used only in situation of drastic imbalance-resulting from major shocks. They observed that Bangladesh Bank has used open market operations (OMOs), more frequently rather than changes in the Bank rate and SLR as instruments of monetary policy in line with its market oriented approach.

Gul, Irshad and Zaman (2011) research was focused on examining the effect of bank specific and macroeconomic factors on bank profitability by using data of top 15 Pakistan commercial banks over the period 2005-2009. The Pooled Ordinary Least Square (POLS) method was used to investigate the impact of assets, loans, equity, deposits, economic growth, inflation and market capitalization on profitability, measured through return on asset (ROA), return on equity (ROE), return on capital employed (ROCE) and net interest

margin (NIM). The results found evidence that both internal and external factors have a strong influence on profitability.

Syafri (2012) study analyzed the factors that affect the profit of commercial banks in Indonesia, using polling data from commercial banks listed on the Indonesia Stock Exchange between 2002 and 2011. Bank profitability was measured by return on assets and results showed that loan to total assets, total equity to total assets and loan loss provision to total loan have positive effect on profitability.

The study by Frederic (2014) examined the factors responsible for determining the performance of domestic commercial banks in Uganda. The study used linear multiple regression analysis over the period 2000-2011 to analyze the data of all licensed domestic and foreign commercial banks. The study found that, management efficiency; asset quality; interest income; capital adequacy and inflation influence on the bank's performance in Uganda.

Cekrezi (2015) carried a study to explore the factors that mostly affect financial performance of commercial banks which operate in Albania. The study population consisted of 16 commercial banks with domestic and foreign capital, during the period 2010 to 2013 with a total of 48 data. The investigation used cross sectional time series data which were collected from the Balance Sheet Annual Reports. The study concluded that bank size has a negative but statistically insignificant effect on banks profitability, capital adequacy was one of the bank specific factors that influence the level of bank profitability while liquidity was negatively related with profitability.

Udeh (2015) examined the impact of monetary policy instruments on profitability 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. Four research questions and four hypotheses were raised for the study. Pearson Product moment correlation technique was used to analyze the data collected while t-test statistic was employed in testing the hypotheses. The study discovered that cash reserve ratio, liquidity ratio and interest rate did not have significant impact on the profit before tax of Zenith Bank Plc. However, minimum rediscount rate was found to have significant effect on the profit before tax of the bank. The paper concluded that a good number of monetary policy instruments do not impact significantly on profitability of commercial banks in Nigeria. The paper recommended that management of commercial banks in Nigeria should look beyond monetary policy instruments to enhance their profits.

2.4.2 Local Evidence

Kamau (2009) did a study on Commercial banks in Kenya and set to establish how capital adequacy affects profitability of the banks. He found out that the capital structure of banks is highly regulated. This is because capital played a crucial role in reducing the number of bank failures and losses to depositors when a bank fails as high leveraged firms are likely to take excessive risk in order to maximize shareholder value at the expense of finance providers. To this extent, he concluded that banks with adequate

capital were more profitable than banks which were struggling to maintain the statutory capital adequacy requirement.

Kimani (2013) studied the effect of monetary policy on the lending behaviors of Commercial Banks of Kenya. The study established that CBR, cash reserve ratio, open market operation and uncertainty caused by possible outcomes caused by monetary policy changes influences lending behavior of commercial banks in Kenya.

Ongore and Kusa (2013) study examined the effects of bank specific factors and macroeconomic factors on the performance of commercial banks in Kenya during the period from 2001 to 2010. They analyzed ten years panel data for 37 commercial banks, using linear multiple regression model and Generalized Least Square on panel data to estimate the parameters. The findings showed that bank specific factors significantly affect the performance of commercial banks in Kenya, except for liquidity variable. But the overall effect of macroeconomic variables was inconclusive at 5% significance level. The moderating role of ownership identity on the financial performance of commercial banks was insignificant. Thus, it can be concluded that the financial performance of commercial banks in Kenya is driven mainly by board and management decisions, while macroeconomic factors have insignificant contribution.

