THE EFFECT OF SELECTED MACRO-ECONOMIC VARIABLES ON FINANCIAL PERFORMANCE OF THE BANKING SECTOR IN KENYA

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DECLARATION

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

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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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ABREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
CPI	Consumer Price Index
EMH	Efficient Market Hypothesis
GDP	Gross Domestic Product
IPO	Initial Public Offer
KNBS	Kenya National Bureau of Statistics
KSH	Kenya Shillings
MPT	Modern Portfolio Theory
NSE	Nairobi Securities Exchange
SPSS	Statistical Package for Social Sciences
USD	United States Dollar

ABSTRACT

This research was undertaken in order to determine the effect of macro-economic variables on financial performance of commercial banking sector in Kenya. So far, the studies available have arrived at different findings. This study aimed at contributing to determining to what extent macro-economic variables influence financial performance of commercial banking sector in Kenya. The researcher ran a descriptive as well as a correlational study on all the commercial banks in Kenya between January 2008 and December 2017. Data was analyzed using SPSS software version 22 and was presented using graphs and frequency tables. Secondary data on quarterly bank performance was obtained from the Central bank quarterly financial reports while data on macro-economic variables was obtained from both Central Bank of Kenya and Kenya National Bureau of Statistics and was analyzed through both descriptive and inferential statistics. Return on assets was used to measure financial performance while quarterly interest rates, quarterly exchange rates (USD/KSH), quarterly GDP growth rate, and quarterly inflation rates were used to measure interest rates, exchange rates, economic growth and inflation rates respectively. The results of the study indicated that there is a strong relationship (R=0.656) between macro-economic variables and financial performance of commercial banks. The study also recorded an R-squared value of 0.43. This implies 43% of the total variance in financial performance of the commercial banking sector in Kenya can be attributed to macro-economic variables. ANOVA statistics revealed that the regression model was ideal since it had a significance level of 0.000. The study further established that interest rates affect financial performance of the commercial banking sector positively and to a significant extent while the rest of the selected macro-economic variables have no significant effect on financial performance of the banking sector. The study recommends the commercial banking sector in Kenya policy makers should consider interest rates in their policy formulation to manage their effect on the financial performance of the banking sector. The Kenyan Government through the Central Bank of Kenya should come up with policies that create a conducive environment for commercial banks to operate since it will translate to economic growth.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The relationship between macroeconomic factors and performance of firms is a subject that has interested many scholars and practitioners. Often times, it's proved that a firm's performance is dictated by some basic macroeconomic variables like rate of interest, gross domestic product, inflation and exchange rate (Gan, Lee & Zhang, 2006). Financial media affirmation shows that investing people commonly presume that fiscal rule and macroeconomic events have an impact which is considerable on the unpredictability of earnings. As a result of this the variables in macroeconomic environment impact peoples' investment decision and prompt immeasurable investigators to explore the association between investment returns and macroeconomic variables (Peansupap & Walker, 2005).

This study will be based on several theories such as arbitrage pricing theory, inter-temporal capital assets pricing model and the purchasing power parity theory. The multifactor arbitrage-pricing model advances that several macroeconomic variables come into play in determining risk and return relationship of firms hence their financial performance (Saeed & Akhter, 2012). The inter-temporal capital asset pricing model argues that firms can improve their financial performance through diversified allocation of their investments into different asset classes and industrial sectors that are not positively correlated to changes in their industry and macro-economic factors (Suheyli, 2015). The Purchase Power Parity Theory, developed by Gustav Cassel (1918) which examines the exchange rates across different countries and how they relate is another theory that this study will be based on.

The Kenyan Banking industry is regulated by the CBK Act, the Banking Act and the Companies Act and the various regulations issued by CBK. The Kenyan banking sector became free in 1995 upon which the exchange controls were lifted. The CBK is under the Ministry of Finance, is responsible for the formulation and implementation of monetary policies and fostering solvency, liquidity and effective functioning of the financial system (CBK, 2013). Financial performance for most commercial banks has been on the rise in the last 10 years. However, there have been periods where performance either experienced significant fluctuations or deepened. It is therefore imperative to carry a study on the role of macro-economic variables on financial performance of Kenyan banking sector.

