MACRO-ECONOMIC FACTORS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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DECEMBER, 2019
DECLARATION

This research project is my original work and to the best of my knowledge has not been submitted for an award to any University.

Signature………………………………………………..Date……………………………………

Samuel Omboke Nyabute

D53/OL/CTY/32167/2016

The research project has been submitted for examination with my approval as the University Supervisor

Signature………………………………………………..Date……………………………………

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Department of Accounting and Finance

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Kenyatta University
DEDICATION

The research work is dedicated to my lovely spouse Tabitha Njoki for supporting me.
ACKNOWLEDGEMENT

I thank the Lord almighty for taking me through this research. I give my gratitude to family for supporting me. I as well appreciate my supervisor Dr. Daniel Makori and the entire staff in Finance and Accounting department for their support. As a final point of gratitude, I thank the library staff for supporting in terms of reference materials that were instrumental to this study.
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<tr>
<td>CBK</td>
<td>Central Bank of Kenya</td>
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<tr>
<td>CBBR</td>
<td>Central Bank Base Rate</td>
</tr>
<tr>
<td>CBR</td>
<td>Central Bank Rate</td>
</tr>
<tr>
<td>CLRM</td>
<td>Classical Linear Regression Model</td>
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<tr>
<td>PAT</td>
<td>Profit After Tax</td>
</tr>
<tr>
<td>PBT</td>
<td>Profit Before Tax</td>
</tr>
<tr>
<td>ROAA</td>
<td>Return on Average Assets</td>
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<td>ROE</td>
<td>Return on Equity</td>
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## OPERATIONAL DEFINITION OF TERMS

<table>
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<th>Term</th>
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<tr>
<td><strong>Central Bank Rate</strong></td>
<td>Is the amount that the central bank charges on loans and advances granted to a commercial bank</td>
</tr>
<tr>
<td><strong>Deposit rate</strong></td>
<td>The rate of interest which amount deposited by a customer in a bank gains usually expressed in percentage on the principal</td>
</tr>
<tr>
<td><strong>Exchange rate</strong></td>
<td>The amount of Kenyan shillings required for a 1 unit of USD</td>
</tr>
<tr>
<td><strong>Financial Performance</strong></td>
<td>Regarded as the capacity to transform the assets or equity of firms into returns for owners. In assessing financial performance, return on equity was utilized.</td>
</tr>
<tr>
<td><strong>Inflation</strong></td>
<td>General rise of price of services and goods overtime in an economy.</td>
</tr>
<tr>
<td><strong>Macroeconomic Factors</strong></td>
<td>Macroeconomic factors are country wide variables that are beyond the control of bank management which affect the whole economy rather than a single unit.</td>
</tr>
<tr>
<td><strong>Money Supply</strong></td>
<td>Regarded as total amount of money circulating in a country. This is inclusive of assets such as cash and coins.</td>
</tr>
<tr>
<td><strong>Return on Equity</strong></td>
<td>This is seen as total income yielded on funds held by shareholders.</td>
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ABSTRACT.

Banks are essential due to their contribution in the economic success of countries. However, the intermediation performed via banks is dependent on the banks’ performance. Banks’ financial performance is the core mandate in venturing into business. Commercial banks in Kenya have continued to experience poor performance which is shown in the return on equity of banks. This has over the years been a major source of concern in Kenya’s financial sector. Performance of banks is accredited to the macroeconomic background. The government through the Central Bank uses macroeconomic tools with the objective of managing and attaining price stability, economic growth, smooth business cycles, full employment and prevention of financial crises. Therefore, commercial banks serve as a framework for the Central Bank in implementing these tools and hence the basis for this study. Researches undertaken on macroeconomic aspects and bank financial performance were majorly not based on Kenya but other nations. The current study required to assess the consequence of macroeconomic factors on Kenyan Banks’ performance. The study assessed the effect of CBK rate, money supply, exchange rate and inflation on bank performance in the context of Kenya. This research was based on Agency Theory, Interest Rate Parity Theory, Quantity Theory of money and deflation theory. The study adopted causal research design. Furthermore, the study used panel data collected using a document review guide. Scrutiny of data was based on a panel regression model. Research target population was Kenyan banks for the period of study which are 43 in total. The research used census approach as it covered all the 43 banks situated in Kenya. Tests for stationarity, multicollinearity and normality were conducted. The presentation of results was done using tables. The research results showed that CBK Rate had a negative and significant effect on financial performance of commercial banks in Kenya. Secondly, it was found that money supply had a positive and significant effect on financial performance of commercial banks in the context of Kenya. Thirdly, the outcomes from the regression analysis point to the fact that inflation had a negative and insignificant effect of financial performance of commercial banks in Kenya. Finally, the results of the study revealed that exchange rate has a positive and insignificant effect on financial performance of commercial banks in Kenya. The study concluded that Central Bank Rate and money supply have significant effect on financial performance of commercial banks in Kenya. The study further concluded that inflation and exchange rate have insignificant effect on financial performance of commercial banks in Kenya. The recommendation from the study was that Kenya’s Central Bank ought to be cautious in setting the base rate, it should be go lower rather than higher as this impacts negatively on bank performance. Also, the study recommended that the government of Kenya through the apex regulatory body should ensure adequate money supply in the country’s economy as higher supply results in enhanced financial performance of commercial banks. The recommendation of the research was that further studies should incorporate liquidity ratios in assessing the financial performance of commercial banks.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The role of economic resource allocation and risk distribution of expected capital in a country is majorly performed by the banking sector. Therefore, improved growth and wellbeing, and even business phases in an economy is ensured with an efficient and successful banking business (Macharia, 2013). There are several functions that are performed by banks thus making them more appropriate channels of monetary policy implementation. For instance, commercial banks make available the services of payment processing and currency exchange; transforming assets on the basis of maturity, denomination, superiority and recently management and control of risks (Koki, 2013).

Monetary policy is seen as the process where a country’s central bank regulates circulation and money’s cost or interest rates to reach certain goals which are directed towards the economic success and stability. Therefore, monetary policy is a vital ingredient in achieving, sustaining and enhancing the growth of the economy, attaining full employment level, stabilization of price levels, sustaining a improved payment balance, enhancing industrial activities and economic stability (Cheruiyot, 2012).
Central Banks in developing countries encounter challenges in operating an effective monetary policy system. These challenges lie primarily on the fact that the financial markets in these countries are characterized by high government debts. A situation which is accompanied by complexities in estimating money-demand and fiscal-pressure to charge the tax inflation through rapid expansion of monetary base (MacCarthy, 2016). Generally, the monetary authorities in developing economies have poor records of administering monetary policy initiatives. This is largely as a result Central banks not being independent (that is separated from) of government. Over the years, there have been measures put in place to liberalize and reform the financial markets so as to provide a framework for monetary policy operation.

The operating environment of banks is unpredictable due to stiff competition in the sector and the global market at large. In order to ensure survival, the players in the banking sector offer attractive lending rates to their customers (Salloum & Hayek, 2012). Commercial banks enhance the mobilization of savings, risks spreading and allotment of scarce economic resources. Banks and other intermediaries however, incur certain cost given that the receipt intended for deposits and loans aren’t synchronized (Mulwa, 2015). Obviously, a fee is charged by commercial banks for the intermediation services which they offer. This is to compensate for the risk involved in the intermediation process.
1.1.1 Macro-economic Factors

Macroeconomic factors are country wide variables that are further than the control of bank administration which affect the whole economy rather than a single unit (Ajayi & Atanda, 2012). These regulations serve as guidelines in operation and are developed by a country’s monetary authority. According to the CBK (2015), monetary policy comprises of decisions made by the pecuniary authority in ensuring that a money supply is in accordance with its growth and price objectives. Another purpose of monetary policy is to regulate price in a country’s economy. Price stability entails ensuring of low and stable level of inflation (Buigut, 2010).