Otuori (2013) studied on the influence of exchange rate determinants on the financial performance of commercial banks in Kenya. The study found that interest rate had a positive effect on bank performance in Kenya. The study therefore concluded that higher levels of interest rate lead to higher profitability in commercial banks in Kenya. The

study found that inflation rate had a negative effect on firm performance in Kenya. It was therefore concluded that higher levels of inflation rate result in lower bank profitability in Kenya. The study found that external debt had a negative effect on bank profitability in Kenya. The study therefore concluded that higher levels of external debt result in lower bank profitability in Kenya. The study found that exports and imports had a positive effect on bank profitability in Kenya and concluded that higher levels of exports and imports lead to higher profitability in commercial banks.

Kiganda (2014) investigated the effect of macroeconomic factors on bank profitability in Kenya with equity bank limited in focus. In view of the previous inconclusive findings on the effect of macroeconomic factors on bank profitability among researchers, the study was to establish the effect of macroeconomic factors on bank profitability in Kenya with Equity bank in focus. The study specifically sought to determine, establish and examine effect of; economic growth (real GDP), inflation and exchange rate on bank profitability in Kenya with Equity bank in focus respectively using annual data for the period of 5 years spanning from 2008 to 2012and examined using multiple regression analysis. The OLS results show that macroeconomic factors have insignificant effect on bank profitability in Kenya with equity bank in focus. Specifically; economic growth (real GDP) and inflation have a positive insignificant effect whereas exchange rate has a negative insignificant effect at 5 % level.

Ojiambo (2014) carried a study on the effect of real estate finance on the financial performance of commercial banks listed at the Nairobi Securities Exchange. The study

concludes that real estate finance influence the financial performance of listed commercial banks in Kenya. The study recommended that commercial banks be wary of the way mortgage financing affects their financial performance. The current levels of mortgage finance have not improved the financial performance of banks and it may therefore be necessary to examine how mortgage finance can be used to improve the financial performance of banks in Kenya.

2.5 Summary of the Literature Review

From the empirical review, there is inconclusive evidence on the factors that determine the financial performance of commercial banks. While many of the researchers seem to agree that internal variables affect the financial performance of commercial banks, there is no consensus on the relationship between macroeconomic variables and financial performance of commercial banks. Some of the studies have concluded that there is no relationship between macroeconomic variables and financial performance of commercial banks or the relationship is insignificant, others have concluded that there is evidence of a relationship between macroeconomic variables and financial performance of commercial banks.

This study seeks to fill the gap in the findings of the two local studies done on the determinants of commercial bank financial performance in Kenya. Kiganda (2014) study was a case study on effect of macroeconomic variables on Equity Bank hence it might not be suitable to generalize its findings, while Ongore and Kusa (2013) used both internal and external determinants for their study. This study will therefore seek to

specifically establish the effect, if any, of monetary policy tools on the financial performance of commercial bank in Kenya using bank size as the control variable.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed in completing the study. It involves a blueprint for the collection, measurement and analysis of data. This section is an overall scheme, plan or structure conceived to aid the study in answering the raised research question. In this section the research identified the procedures and techniques that were used in the collection, processing and analysis of data. Specifically the following subsections are included; research design, target population, data collection instruments, data collection procedures and finally data analysis.

3.2 Research Design

This research problem was studied through the use of a descriptive research design. According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. A descriptive research design is a design that is used when the research wants to describe specific behaviour as it occurs in the environment (Greener, 2008). The aim of this study was to determine and report the effect of monetary policy tools, if any, on the financial performance of commercial banks in Kenya This study therefore sought be able to generalise the findings to all the commercial banks in Kenya.

3.3 Target Population

Target population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well defined or set of people, services, elements, events, group of things or households that are being investigated. The target population of this study was the 43 commercial banks licensed and supervised by the Central Bank of Kenya as at 31st December 2014.