The CBR is the interest rate on loans issued to by the pecuniary authority to banks (Macharia, 2013). The Monetary Policy Committee sets, determines and reviews the rate of interest usually or at least every two months. An rise in CBR is a pointer to an rise in the banks ”lending rates hence a tightening of the bank’s loan books”. The anticipation here is reduction of the banks’ profitability.

Money supply is a vital monetary policy tool used by a nation’s Central Bank which regarded as the total amount of money circulating over specific period in an economy. These spans from assets including coins, cash, and checking and savings accounts balances held by individuals and businesses which can be used as short term investments and make payments (Waweru, 2013).

Inflation is explained as an increase in prices over time in an economy during specific time period. It is traditionally assessed using the CPI which stands for Consumer Price Index based on
prices of commodities and services in an economy. The month on month rate of inflation is assessed by comparing the CPI for a particular month to the CPI of that same month in the previous year. Inflation is attributed to various factors in both the local and international market. For example, inflation is sparked during periods of excessive rains or drought food prices could increase thereby increasing rate of inflation (CBK, 2015).

Exchange rate is regarded as official rate of currency exchange between 2 countries which is the rate at which one currency is required to acquire a different one (Ajayi and Atanda, 2012). An upsurge in the rate of exchange of a domestic money when compared to its foreign counterpart indicates depreciation in the home currency. The study applied Kenyan Shillings to USD as a proxy for exchange rate in this research.

**1.1.2 Financial Performance of Commercial Banks**

Generally in measuring banks performance, ratios are utilized. These ratios span from activity, profitability, efficiency and liquidity ratios. From the perspective of investors, firms’ financial performance is reflected in the trends of yields arising from their investments in the organization and the trend of the organization’s market stock price (Ongore & Kusa, 2013). Similarly, the performance of banks can be assessed via profitability ratios. These ratios range from the ROE and NIM. NIM refers to differences between commercial banks’ interest income realized from their loans and the interest given to lenders (that is deposits), in proportion to sum of (interest-earning) assets. Therefore, NIM indicator of the difference between interest income of banks on loans and securities and its borrowed funds’ interest cost (Mulwa, 2015).
The ROE is a ratio which is used to show the amount of profit earned by a firm as compared to shareholders equity injected into the business as shown on company balance sheet. ROE is used to assess the return on investment (Macharia, 2013). It is arrived at by division of Net Income after Taxes over Total Equity Capital. Thus it is a representation of the amount of return earned on the investments by stockholders of a bank. Similarly, ROE serves as a proxy for management effectiveness in handling the funds of shareholders (Ajayi & Atanda, 2012). Therefore, in practice, the higher the level of ROE, the more effective shareholders funds are utilized by management. In measuring banking performance, ROE was utilized.

1.1.3 Commercial Banks in Kenya

Banks situated in Kenya are guided through provisions of the Banking Act (Cap 488), regulations and CBK prudential guidelines (CBK, 2013). Kenya’s banks are 43 in entirety. The CBK is vested with the task of initiating and implementing monetary policy tools in Kenya. The CBK recommends the CRR, CBR and Treasury bill rates. Those tools are implemented by banks where the aim is stabilizing the levels of prices in the economy.

The banking sector in Kenya has gone through various reforms by government which is aimed at making it competitive in the international market. In 2007, the capital of banks was raised from Sh250 million to Sh 1 billion by the Ministry of Finance which was to be effective from 2010 and later pushed to 2012. Kenyan banks posted flat or reduced earnings in 2016 following interest rate cap introduced last September. At least four banks have announced their earnings in
the last few days, with their results highlighting how the fixing of interest rates has affected the financial institutions. Interest rates on loans by commercial banks were capped in November 2016 at 4 percent above the CBR that is currently at 10%.

Previously before the law was effected, lending rates were within the range of 19 to 27 percent, with proponents of capping then noting that customers were highly exploited by banks through hiked rates of interest. According to the Central Bank, the profit from banking sector for the year 2015 was at USD1.3b which was largely attributed to interest earnings from customers. However, total commercial banks' earnings has fallen significantly in 2016 if results of commercial banks released in the last few days are indicative (CBK, 2016).

Table 1.1 is a presentation of the overall banking sector performance based on the ROE from 2012 - 2016.
From the findings in table 1.1 presented, it is apparent that the average ROE was lowest in 2016 at 14.35 percent which is a significant decline from 21.99 percent in 2012. The ROE for 2013 was 20.94 percent which dropped to 20.88 percent in 2014. There was a further drop in 2015 to 17.59 percent then to 14.35 percent in 2016. This reveals the changes brought about by the dynamics in the macro-economic environment. In 2016 for instance witnessed a significant drop in the average ROE due to interest rate capping.

**Source (World-bank, 2017)**
1.2 Problem Statement

Financial performance of a firm is importantly the core mandate in venturing into business (Ajayi & Atanda, 2012). Kenya commercial banks are witnessing poor performance. This has become a source of concern because the banks’ performance provides directions for investors as it guides them on whether to invest or not to invest in a particular firm (Mulwa, 2015). It also ensures that they carry out the intermediation role effectively and efficiently (Kenya Bankers Association, 2012).

As indicated by World Bank (2017) Kenya Commercial banks are characterized by poor banking performance which is exhibited in their return on equity. Commercial banks ROE was 21.99% for the year 2012 which shows a decline in comparison with 23.10% of the year 2011. Similarly, the downward trend extended to the years 2013 with 20.94%, 2014 with 20.88% and 2015 at 17.39%. In addition, 2016 saw the profits of prominent commercial banks decline by 10% (CBK, 2016). The decline in banking performance over the years has been a cause of apprehension to government and other stakeholders. Furthermore, commercial banks embarked on retrenchment activities so as to minimize their operating cost (Mbuia, 2017). Ajayi and Atanda (2012) have linked the performance of banks to financial policy background. Similarly, Cheruiyot (2012) attributed the performance of banks to monetary policies set by Central Banks.

Majority of investigations on Macro-economic aspects and performance of banks were centered on already successful countries and other than Kenya. Investigations carried out based on
Kenyan banks gave most attention to ROA as a measure of performance. Similarly, these studies were premised on multiple regression. These studies include Otuori (2013), Kimani (2013), Machari (2013), Kiganda (2014) and Mulwa (2015). Furthermore, these researches were majorly done using multiple regression analysis. In addressing the void, the existing investigation turned its attention on the consequence of macro economic factors on performance of banks. Financial performance was examined using ROE. Furthermore, considering the study utilized panel data, whereas scrutiny of the present investigation was based on a panel regression as opposed to multiple-regression. Considering that the study sought to analyze 43 commercial banks across a five year period, the study preferred the use of panel regression instead of the multiple regression models. Panel data analysis accounts for effect on each unit under observation.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to evaluate the effect of macro-economic factors on financial performance of commercial banks in Kenya

1.3.2 Specific Objectives

This study was guided by the following explicit objectives;

i. To establish the effect of central bank rate on financial performance of commercial banks in Kenya
ii. To analyze the effect of money supply on financial performance of commercial banks in Kenya

iii. To assess the effect of inflation on financial performance of commercial banks in Kenya

iv. To determine the effect of exchange rate on financial performance of commercial banks in Kenya

1.4 Research Hypotheses

The study sought to test the following hypotheses:

$H_{01}$: Central Bank Rate has no significant effect on financial performance of commercial banks in Kenya.

$H_{02}$: Money Supply has no significant effect on financial performance of commercial banks in Kenya.

$H_{03}$: Inflation has no significant effect on financial performance of commercial banks in Kenya.

$H_{04}$: Exchange Rate has no significant effect on financial performance of commercial banks in Kenya.

1.5 Significance of the Study

The research results would be of importance to the management of commercial banks, microfinance institutions, SACCOs and other financial sector players as it gives them more insights on the effect of macroeconomic factors on financial performance. At the end the research will be resourceful to CBK and the government on the macro-economic aspects effects
on profitability of banking. The government through the Central Bank are provided with recommendations on the linkages between macroeconomic factors and financial performance of commercial banks. Suggestions are therefore provided on increasing and decreasing effect of these macroeconomic factors on bank performance.

For academicians and future researchers, the investigation would be essential as it present ideas on areas deserving additional enquiry so as to improve on the topic of effects macro-economic factors on banking performance in the Kenyan case. Moreover, the results of the investigation is also important future scholars and researchers and more add to the existing body of information on macro-economic aspects and performance of financial sector participants. The study is also of importance to interest scholars in the subject area who will want to carry out further studies.

1.6 Limitations of the Study

The challenge that was encountered was the authenticity of research data. The study sought to use of secondary data, the internet is flooded with a variety of data sets on the research variables. In dealing with this challenge, the researcher ensured that all research data were sourced from original sources which include, the KNBS, CBK and the financial statements of banks that were audited.

1.7 Scope of the Study

The investigation was done among the forty three registered Kenyan banks and regulated by the CBK. The Investigation covered between years 2012 to 2016. The preference of this time was
accredited to the fact that a number of macro-economic changes were made within this period. The study used macro-economic factors (CBR, money supply, inflation and exchange rate) and financial performance (ROE) as independent and dependent variables respectively. The study utilized panel regression analysis.

1.8 Organization of the Study

This research comprises of preliminary pages and three chapters. The foremost chapter comprises the research environment which details of the research problem, research and hypothesis, study importance, scope, and study limitations. The next section encompasses review of literature and conceptual framework. The third chapter consists of the methodology of the research which includes population, design, data compilation, design of sampling, data scrutiny and explanation. Chapter four contains the analysis of data and discussions thereafter and chapter five presents the summary, conclusion and recommendations of the study.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section was segmented into literature assessment. The appraisal of past studies is presented in this section where an outline of literature, research gaps and conceptual structure to illustrate variable relationship was included.

2.2 Theoretical Review

The investigation was guided on four perspectives which include Interest Rate Parity, Quantity of Money, Deflation and Agency theories. The preposition of the perspectives reinforces the proposed association among the study components.

2.2.1 Interest Rate Parity Theory

This perspective was propagated by Keynes in 1933. This perspective postulates that the differential interest rate for 2 countries is same as the differential between the forward rate of exchange and the current rate of exchange. The theory is key in the international currency market where interest rates and foreign exchange rates are linked together (Radha, 2011).

Interest rate is an amount usually charged on borrowed funds to compensate for the risk involved in intermediation. Financial institutions therefore, are guided by rules for determining such charges. The interest rate parity provides a linkage which spans from, interest rate, inflation to exchange rate. The theory is based on two categories which are covered interest rate parity
(CIRP) and uncovered rate parity (UCIRP). CIRP gives the association existing by comparing forward and spot rate of exchange with rates on bonds in an economy and another economy (Ngugi, 2001). On the other hand, UCIRP presents the current and anticipated rate of exchange by comparing nominal rates of bonds’ interest in an economy and another economy (two economies) (Radha, 2011). The CIRP has the notion that the interest rate in local economy must be higher than that of the non-domestic economy by an amount equivalent to forward discount on local currency. The CIRP, asserts in the situation whereby rate of exchange of 2 countries are fixed say Ksh and USD, then their interests should be the same. Therefore, pecuniary policy operations can’t be undertaken autonomously in little state having an exchange rate regime that is pegged (Mirzaei, Liu & Moore, 2011).

2.2.2 Quantity Theory of Money

QTM was propounded in 1929 by Fisher & Friedman. The perspective asserts that there is a link between aggregate prices in an economy and total volume of money supply. Key to QTM is the preposition that a single variation in the rate of money increase leads to an equivalent change in rate of inflation in equal measures (Nasserinia, Ariff & Fan-tah, 2014)

Quantity Theory of Money is important n this research as it provides prepositions on how the circulation of money in a country in determined by the fiscal authority of that country. Money supply is a tool used by the CBK to control amount of money in an economy (Mulwa, 2015).
Therefore, the increase in money supply has a consequence of enhancing the capacity of banks to grant loans to customers and vice versa and hence, impacting on bank performance.

2.2.3 Deflation Theory

This perspective was propounded in 1933 by Fisher. The perspective was of the view that diminishing levels of prices indicate low inflation which results in the depreciation profitability of businesses thereby triggering bankruptcies and collapses of such organizations. The phases cause results in random rates of interest movements leading to a fall in money value. The movements are regarded as forces within macro and micro environment which are intrinsic in the operating atmosphere of business as it exerts a level of indebtedness with borrowers and lenders ultimately bringing about loan default (Nzuve, 2016).

Deflation concept is important to the present survey in that it views that rising price levels has a resultant effect of increasing bank revenues, profitability which ultimately brings about improved performance of banks. On the contrary, declining price levels, impacts negatively on bank revenues, their profitability and ultimately their performance which sparks up bankruptcies (Nzuve, 2016). Therefore the impact of inflation rate on performance is dependent on how well it is anticipated. When well anticipated, the impact is positive as interest rates are adjusted accordingly by management of banks to absorb such changes and vice versa.
2.2.4 Agency Theory

The concept was propounded in 1976 by Jensen & Meckling. The concept has been in the forefront of performance of firms. The theory rests on the notion that there exist a relationship between owners of businesses and the management (Mulwa, 2015). The theory posits agency conflict emanates from such a connection. The managers of firms are treated as agents given the responsibility of running the affairs of the firms by the stockbrokers in the form of a contract where they are expected to bring about high financial performance while enhancing the wealth of owners (Waweru, 2013). In general, the managers are assumed to act in stockholders’ best interests.

As regarding this research, agency theory is a vital theory that’s provides insights on how banking performance in terms of ROE is predicted by the effectiveness and efficiency of bank management. The way and manner by which banking activities are handled by bank managers impacts on the financial performance of banks. Bank managers are traditionally expected to improve the value of shareholders. Managers as agents however, sometimes instead of maximizing the wealth of shareholders may sometimes be found engaging in some activities which are geared towards satisfying personal interest at the detriment of that of shareholders. (Macharia, 2013). Such practices are in turn at the detriment of banking performance. However, these can be addressed by stockholders adopting strategies which bring about financial reward as these will motivate managers to put in their best as regards to the banking operations (Waweru,
2013). Similarly, issuing of threats can also be used as strategies by the bank owners. Agency Theory therefore provides support for financial performance.

2.3 Empirical Review

The evaluation of previous studies comprising of local and international studies on macroeconomic factors and financial performance was carried out in this section.

2.3.1 Central bank rate and Performance

Kamau (2009) did an examination which set to establish how central bank rate affects banks’ profitability. The analysis was premised on multiple regression model. Results of the research indicate that CBR negatively but significantly influences performance as checked through ROA. The in hand study adopted R0E as a stand-in for banking performance. Furthermore, the current study utilized panel regression known as more superior approach as it is able to cover larger sample.

Kimani (2013) looked at monetary plan impact on Kenyan banks performance. The main focus was CBR, CRR, OMO and money supply and ROA. Using multiple regression analysis, outcome depicted that CBR had a noteworthy consequence on performance, yet the findings relied on multiple regression. The research based its reliance on a panel regression technique and diagnostic tests were done to determine if the study information was suitable for inferential scrutiny.
A study was undertaken by Mulwa (2015) focusing on how policy on monetary issues influence performance of banks operating in Kenya. Time scope was based on years 2010 to 2014. Independent variables included CBR, OMO, and Reserve Ratio obligation while the dependent variable was banking performance where Net Interest Margin was used. Results of the research reveal that CBR negatively and immaterially affect bank performance in Kenya. However, the research looked at performance in terms of NIM, the current study measured performance in terms of ROE. The choice of ROE is in consideration of the fact that some of the banks are listed at NSE. In addition, among the profitability ratio of banks in Kenya as indicated by World Bank (2017), ROE is characterized by a declining trend.