3.4 Data Collection

Secondary data was used for the study. Secondary data is applied to facts, assumptions and premises contained in the documentary sources. Secondary data was collected from Published Financial Statements of Commercial Banks in Kenya, Monetary Policy Statements and relevant reports from the Central Bank of Kenya. The specific data collected for this study was book values of the commercial banks on the 31st December of 2009 to 2014; income interest received and interest expense for the each year, Weighted Average Central Bank Rate, Weighted Cash Reserve Ratio and the Weighted Average 364 Treasury Bill Rates for each year under review.

3.5 Data Analysis

Data collected was tabulated in an excel worksheet for ease of manipulation in determining average values of the variables for the study. Data collected was purely quantitative and it was analyzed by descriptive analysis techniques. The descriptive statistical tools such as SPSS helped the researcher to describe the data and determine the extent used. The findings are presented using tables and charts, percentages, tabulations,

means and other central tendencies. For this study, the researcher was interested in measuring the relationship between monetary policy tools and financial performance of Commercial Banks in Kenya.

3.5.1 Analytical Model

The model used in the study took the form below:

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

Where:

α = Constant Term;

$\beta_1, \beta_2, \beta_3$ and β_4 = Beta coefficients;

ε = Error term

Table 3.1 Operationalization of the Study Variables

Symbol	Definition	Measurement
Y	Financial Performance	Net Interest Margin for the year
X_1	Open Market Operations	Average 364 T-Bill rates for the year
X_2	Central Bank Rate	Weighted Average CBR for the year
X_3	Cash Reserve Ratio	Weighted Average CRR for the year
X_4	Size of the bank	Natural logarithm of average book value of total assets of the bank during the year.

Source: Researcher

3.5.2 Test of Significance

A multiple regression analysis was carried out to test the effect of monetary policy tools on financial performance of Commercial Banks in Kenya. A correlation matrix showing the interrelationships within the variables under study is also provided. An ANOVA table which is used to assess the usefulness of a regression model's independent variables in explaining the dependent variable is also provided. The study tested its hypothesis at a 5% level of significance.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter presents the results of the descriptive analysis, the correlation analysis, and the multiple regression analysis. The chapter also presents the discussion of results.

4.2 Descriptive Analysis

Table 4.1 shows the summary of descriptive analysis results for all the variables in the study in terms of the mean scores, the median, the standard deviation and the number of observations.

Table 4.1: Summary Descriptive Results

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
NIM	110	.0232	.1697	.073985	.0025332	.0265688
TBILL	110	.0505	.1457	.100620	.0029298	.0307283
CBR	110	.0679	.1576	.096320	.0030101	.0315705
CRR	110	.0450	.0525	.050000	.0003029	.0031768
SIZE	110	15.3263	19.7477	17.50890	.1171721	1.2289111
Valid N (listwise)	110					

Source: Research Findings

Key: NIM = Net Interest Margin; TBILL = 364 T-Bill Rate; CBR = Central Bank Rate; CRR= Cash Reserve Ratio; SIZE = Size of the bank.

As shown in Table 4.1, a panel data was collected from 22 listed banks over a period of five years giving a total of 110 observations that were used in the study for analysis. The average financial performance as measured by NIM was 0.07399 with a standard deviation of 0.0266. The mean T-Bill rate was 0.1006 with a standard deviation of 0.03072, the mean CBR was 0.0963 with a standard deviation of 0.03157, CRR had a mean of 0.05 with a standard deviation of 0.00317, while size had a mean of 17.5089 and a standard deviation of 1.2289.

4.3 Inferential Statistics

4.3.1 Correlation Analysis

Table 4.2 presents the results of correlation analysis on all the independent variables used in the study. This analysis was conducted to test how the independent variables were related to each other in order to ascertain the presence of multicollinearity.