Ndugbu and Okere (2015) examined Policies on pecuniary matters and its consequence on banks performance in Nigeria. Data collected was from period 1993 to 2013. The predictor variables of were CBR, CRR, liquidity and money supply and the dependent variable was performance. Findings from the multiple regression analysis show CBR to negatively and insignificantly impact performance. The focal point of the investigation was banks in Nigeria. Kenyan banks were the center of the current study.

2.3.2 Money Supply and Financial Performance

Kimani (2013) researched on pecuniary procedures and their influence on the performance of Kenyan Banks. The focus was on CBR, CRR, OMO and money supply and ROA. With multiple regression, research results indicate that supply of Money has a momentous effect of performance. However, the findings of the study were premised on multiple regression.
Similarly, ROA was adopted as a stand-in for performance whereas the, present study considered ROE as a measure performance. ROE allows for comparison of banks with different asset structures. The current study was guided by panel regression analysis where analytic tests were done to determine sufficiency of data prior to assembling conclusions and recommendations.

Borio et al. (2015) in their study focused on monetary policy and their implications on banks’ profitability. It was done using a non linear method where for the years 1995 to 2012 for 109 intercontinental banks cutting across fourteen developed countries were used. The outcome of the shows that Money supply has a momentous positive association with bank profitability. Nonetheless, it was centered on ROA to point on performance. This study is different as it looked at financial performance in terms of ROE. Also, the study was on developed countries unlike Kenya which is a developing country.

Ndugbu and Okere (2015) carried out a research on fiscal plan and its consequence on performance of Nigerian banks. Data collected covered the period 1993 to 2013. They focused on CBR, CRR, money supply and liquidity ratio and banks performance. Results from multiple regression scrutiny prove that supply of money has a positive and inconsequential influence on performance. However, the research concentrated on banks in Nigeria, therefore, such results may not be applicable to Kenya. This is accredited to the reality that each country is unique with different economy size, market size and concentration. This research focused on banks situated in Kenya.
Mulwa (2015) conducted an empirical scrutiny on how monetary policies impact performance of banks situated in Kenya. The period 2010-2014 was the scale of the study. Monetary plan was proxied CBR, OMO, and Reserve Ratio prerequisite while banking performance was proxied using NIM. The research results disclose that supply of money has a positive and immaterial consequence on banks' performance in Kenya. Remarkably, the research was guided by multiple regression. In view of the fact that panel data was used, the current investigation was guided by panel regression. Furthermore, diagnostics test were carried out on the data prior to making inferences and conclusions.

### 2.3.3 Inflation and Financial Performance

Buyinza (2010) carried out an analysis of commercial banks profitability countries in Sub Sahara Africa. The research was based on twenty three banks, and time period of the research was 1999 - 2006. Panel regression was relied on where the results disclosed that inflation absolutely and considerably affects banks’ profitability. Notably, this was centered on banks in Sub-Sahara Africa which is a cross nation research. Contrasting the present study which Kenya, thereby provide state specific results.

Macharia (2013) researched on consequence of inflation on banks’ performance. The analysis was centered on Kenyan banks that provide mortgage. Results show inflation to have an inverse consequence on banks’ performance. The research focused on banks that offer mortgage finance. This research concentrated on all banks in Kenya. Thus adopting a census sampling thus enhancing validity of research data.
Otuori (2013) carried out an analysis on consequence of exchange rate on bank performance in Kenya, data analysis used multiple regression. The results reveal inflation rate to negatively impact on bank performance in Kenya. Nonetheless, it was focused on Kenyan non listed banks. The present study’s focal point was the banks situated in Kenya. Thus, census was utilized in enhancing reliability of research findings.

Kiganda (2014) studied external influences and how they can change bank profitability in Kenya with focus on one bank; Equity Bank. The independent variables were inflation, GDP and exchange rate. Data was collected for a time period 2008 - 2012. The scrutiny of the research used multiple regression. The outcome illustrated inflation has a positive inconsequential consequence on performance. Nonetheless, it was grounded on Equity Bank only. Therefore, the findings from such analysis cannot be contextualized to all banks. In bridging this, the present research covered all the Kenyan commercial banks within the study period.

2.3.4 Exchange Rate and Financial Performance

In Nigeria, Ajayi and Atanda(2012) researched on fiscal procedure effects on performance of banks in the Nigerian context. The years 1980 - 2008 were the time period. The Engle-granger two-step co integration approach was used. Research findings show that there exist a positive and noteworthy link between inflation and bank performance. The present study was centered Kenyan context.

Otuori (2013) did an analysis on the consequence of determinants of rate of exchange on bank performance. Using multiple regression results of the research reveal that exchange rate had an
inverse effect on performance of banks in Kenya. The conclusion was that lower bank profitability is linked to higher exchange rates. However, the study was centered on ROA as a determinant of performance. Furthermore, diagnostic test were not carried out to make certain the sufficiency of research data before inferential analysis. The current study looked at performance in terms of R0E. In addition, the study was based 0n panel regression model and diagnostic tests were carried out before making inferences and conclusions.

Kwakwa (2014) researched on performance determinants Ghanaian commercial banks. Exchange rate and its effect on performance was the focus of the research where performance was looked at in respect of ROA. The study findings disclosed that the rate of exchange has an inconsequential and inverse consequence on banks performance via Return on Assets (ROA). Nonetheless, the study’s focal point was bank in Ghana. The research was carried out for banks in Kenya.

Kiganda (2014) studied external, factors and implications on profitability Kenyan Banks where with the research focus was Equity Bank Limited. The time extent of the research was the period 5 years ranging from 2008 to 2012. Specifically, on exchange rate and inflation, the results from the multiple regression showed that exchange rate has a negative but however, immaterial consequence on commercial banks’ performance. Nonetheless, IT was centered on one bank (Equity Bank). The present study was based on 40 Kenyan banks.
2.4 Summary of Literature Review and Research Gaps

Empirical literature review provides substantiation of research gaps which range from background gaps, conceptual gaps and methodological gaps. Most studies on macroeconomic factors and performance were centred on other countries. Similarly, most studies were based on ROA as a determinant of performance. Moreover, most of the studies used multiple regression analysis.

Table 2.1: Summary of Literature Review and Research Gaps

<table>
<thead>
<tr>
<th>Author</th>
<th>Focus of the study</th>
<th>Key Findings</th>
<th>Research Gaps</th>
<th>Focus of Current Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyinza (2010)</td>
<td>consequence of inflation on profitability of banks</td>
<td>Found inflation to have a positive and noteworthy effect on profitability</td>
<td>Cross-country analysis</td>
<td>Kenyan banks. Thus, providing country precise results</td>
</tr>
<tr>
<td>Ajaayi and Atanda(2012)</td>
<td>consequence of exchange rate on Performance of banks in Nigeria</td>
<td>Found positive and immaterial effect of exchange rate on performance</td>
<td>centered on banks in Nigeria.</td>
<td>The research was based on banks in Kenya</td>
</tr>
<tr>
<td>Kwakwa (2014)</td>
<td>The determinants of performance of banks in Ghana.</td>
<td>Exchange rate had an of no consequence and</td>
<td>The study’s attention was banks in Ghana.</td>
<td>Focal point was banks in Kenya. Performance</td>
</tr>
</tbody>
</table>
2.5 Conceptual framework

Central Banks Rate, Money Supply, Inflation and Exchange-Rate comprise the predictor variables of the research where performance was the dependent variable. This study adopts the
conceptual framework illustrated in the figure below.