Table 4.2: Correlation Matrix

	NIM	TBILL	CBR	CRR	SIZE
NIM	1.000	.037	.018	.052	.414
TBILL	.037	1.000	.868	.850	.125
CBR	.018	.868	1.000	.565	.046
CRR	.052	.850	.565	1.000	.184
SIZE	.414	.125	.046	.184	1.000

Source: Research Findings

Key: NIM = Net Interest Margin; TBILL = 364 T-Bill Rate; CBR = Central Bank Rate; CRR= Cash Reserve Ratio; SIZE = Size of the bank.

The results in Table 4.2 show that Central Bank Rate and Cash Reserve Ratio were highly correlated to the T-Bill Rates. This means that there was evidence of multicollinearity among the independent variables which suggests that there entry into the regression model as they are without transformation would lead to spurious regression results. These were therefore transformed using first differences before being entered into the regression equation for analysis.

4.3.2 Regression Analysis

Table 4.3 shows the summary of regression analysis conducted on the data gathered. The table shows the correlation coefficients, the standard errors, the t-statistics and the p-values.

Table 4.3: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.084	.034		-2.463	.015
	DIFF(TBILL,1)	.506	.984	.140	.514	.608
	DIFF(CBR,1)	-.221	.547	-.082	-.405	.687
	DIFF(CRR,1)	-4.349	8.797	-.087	-.494	.622
	SIZE	.009	.002	.416	4.640	.000

a. Dependent Variable: NIM

Source: Research Findings

As shown in Table 4.3, T-Bill rate had positive effect on the financial performance of commercial banks in Kenya. This effect was insignificant at 5% level, β = 0.506, p =

0.608. The results also show that the Central Bank Rate had a negative effect on the financial performance of commercial banks. This effect was insignificant at 5% level, β = -0.221, p = 0.687. The table further shows that Cash Reserve Ratio had a negative and insignificant effect on the financial performance of commercial banks, β = -4.349, p = 0.622. Finally, the study revealed that bank size had a positive and significant effect on the financial performance of commercial banks in Kenya, β = 0.009, $p < 0.05$.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420[a]	.177	.145	.0246789

a. Predictors: (Constant), SIZE, DIFF(CBR,1), DIFF(CRR,1), DIFF(TBILL,1)

The R^2 value of .177 indicates that only 17.7% of the variations in financial performance of Commercial banks in Kenya can be explained by variations in the monetary policy tools. 92.3% of the variations is explained by other factors.

4.3.3 Analysis of Variance.

Analysis of variance (ANOVA) is a statistical procedure for dividing the total variability of a variable into components that can be attributed to different sources. In regression analysis, the researcher used ANOVA to determine the usefulness of the independent variables in explaining variation in the dependent variable. An important statistical test conducted in analysis of variance was the *F*-test.

Table 4.5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.014	4	.003	5.581	.000[a]
	Residual	.063	104	.001		
	Total	.077	108			

a. Predictors: (Constant), SIZE, DIFF(CBR,1), DIFF(CRR,1), DIFF(TBILL,1)

b. Dependent Variable: NIM

The *F*-statistic was 5.581 and significant at 5% level, $p = 0.000$ implying that the model is fit to explain the relationship between monetary policy tools and financial performance of commercial banks in Kenya.

4.5 Interpretation of the Findings

The study examined the effect of monetary policy tools on the financial performance of commercial banks in Kenya. The monetary tools used for the study were open market operations as represented by the 364 T- Bill Rates, the Central Bank Rate and the Cash Reserve Ratio.

The study examined the effect of Treasury Bill Rates on the financial performance of commercial banks in Kenya. The results showed that T-Bill rates with $\beta = 0.506$, $p = 0.608$ do not have a significant effect on the financial performance of commercial banks in Kenya. The study also examined the effect of the Central Bank Rates on the financial performance of commercial banks in Kenya. The results showed that Central Bank Rates with $\beta = -0.221$, $p = 0.687$ do not have a significant effect on the financial performance of

commercial banks in Kenya. The study further examined the effect of the Cash Reserve Ratio on the financial performance of commercial banks in Kenya. The results showed that Cash Reserve Ratio with β = -4.349, p = 0.622 do not have a significant effect on the financial performance of commercial banks in Kenya. From the three study results, monetary policy tools we found not to have significant effect on financial performance of commercial banks in Kenya and this is consistent with the findings of Ongore and Kusa (2013) and Kiganda (2014).