![Conceptual Framework Diagram](image)

**Independent Variables**

- **Central Bank Rate**
  - Central Bank- Base Rate as Percentage

- **Money Supply**
  - MM2

- **Inflation**
  - Inflation rate

- **Exchange Rate**
  - Ksh/USD

**Dependent Variable**

- **Financial Performance**
  - Return on Equity

*Figure 2:1 - Conceptual framework*

*Source: Author (2019)*
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This section shows the method that was used in collecting and analysing data in the research. It describes; research design, sampling technique, population and instruments for collection of data and procedures, reliability and validity of the study. It also describes how data was processed and analysed and ethical considerations to achieve the stated objectives.

3.2 Research Design
Mugenda and Mugenda (2013) contend that design of research provides the guide and route to be followed in a study. Causal design of research was used. Causal design is used at examining cause and effect relationships between variables in a research (Cooper & Schindler, 2011). Therefore, causal design provides a framework for studying such relationships in a study. This therefore is appropriate for this study as it sought to examine the effect of macroeconomic factors on financial performance of commercial banks in Kenya.

3.3 Target Population
Target population is regarded as whole units of interest to a researcher in a study (Ngechu, 2004). Target population is the units of interest upon which research findings are linked to. Therefore, the research target population comprised 43 banks regulated and registered by the CBK. The unit of analysis was therefore there the commercial banks operating in Kenya.
3.4 Sampling Design

The process of picking a population subset in a research study is referred to as sampling. The focus of this investigation was 43 banks operating within Kenya within the time period of the study. However, three banks were eliminated in the study that is Chase bank, Imperial bank and Dubai Bank and therefore 40 banks were considered. This is due to the fact that these banks had been placed under receivership. Therefore, the current study adopted a census. Census research is used in a case where total population of interest is being considered is small.

3.5 Data Collection.

Secondary data was relied upon in the study. The data was applied to facts, postulations and basis contained in the documentary sources. It was sourced from Published commercial banks’ Financial Statements, statements on monetary issues and appropriate CBK reports. The data on financial performance, that is return on equity was extracted from the audited financial statements of commercial banks and Central Bank of Kenya reports for the years 31st December of 2012 to 2016. Data on Inflation, CBR, money supply and exchange rate for Kenya for the period 2012 to 2016, that is five (5) years were also extracted from the website of the Central Bank of Kenya and Kenya National Bureau of Statistics. Data was collected with the aid of a document review guide.

3.6 Operationalization and Measurement of Variables

This section contains the Operationalization and measurement of the study variables. This is presented in Table 3.1.
### Table 3.1: Operationalization and Measurement of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Operationalization</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Performance</td>
<td>Dependent</td>
<td>Return on shareholders’ wealth</td>
<td>ROE in millions</td>
</tr>
<tr>
<td>Central Bank Rate</td>
<td>Independent</td>
<td>CBK charges on loans to banks</td>
<td>Measured using CBK base rate</td>
</tr>
<tr>
<td>Money Supply</td>
<td>Independent</td>
<td>Volume of money circulating in a particular time in a nation’s economy</td>
<td>Growth of supply of Money.</td>
</tr>
<tr>
<td>Inflation</td>
<td>Independent</td>
<td>Consumer Price Index</td>
<td>Inflation Rate in %</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>Independent</td>
<td>Amount of KSh to a US dollar</td>
<td>Ksh/USD</td>
</tr>
</tbody>
</table>

Source: Researcher (2019)

### 3.7 Data Analysis and Presentation

The study was based on secondary data which was panel in nature as it comprised of both cross sectional and time series data. The data collected was entered into an excel sheet, checked for
outliers and then transferred to Stata software for purposes of analysis. The data scrutiny of the research was premised on descriptive and inferential analysis. Descriptive analysis presented statistics which provided the broad features of data. These statistics took account of mean, standard deviation, maximum and smallest numbers. The descriptive statistics provided better understanding of the study data.

Inferential investigation was done by means of panel regression. Diagnostics tests for panel regression analysis were banking conducted before the inferential analysis. The results and conclusions of the research were premised on panel regression analysis. Therefore, performance of banks was displayed in the equation below as a factor of inflation, CBR, money supply and exchange rate.

\[ Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \epsilon_{it} \]

Where:

\( Y_{it} \) – Financial Performance

\( \beta_0 \) - Constant

\( X_{1it} \) – Central Bank Rate

\( X_{2it} \) – Money Supply

\( X_{3it} \) – Inflation

\( X_{4it} \) – Exchange Rate
\( \beta_1 - \beta_4 = \) Regression coefficients \\
\( \epsilon_{it} = \) Error term

**3.8 Diagnostic Tests**

The tests ensure non-violation of the assumptions of the CLRM. In the case of violation, the study runs the risks of having biased, inconsistence and inefficient parameter estimates. The study used the pre estimation and post estimation diagnostic tests such as stationarity, multicollinearity and normality.

**3.8.1 Stationarity**

According to Guraji (2003), estimating of data without taking into consideration of the non-stationary nature of data might result to biased results. The panel data for the study had both cross sectional and time series thus the need to ascertain its stationarity arises to avoid biasness of the assumption of time series data variables being stationary. The Augmented Dickey Fuller test was used to test for stationarity. In the presence of unit root, the affected variables are differenced.

**3.8.2 Multicollinearity**

According to Cooper and Schindler (2008), indicates the need to test for the multicollinearity to avoid indeterminate regression coefficients and infinite standard errors that affect the dismissal or approval of the null hypothesis. This is because the presence of severe multicollinearity leads to the possibility of making wrong inferences and as such leading to wrong conclusions. The
study tested for the multicollinearity based on the correlation matrix for the panel data of 2012-2016 based on a threshold of greater than 0.8 or less than 0.8. Variable with high level of collinearity are eliminated.

3.8.3 Normality

Normality is carried out to ascertain the distribution of the variables in a research. This is because the non normal distribution of variables can lead to wrong inferences. Shapiro wilk test was employed. The hypothesis of this test was normal and non normal distribution for the null and alternative hypotheses respectively which was based on 0.05 level of significance. A p-value of < 0.05 implies that the null hypothesis is is to be rejected, that is the data is not normally distributed. If p-value is > 0.05 the data is normally distributed.

3.8.4 Hausman Test

The hausman test was done to select the finest model for the regression analysis. Here, the null hypothesis states that random effect model is the favored model. On the other hand, the fixed effect model is favored by the alternative hypothesis. This was guided by a 5% significance level. A p value of less than 0.05 implies that the fixed effect model should be utilized, therefore, reject the null hypothesis.

3.9 Ethical Consideration

Ethical considerations are of high importance in a research study. They guide a research on what is wrong and right in a research. Ethical principle was highly followed in the course of this study.
Similarly, unethical practices such as falsification and fabrication were avoided. Research permit was provided by NACOSTI and was used for the data collection of the study.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter encompasses the analysis of data, presentation and interpretation. The analysis of data was guided by descriptive and panel regression analysis.

4.2 Descriptive Statistics

Descriptive analysis is done on research data to provide the basic feature of the data. The analysis provides statistics such as standard deviation, mean, maximum and minimum values and total number of observations. Table 4.1 provides the summary of descriptive statistics.

Table 4.1 Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>200</td>
<td>0.184</td>
<td>0.108</td>
<td>0.000</td>
<td>0.494</td>
</tr>
<tr>
<td>CBBR</td>
<td>200</td>
<td>9.900</td>
<td>1.244</td>
<td>8.500</td>
<td>11.500</td>
</tr>
<tr>
<td>Money supply</td>
<td>200</td>
<td>3.228</td>
<td>0.091</td>
<td>3.093</td>
<td>3.349</td>
</tr>
<tr>
<td>Inflation</td>
<td>200</td>
<td>7.234</td>
<td>2.495</td>
<td>2.700</td>
<td>10.000</td>
</tr>
<tr>
<td>ExchangeRate</td>
<td>200</td>
<td>93.517</td>
<td>7.676</td>
<td>84.500</td>
<td>103.400</td>
</tr>
</tbody>
</table>

Source (Research findings, 2019)

Table 4.1 shows ROE having 0.184 and 0.108 as mean and standard deviation respectively. The higher value of 0.000 and lowest value of 0.494. CBBR obtained a mean of 9.900 and 1.244 as standard deviation. Also, Money supply’s mean was 3.228 and a standard deviation was 0.091.
Furthermore, for the inflation the mean was 7.234 and standard deviation was 2.495. Lastly, exchange rate had 7.676 and 93.517 in terms of standard deviation and mean respectively which is an indication that exchange rate has been highly volatile during the period.

4.2 Diagnostic Test

These tests are carried out prior to inferential analysis with an aim of ensuring that the research data set is sufficient for further investigation.

4.2.1 Stationarity Test

The Augmented Dickey Fuller test was used to test for stationarity and findings are presented in Table 4.2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>-7.394</td>
<td>0.0000</td>
</tr>
<tr>
<td>CBRR</td>
<td>-14.712</td>
<td>0.0000</td>
</tr>
<tr>
<td>Money Supply</td>
<td>-12.881</td>
<td>0.0000</td>
</tr>
<tr>
<td>Inflation</td>
<td>-21.345</td>
<td>0.0000</td>
</tr>
<tr>
<td>Exchange rates</td>
<td>-6.379</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source (Research findings, 2019)

Data having an aspect of times series is required to be stationary before regression. This is because the non stationary of data often leads to inefficient estimates. ADF test was utilized to check for the stationarity of data. The null hypothesis for the ADF assessment states that the data is non stationary, on the other hand, the alternative hypothesis states that the data is stationary. A
p-value of less than 0.05 point toward stationarity which is the case in this study; therefore, null hypothesis of non stationary of data is rejected. It is concluded that all the variable were stationary.

### 4.2.2 Test for Correlation

The test is carried out to determine how strongly a pair of variables in a study is correlated. The test for correlation is presented in Table 4.3.

**Table 4.3 Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>CBBR</th>
<th>Money Supply</th>
<th>Inflation</th>
<th>Exchange rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBBR</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money Supply</td>
<td>0.1055</td>
<td>1.0000</td>
<td>0.1369</td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>0.0283</td>
<td>0.0141</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Exchange rates</td>
<td>-0.0889</td>
<td>-0.0231</td>
<td>0.0080</td>
<td>1.0000</td>
</tr>
<tr>
<td></td>
<td>0.2106</td>
<td>0.7452</td>
<td>0.9109</td>
<td></td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed).

**Significant at 0.05**

**Source (Research findings, 2019)**

Table 4.3 indicated that the correlation between CBBR and Money supply is found to be non-significant with r of 0.1055, p-value =0.1369. Similarly, Inflation and CBBR were non-significantly correlated depicted by r of 0.0283 , p-value =0.6910. Exchange rate and CBBR was also found to have an insignificant correlation with as indicated by a p-value of 0.2106. Inflation
and supply of money were also had a non significant association as seen from the p value of 0.8429. The correlation between exchange rates and inflation was statistically non significant; p value= 0.9109. Notable, the statistics presented in Table 4.3 showed that the data set doesn’t bear the problem of multicollinearity. This is in line with Greene (2008) who asserts that a matchup of variable with a correlation numbers of 0.8 or -0.8 (that is, r squared of 64% or more), indicates a rigorous setback of multicollinearity. Based on this, there exist no problem of multicollinearity among the data.

**4.2.3 Normality Test**

The test for normality done to ascertain if the data has a normal distribution. This is because the non normal distribution of the data set often leads to biased and inefficient estimates. The test for normality was carried out using the Shapiro Wilk Test where the threshold is based on the 5% significant level. Therefore, a p-value of less than 0.05 implies that data has non normal distribution, conversely, a p-value greater than 0.05 indicates that the data set has a normal distribution. The results for the test for normality is presented in Table 4.4

**Table 4.4 Shapiro Wilk Normality test**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>W</th>
<th>V</th>
<th>Z</th>
<th>prob&gt;z</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>200</td>
<td>0.9767</td>
<td>1.091</td>
<td>0.986</td>
<td>0.721</td>
</tr>
<tr>
<td>Money supply</td>
<td>200</td>
<td>0.9788</td>
<td>1.832</td>
<td>1.391</td>
<td>0.382</td>
</tr>
<tr>
<td>Inflation</td>
<td>200</td>
<td>0.8322</td>
<td>1.991</td>
<td>1.492</td>
<td>0.297</td>
</tr>
<tr>
<td>Exchange rates</td>
<td>200</td>
<td>0.9317</td>
<td>1.676</td>
<td>1.033</td>
<td>0.075</td>
</tr>
</tbody>
</table>
If p value is > 0.05 the data is normally distributed

Under this test, the null hypothesis the data is non-normally distributed whilst the null hypothesis implies that data is normally distributed. A p-value of < 0.05 implies that the null hypothesis is to be rejected, that is the data is not normally distributed. If p-value is > 0.05 the data is normally distributed. From the table above, the data was normally distributed as depicted from the p values.

**4.2.4 Test For Fixed and Random Effect**

The test for fixed and random effect is done to select the finest model to be used in the regression analysis. The test for fixed and random effect was done through hausman specification. In this test, the random effect model is favored in the null hypothesis, conversely, the fixed effect model is favored in the alternative hypothesis. A p value of < 0.05 rejects null-hypothesis and as such the fixed effect is used, on the other hand a p value of > 0.05 fails to reject the null hypothesis implying that the random effect model is preferred.
Table 4.5 Hausman Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Difference</th>
<th>sqrt(diag(v_b-B))</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBBR</td>
<td>-.0062182</td>
<td>-.0062217</td>
<td>.0000035</td>
<td>.0002323</td>
<td></td>
</tr>
<tr>
<td>Moneysupply</td>
<td>.8562535</td>
<td>.8558939</td>
<td>.0000359</td>
<td>1.29e-7</td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>-.0003105</td>
<td>-.0002463</td>
<td>-.0000643</td>
<td>.0001439</td>
<td></td>
</tr>
<tr>
<td>ExchangeRate</td>
<td>.0001380</td>
<td>.0001379</td>
<td>6.85e-08</td>
<td>.0000465</td>
<td></td>
</tr>
</tbody>
</table>

\( b = \) consistent under Ho and Ha; obtained from xtreg
\( B = \) inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

\[
\chi^2(4) = (b-B)' \left[ (v_b - v_B)^{-1} \right] (b-B)
\]

\[
= 0.22
\]

Prob>\chi^2 = 0.9945

The hausman test indicates a p-value of 0.9945 as shown in Table 4.5, therefore more than 0.05. In line with the threshold of the hausman test the null-hypothesis was not rejected as such the random effect model was utilized.