The study examined the effect of bank size on the financial performance of commercial banks in Kenya. Bank size was used as a control variable in the study. The results showed that bank size, β = 0.009, p *<0.05*, had a weak significant effect on the financial performance of commercial banks. Thus, the financial performance of listed commercial banks in Kenya is influenced by the size of the banks as measured by total assets. This is consistent with the findings of Goddard et al. (2004)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

5.1 Introduction

This section presents the summary of findings, conclusions, limitations of the study, recommendations for policy and practice, and suggestions for further research.

5.2 Summary

The study sought to examine the effect of monetary policy tools on the financial performance of commercial banks in Kenya. The study focused on 22 commercial banks and collected data for 5 years from 2010 to 2014 from the annual reports of the commercial banks.

SPSS version 16 was then used to analyse the panel data using regression analysis, correlation analysis and descriptive analysis. The results showed that the model explained 17.7% of the variance in financial performance as given by the value of R^2. The model was also fit to explain the relationship as the *F*-statistic of 5.598 was significant at 5% level, $p = 0.000$. This model was therefore good enough to explain how monetary policy tools influence the financial performance of commercial banks in Kenya.

The study found that T-Bill rate had positive effect on the financial performance of commercial banks in Kenya. This effect was insignificant at 5% level, $\beta = 0.506$, $p = 0.608$. The results also show that the Central Bank Rate had a negative effect on the financial performance of commercial banks. This effect was insignificant at 5% level, $\beta =$

-0.221, p = 0.687. The table further shows that Cash Reserve Ratio had a negative and insignificant effect on the financial performance of commercial banks, β = -4.349, p = 0.622. Finally, the study revealed that bank size had a positive and significant effect on the financial performance of commercial banks in Kenya, β = 0.009, $p < 0.05$.

5.3 Conclusion

The study examined the effect of monetary policy tools on the financial performance of commercial banks in Kenya. The study found that monetary policy tools have no significant effect on the financial performance of commercial banks in Kenya. Thus, the study concludes that monetary policy tools do not influence the financial performance of commercial banks in Kenya.

The study assessed the effect of Treasury Bill Rate (T-Bill Rate) on the financial performance of commercial banks in Kenya. The results showed that T-Bill Rate had a positive effect on the financial performance of commercial banks. Thus, the study concluded that T-Bill rates have a positive but insignificant affect the financial performance of Commercial banks in Kenya.

The study examined the effect of Central Bank Rate on the financial performance of Commercial banks in Kenya. The results showed that Central Bank Rate had a negative effect on the financial performance of commercial banks. The study therefore concluded that Central Bank Rate has no significant affect the financial performance of commercial banks in Kenya.

The study also assessed the effect of Cash Reserve Ratio on the financial performance of commercial banks in Kenya. The results showed that Cash Reserve Ratio had a negative effect on the financial performance of listed banks. Thus, the study concluded that Cash Reserve Ratio does not affect the financial performance of commercial banks in Kenya.

The study examined the effect of bank size on the financial performance of listed banks in Kenya. The results showed that bank size had a weak positive effect on the financial performance of commercial banks. Thus, the study concluded that bank size affects the financial performance of listed firms in Kenya.

5.4 Limitations of the Study

The study used secondary data from 22 commercial banks in Kenya. This sample may not be representative of all commercial banks in Kenya and therefore the study may not be applicable to all banks. To improve this limitation it may be important to include all commercial banks.

The results may also not be applicable to other financial firms as the focus in this study was on commercial banks. While it can offer important insights to other financial institutions, such conclusions should be approached with care given the variations in the way commercial banks operate and the way other financial institutions operate. To improve this, it may be important to replicate this study to other financial institutions or to include them in the study.

The time span for the data collected in this study was annual data for five years. This is not a very long period that can help provide robust results for applicability by the banks. A longer period, of say 10 years, with lesser intervals, say quarterly, would have been preferred to be able to conduct a panel analysis. A longer period would help reduce this limitation.

5.5 Recommendations for Policy

The study recommends that commercial banks should put more emphasis on the internal factors to financial performance. These internal factors include capital adequacy, asset quality, management efficiency, earnings ability and liquidity management. Monetary policy tools effect will be handled by the management through risk management policies for the bank. The study further recommends that while bank size was found to lead to better financial performance, it is important that banks understand the source of its funds and the costs associated with the funds.

5.6 Suggestions for Further Research

The study suggests that more studies be done in this area focusing on all banks in Kenya as well as other financial institutions such as microfinance that also give loans. This can be done by focusing on all commercial banks in Kenya and microfinance institutions. Studies should also be conducted on the topic using fairly longer time periods (more than 5 years) and smaller time intervals (say quarterly) of data collection as such studies may

be useful in showing the trends as well as the long terms relationship between monetary policy tools and financial performance of commercial banks in Kenya.

The study also recommends that further studies explore the relationship between monetary policy tools and financial performance of commercial banks with categories of small, medium and big banks. As has been noticed from the research data, bigger banks exhibited larger Net Interest Margins as compared to smaller banks.

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APPENDICES

Appendix I: Commercial Banks in Kenya as at 31st December 2014

1	African Banking Corporation Ltd.
2	Bank of Africa (K) Ltd.
3	Bank of Baroda (K) Ltd.
4	Bank of India
5	Barclays Bank of Kenya Ltd.
6	CFC Stanbic Bank Ltd.
7	Charterhouse Bank Ltd.
8	Chase Bank (K) Ltd.
9	Citibank N.A. Kenya
10	Commercial Bank of Africa Ltd.
11	Consolidated Bank of Kenya Ltd.
12	Co-operative Bank of Kenya Ltd.
13	Credit Bank Ltd.
14	Development Bank of Kenya Ltd.
15	Diamond Trust Bank Kenya Ltd.
16	Dubai Bank Kenya Ltd
17	Ecobank Ltd
18	Equatorial Commercial Bank Ltd.
19	Equity Bank Ltd.
20	Family Bank Ltd.
21	Fidelity Commercial Bank Ltd.
22	Fina Bank Ltd. (Acquired by GT Bank Kenya in 2013)
23	First Community Bank
24	Giro Commercial Bank Ltd.
25	Guardian Bank Ltd.

26	Gulf Africa Bank (K) Ltd
27	Habib Bank A.G. Zurich
28	Habib Bank Ltd.
29	Imperial Bank Ltd.
30	Investment & Mortgages Bank Ltd.
31	Jamii Bora Bank Ltd.
32	Kenya Commercial Bank Ltd.
33	K-Rep Bank 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 (K) Ltd.
41	Trans-National Bank Ltd.
42	UBA Kenya Bank Limited
43	Victoria Commercial Bank Ltd.

Source: Central Bank of Kenya (2015)