4.3 Regression Analysis

The analysis of data was based on panel regression where ROE was used as a function of macroeconomic factors.
Table 4.6: Panel regression

Random-effects GLS regression

<table>
<thead>
<tr>
<th>Number of obs</th>
<th>=</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group variable: bank</td>
<td>Number of groups</td>
<td>=</td>
</tr>
</tbody>
</table>

R-sq: within = 0.4527
between = 0.5614
overall = 0.5143
Obs per group: min = 5
avg = 5.0
max = 5
Wald chi2 (4) = 30.21
Prob > chi2 = 0.0000
Corr(u_i,x) = 0 (assumed)

| ROE               | Coef.     | Std. Err. | Z      | P>|z|  | [95% Conf. Interval] |
|-------------------|-----------|-----------|--------|------|----------------------|
| CBBR              | -.0062217 | .0029438  | -2.11  | 0.035* | -.0119915 to -.0004520 |
| Money supply      | .8558939  | .1411391  | 6.06   | 0.000* | .5792663 to 1.1325210 |
| Inflation         | -.0002463 | .0015545  | -0.16  | 0.874 | -.0032930 to .0028005 |
| Exchange rate     | .0001379  | .0005048  | 0.27   | 0.785 | .0562235 to .2361158  |
| _cons             | -.1924465 | .0401182  | -4.80  | 0.000* | -.2710768 to -.1138162 |

Sigma_u .03795630
Sigma_e .03454017
rho .54701695 (fraction of variance due to u_i)

*Significant at 0.05

Table 4.6 presents the panel regression which is based on a direct effect of CBBR, money supply, inflation and exchange rate on ROE. The regression model has an overall R squared of 0.5143 which implies that the independent variables are important in explaining ROE. Specifically, a unit increase in CBBR leads to a decrease in ROE by 0.006 which is considerable with a p-value of 0.035 at 0.05 significance. Secondly, a component increases in money supply increases ROE by 0.855 which is also noteworthy with a p-value of 0.000 at 0.05 significant level. Furthermore, the regression results showed that an increase in inflation by 1 unit decreases
ROE by 0.0002 which is however non-significant as it had a p-value of 0.874 which is bigger than 0.05. Lastly, the research findings as presented in Table 4.6 showed that a unit raise in exchange rate brings about a 0.001 increase in ROE of commercial banks in Kenya. with a p-value of 0.785 this is insignificant at 0.05 significant level.

As indicated in the results in Table 4.6, the estimated model was as shown below:

\[ Y = 0.1924 - 0.0062X_1 + 0.8558X_2 - 0.0002X_3 + 0.0001X_4 \]

Where;

\( Y \) = Financial performance.
\( X_1 \) = Central Bank Base Rate
\( X_2 \) = Money Supply
\( X_3 \) = Inflation
\( X_4 \) = Exchange Rate

4.4 Hypotheses Testing

The hypothesis testing was consistent with the explicit objectives of the research.

4.4.1 Central Bank Base Rate

The initial purpose of was to establish the consequence of central bank rate on performance of Kenyan banks.

The first Hypothesis tested was:
H$_{01}$: Central Bank Rate has no significant effect on performance of commercial banks in Kenya.

The hypothesis was tested using panel regression analysis with the use of p-value method based on 0.05 significant level. A p-value of less than 0.05 implies that the null hypothesis is rejected and conversely, a p-value greater than 0.05 means fail to reject the null hypothesis. The outcome of the study showed that CBK Base Rate has a negative and significant consequence on banking performance in the Kenyan context which is indicated by a p-value of 0.035 at 0.05 significant level.

Results regarding CBR and financial performance are in agreement with that of Kamau (2009) who found that CBR negatively and significantly influences performance as measured by ROA. Also, Mulwa (2015) found that CBR negatively and inconsequentially impacts on bank performance in Kenya. However, the research looked at performance in terms of NIM. Similarly, Ndugbu and Okere (2015) carried out an examination on fiscal policy and its influence and the banks performance in Nigeria. Findings from the multiple regression analysis show CBR to negatively and insignificantly impact on performance. The difference in the outcomes can be qualified to the fact that the research’s concentration was on banks in Nigeria, whereas the current study was based on Kenya banks.

4.4.2 Money Supply

The subsequent purpose was to analyze the impact of supply of money on the performance of banks in Kenya.
The second hypothesis tested was:

**H₀₂**: *Money Supply has no significant effect on financial performance of banks in Kenya.*

The hypothesis was tested using panel regression with the use of p-value method based on 0.05 significant level. A p-value of less than 0.05 implies that the null hypothesis is rejected and conversely, a p-value greater than 0.05 means fail to reject the null hypothesis. The results showed that money supply has a positive and significant effect on banking performance in Kenya which is indicated by a p-value of 0.000 at 0.05 significant level.

The findings of the study are in line with that of Borio *et al.* (2015) investigated on policies on monetary issues and profitability of 109 international banks cutting across 14 developed countries. The outcome of the research demonstrates that supply of money has a considerable positive relationship with bank profitability. Conversely, Ndugbu and Okere (2015) found that money supply has a positive and insignificant influence on performance. Notably, the research’s focal point was banks in Nigeria, thus the reason for the varying result. Similarly, Mulwa (2015) found that money supply had a positive and insignificant impact on banks performance. Notably, the research’s focus was on a multiple regression and NIM was used to evaluate performance.

### 4.4.3 Inflation

The third purpose was to assess the consequence of inflation on performance of banks in Kenya.

In line with this, the third hypothesis test was:

**H₀₃**: *Inflation has no significant effect on financial performance of commercial banks in Kenya.*
The hypothesis was tested using panel regression with the use of p-value method based on 0.05 significant level. A p-value of less than 0.05 implies that the null hypothesis is rejected and conversely, a p-value greater than 0.05 means failure to reject the null hypothesis. The findings from regression examination indicate that inflation has a negative and insignificant effect on financial performance of commercial banks in Kenya which is indicated by a p-value of 0.874 at 0.05 significant level.

The findings of the study are at variance with that of Buyinza (2010) who carried out an analysis of banks profitability countries in Sub-Sahara Africa. The results indicated that inflation positively and significantly affects banks’ profitability. Notably, this was centered on banks in Sub Sahara Africa which is a cross country research. The findings of the study concur with that of Macharia (2013) who found inflation to have an inverse effect on banks’ performance. Similarly, Otuori (2013) analyzed on the impact of exchange rate on bank performance of in Kenya, the results reveal inflation rate to negatively impact on bank performance in Kenya. Conversely, Kiganda (2014) who focused on one bank Equity Bank. The independent variables of were inflation, exchange rate and GDP found that inflation has a positive insignificant impact on performance. The difference in the results can be accredited to the fact that the study analyzed a single bank (Equity Bank).

4.4.4 Exchange Rate

The fourth purpose was to settle on the result of exchange rate on performance of banks in Kenya.
The fourth purpose tested was:

\( H_0: \text{Exchange Rate has no significant effect on financial performance of commercial banks in Kenya.} \)

The hypothesis was tested with panel regression with the use of p-value method based on 0.05 significant level. A p-value of less than 0.05 implies that the null hypothesis is rejected and conversely, a p-value greater than 0.05 means failure to reject the null hypothesis. The results showed that exchange rate has a positive and insignificant effect on performance of banks in Kenya which is indicated by a p-value of 0.785 at 0.05 significant level.

The results on the influence of exchange rate on performance of banks varies with that of Ajayi and Atanda (2012) for Nigeria whose findings reveal that there exist a direct and strong relationship between inflation and bank performance. Remarkably, it was based on Nigerian banks, thus the reason for the varying results. Similarly, Otuori (2013) reveal that exchange rate had a negative effect on financial performance of banks in Kenya. Importantly, the research was centered on ROA as a measure of banking performance whereas this study was based on ROE. This therefore may be attributed to the variation in research findings.
CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five exhibits the summing up, conclusion and policy recommendations from the study. It further encompasses the suggestions for further research.

5.2 Summary of the Study

The financial performance of banks is paramount for the prosperity and growth of countries. The poor performance of Kenyan banks was what informed the study. The research purposed to assess the influence of monetary policy and economic conditions on the performance of banks in Kenya.

\[ Y = 0.1924 - 0.0062X_1 + 0.8558X_2 - 0.0002X_3 + 0.0001 \]

According to the results obtained on the effect of CBK rate on the financial performance of banks, a unit increase in the rate other factors held constant results in a decline in financial performance by 0.0062 times. The findings further indicate a negative correlation between the central bank rate and ROE. This association was significant as exposed by the p value of 0.035.