Appendix II: Commercial Banks' Raw Data

	Commercial Bank	2010		2011		2012		2013		2014	
		NIM	Size	NIM	Size	NIM	Size	NIM	Size	NIM	Size
		Y	X4	Y	X4	Y	X4	Y	X4	Y	X4
1	African Banking Corporation Ltd.	0.0766	16.1473	0.0711	16.3418	0.0552	16.7637	0.0642	16.7930	0.0674	16.8807
2	Bank of Africa (K) Ltd.	0.0495	17.1001	0.0403	17.4722	0.0475	17.7065	0.0397	17.7798	0.0405	17.9461
3	Bank of Baroda (K) Ltd.	0.0508	17.2916	0.0637	17.4183	0.0435	17.6471	0.0547	17.7672	0.0515	17.9418
4	Barclays Bank of Kenya Ltd.	0.1050	18.9581	0.1141	18.9291	0.1141	19.0364	0.0997	19.1483	0.1073	19.2366
5	Chase Bank (K) Ltd.	0.0631	16.9001	0.0642	17.4132	0.0771	17.7095	0.0686	18.1537	0.0893	18.4894
6	Consolidated Bank of Kenya Ltd.	0.0733	16.1649	0.0717	16.5445	0.0678	16.7059	0.0794	16.6356	0.0822	16.5287
7	Co-operative Bank of Kenya Ltd.	0.0746	18.8547	0.0904	18.9381	0.0866	19.1121	0.0859	19.2487	0.0804	19.4599
8	Credit Bank Ltd.	0.0337	15.3263	0.0365	15.5008	0.0551	15.6730	0.0736	15.8046	0.0673	15.9976
9	Ecobank Ltd	0.0398	17.1073	0.0460	17.1191	0.0232	17.2741	0.0393	17.4239	0.0250	17.6427
10	Equatorial Commercial Bank Ltd.	0.0394	16.1577	0.0444	16.3748	0.0513	16.4623	0.0693	16.5604	0.0826	16.6243
11	Equity Bank Ltd.	0.1051	18.7125	0.1142	18.9912	0.1456	19.1900	0.1245	19.2886	0.0916	19.6578
12	Family Bank Ltd.	0.1697	16.8206	0.1095	17.0737	0.1445	17.2490	0.1224	17.5883	0.1006	17.9396
13	Giro Commercial Bank Ltd.	0.0395	16.1412	0.0461	16.2875	0.0374	16.3235	0.0509	16.4273	0.0398	16.5290
14	Gulf Africa Bank (K) Ltd	0.0783	16.0767	0.0767	16.3739	0.1044	16.4228	0.0957	16.5915	0.0886	16.7988
15	Imperial Bank Ltd.	0.1029	16.7932	0.1015	17.1216	0.0929	17.3591	0.1025	17.5769	0.0921	17.8515
16	Investment & Mortgages Bank Ltd.	0.0534	17.9513	0.0653	18.1581	0.0553	18.3321	0.0692	18.5189	0.0637	18.7377
17	Kenya Commercial Bank Ltd.	0.0959	19.2228	0.0894	19.4592	0.1026	19.5329	0.1023	19.5922	0.0935	19.7477
18	National Bank of Kenya Ltd.	0.0827	17.9103	0.0868	18.0447	0.0831	18.0225	0.0762	18.3426	0.0736	18.6266
19	NIC Bank Ltd.	0.0722	17.8933	0.0612	18.1139	0.0515	18.4382	0.0676	18.5422	0.0597	18.7361

20	Oriental Commercial Bank Ltd.	0.0383	15.3325	0.0397	15.4309	0.0529	15.6433	0.0606	15.7624	0.0538	15.8770
21	Standard Chartered Bank (K) Ltd.	0.0663	18.7775	0.0805	18.9165	0.0813	19.0910	0.0831	19.2115	0.0895	19.2210
22	Trans-National Bank Ltd.	0.0780	15.3761	0.0774	15.8016	0.0634	15.9904	0.0768	16.0833	0.0771	16.1418

Source: Commercial Banks' Annual Reports (2010 - 2014)

Appendix III: Monetary Policy Research Data

Variable	**Year**				
	2010	2011	2012	2013	2014
364 T-Bill Rate (X1)	0.0505	0.0936	0.1457	0.1091	0.1042
Central Bank Rate (X2)	0.0679	0.0828	0.1576	0.0883	0.085
Cash Reserve Ratio (X3)	0.0450	0.0475	0.0525	0.0525	0.0525

Source: Central Bank of Kenya