Secondly, on the effect of money supply on the performance of banks in Kenya, the findings disclose that a rise in money supply by one unit holding other factors constant results in a 0.8558 times increase in the performance of commercial banks. The findings reveal a significant positive association between the money supply and the ROE. The p value was 0.000.
Thirdly, the findings disclose that with a unit increase in the rate of inflation other factors held constant, there is a decrease in the financial performance of commercial banks by 0.0002 times. This reveals an inverse relationship between inflation and financial performance. From the findings, there is a negative relationship between the inflation and ROE. The relationship was non considerable as shown by the p value of 0.874.

Finally exchange rates had a positive and insignificant effect on financial performance of commercial banks in Kenya. A unit increase in the exchange rate other factors held constant, leads to a rise in financial performance by 0.0001 times. Results reveal a non significant positive relationship between the exchange rate and ROE.

The study focused on 40 banks from 2012 to 2016. Causal design of research was used at examining cause and effect relationships between variables in a research. Census research is adopted in where the total population of interest is being considered is small. Panel regression was used for the scrutiny of the study. The data analysis of the research was descriptive and inferential analysis.

The results showed that CBK Base Rate inversely and strongly impacts on banking performance in Kenya. Also, money supply was found to have a positive and significant effect on banking performance in the context of Kenyan commercial banks. Furthermore, inflation was found to have an inverse and insignificant influence on performance of banks in Kenya. Lastly, the results
of the study showed that exchange rate has a positive and insignificant effect on performance of banks in Kenya.

5.3 Conclusion

The conclusion is informed by the findings in this study. Firstly, in respect to the consequence of Central Bank Base Rate on performance of banks. The study concluded that that Central Bank Base Rate has a negative and significant effect on financial performance of commercial banks in Kenya. This implies that the higher the CBBR, the higher the performance of Kenyan Banks.

Secondly, in relation to money supply and how it affects banking performance in Kenya, the conclusion of the research is that money supply has a positive and significant effect on financial performance of commercial banks in Kenya. This therefore, means that higher money supply into the economy improves the financial performance of Kenya banks. This may be qualified to the idea that higher supply of money makes additional money available for business activities which improves banking performance.

Thirdly, in relation to the consequence of inflation on the performance of banks, the study concluded that inflation has an insignificant negative effect on the financial performance of banks in Kenya. This can be ascribed to the fact that inflation when well predictable by bank management does not hamper the financial performance of banks as they put in place measures to quickly cushion the effect of inflation on financial performance of banks.
Lastly, based on the effect of exchange rate on performance of banks in Kenya, the research study concluded that exchange rate has a positive but insignificant effect on financial performance of banks in Kenya. This result can be attributed to the notion that though banks carry out international banking activities, when the fluctuations of exchange rates are effectively and efficiently managed, it can lead to minimal effects on the performance of banks.

5.4 Policy Recommendations

The study concluded that that Central Bank Base Rate has a negative and significant effect on performance of commercial banks in Kenya. This implies that the higher the CBBR, the higher the financial performance of Kenyan Banks. Therefore, the Central Bank is advised to be cautious in setting the base rate, it should be go lower rather than higher as this impacts negatively on the financial performance of commercial banks.

Secondly, the study concluded that money supply has a positive and significant effect on financial performance of commercial banks in Kenya. This therefore, means that higher money supply into the economy improves the financial performance of Kenya banks. Therefore, the government of Kenya through the Central Bank of Kenya should ensure adequate supply of money in the economy as higher supply results in better financial performance of commercial banks in Kenya.

Thirdly, the study concluded that inflation negatively affects the financial performance of commercial banks in Kenya. The study therefore recommends that bank managers should have full knowledge of prevailing price levels and as well as anticipate any changes that are likely to
occur in price levels fluctuations. Lastly, the study concluded that inflation negatively affects the financial performance of commercial banks in Kenya. The recommendation of the study is that exchange rates should be well anticipated by bank managers as this is influenced by demand and supply forces in the market environment. Also, banks can transact in less volatile currencies in periods of high exchange rates.

5.5 Suggestions for Further Studies

The study was based on the effect of macro-economic factors on financial performance of commercial banks in Kenya. The measure of financial performance was based on profitability ratio which is return on equity (ROE). The study recommends that further studies should incorporate liquidity ratios as measure of financial performance of commercial banks. Further studies can also consider bank size and assess its moderating effect on the relationship between macroeconomic factors an financial performance of commercial banks.
REFERENCES


Al-Qudah, A. M & Jaradat, M. A (2013) The impact of Macroeconomic variables and banks characteristics on Jordanian Islamic banks profitability: Empirical Evidence. International Business Research; 6 (10); 2013 ISSN 1913-9004 E-ISSN 1913-9012 Published by Canadian Center of Science and Education


www.iiste.org ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) 7(17), 2015.


APPENDICES

Appendix i: Letter of Approval Research Project Proposal

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

FROM: Dean, Graduate School
DATE: 18th October, 2018

TO: Samuel Omboke Nyahute
C/o Accounting and Finance Dept.

REF: D53/OE/CTV/32167/2016

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 11th October, 2018 approved your Research Project Proposal for the M.B.A Degree Entitled, "Monetary Policy, Economic Conditions and Financial Performance of Commercial Banks in Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

ELIJAH MUTUA
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Accounting and Finance.

Supervisors:

1. Dr. Daniel Makori
   C/o Department of Accounting and Finance
   Kenyatta University
Appendix ii: Research Authorization by NACOSTI

National Commission for Science, Technology and Innovation

Ref: NACOSTI/P/18/39365/26572

Date: 15th November, 2018

Samuel Omboke Nyabute
Kenyatta University,
P. O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Monetary policy, economic conditions and financial performance of Commercial Banks in Kenya” I am pleased to inform you that you have been authorized to undertake research in all Counties for the period ending 15th November, 2019.

You are advised to report to the Chief Executive Officers of selected Commercial Banks, the County Commissioners and the County Directors of Education, all Counties before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

Godfrey P. Kalerwa MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Chief Executive Officers
Selected Commercial Banks.

The County Commissioners
All Counties.
Appendix iii: List of Commercial Banks in Kenya

1. I & M Bank Limited
2. Equity Bank Limited
3. Prime Bank Limited
4. Bank of Baroda (K) Limited
5. CFC Stanbic Bank Limited
7. First Community Bank Limited
8. UBA Kenya Bank Limited
9. Diamond Trust Bank Kenya Limited
10. Guaranty Trust Bank (K) Limited (Formerly Fina Bank Limited)
11. NIC Bank Limited
12. Charterhouse Bank Limited
13. Family Bank Limited
15. Citibank N.A Kenya
16. Barclays Bank of Kenya Limited
18. Consolidated Bank of Kenya Limited
19. Jamii Bora Bank Limited
20. Middle East Bank (K) Limited
22. Dubai Bank Kenya Limited
23. Giro Commercial Bank Limited
24. Ecobank Kenya Limited
25. Paramount Universal Bank Limited
26. Chase Bank (K) Limited
27. Fidelity Bank Limited
28. Commercial Bank of Africa Limited
29. Bank of India
30. Guardian Bank Limited
31. Habib Bank A.G Zurich
32. Trans- National Bank Limited
33. Imperial Bank Limited
34. Co-operative Bank of Kenya Limited
35. Credit Bank Limited
36. Oriental Commercial Bank Limited
37. Equatorial Commercial Bank Limited
38. K-Rep Bank Limited
40. Standard Chartered Bank Kenya Limited
41. Kenya Commercial Bank Limited
42. Habib Bank Limited
43. Victoria Commercial Bank Limited.
### Appendix iv: Document Review Guide

<table>
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<tr>
<th>Year</th>
<th>Return on Equity</th>
<th>Central Bank Rate</th>
<th>Money Supply</th>
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<td>2016</td>
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## Appendix v: Return on Equity

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*Source (Central bank of Kenya, 2017)*
### Appendix vi: Macro-Economic Variables

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