1.1.1 Macro-Economic Variables

Macro-economic variables refer particularly to factors of overall importance to the position of countries economy both at the regional and national face .This factors have an impact on a very large proportion of population (Sharma & Singh, 2011). Macro-economic variables are majorly closely scrutinized by business, governments, and consumers due to their influence on overall performance of the economy. Kwon and Shin (1999) in their study concluded that GDP, interest rates, currency exchange rate, inflation, market risk and money supply are the most impactful macroeconomic variables. Mishkin (2004) defines macro-economic variables as the factors which are relevant to an economy as a whole and shake a great populace relatively than a select few of them. The GDP, unemployment, exchange rate and inflation were identified as the variables that have major influence to the economy.

The price at which a debtor pays interest for the utilization of the funds borrowed is referred to as the interest rate. Interest rates are rarely static, often changing with changes in the macroeconomic environment (Ali, 2014). Sill (1996) explains that interest rates react to events in the international and domestic markets, national economic prospects and inflation. Nominal interest rate was a combination of real interest rate and inflation (Fisher 1930). As inflation increases, investors demand higher returns to compensate them for the reduction in the value of their investment.

Inflation rate is the rate whereby the general price levels for products increase with the decrease in the currencies' purchasing power. Simply put it is a situation where too much money chases too few goods with devaluation in currency (Sharma & Singh, 2011). The CPI is often used as an inflation proxy and it is used to measure the current price level relative to the base year selected. The CPI is used to measure fluctuations in prices at retail level and further indicates the purchase price of goods and services used by private households (Subhani, Gul & Osman, 2010).

The growth of the economy is termed as economic growth. Economy refers to the global physical subsystem composed of wealth and stock composition, and the flow between consumption and production (Mishkin & Eakins, 2009). It can also be described as the economic expansion to generate more goods and services. Abbas (2005) defines it a rise in the production and consumption of commodities. The economic growth is mainly measured through the GDP and GNP.

The price of one currency in terms of the other is referred to as the exchange rate (Mishkin & Eakins, 2009). An exchange rate can either be a direct or an indirect quotation. A direct quotation refers to the amount of units of the foreign currency that

could be bought by a unit of home currency whereas an indirect quotation refers to the amount of foreign currency obtainable from a unit of the home currency (Howells & Bain, 2007). The exchange rate is said to be the nominal exchange rate when it includes inflationary effects and is referred to as the real exchange rate when inflationary effects are excluded (Lothian & Taylor, 1997). Prior to 1972, nearly all countries in the world operated on a fixed exchange rate system whereby their individual country's currencies had a fixed rate relative to the US dollar.

1.1.2 Financial Performance

The range by which a firm's financial objectives will or have been met is called financial performance (Yahaya & Lamidi, 2015). A firm's financial performance is subject to its effectiveness in using its assets for its key function of carrying out business and generating revenue. It's also the general state of a firm in terms of finance. Financial performance can as well be used to gauge or measure financial health of firms from the same industry or across different industries for comparison purposes. In summary, it's a crucial objective that firms especially the profit oriented firms desire or aim at to achieve (Kajirwa, 2015).

Financial performance concentrates more on items that influence the firm's financial statements or reports directly. The financial performance analysis can deal with items like sales turnover, dividend growth, asset base and capital employed etc. (Omondi & Muturi, 2013). It's a crucial measure of some economic units' success for instance on achieving of set goals and objectives (Xu & Wanrapee, 2014). Firm's stakeholders are mostly concerned with the firm's performance in terms of finance (Nyamita, 2014).

There are several financial ratios that can be applied in expressing financial performance; these include activity ratios, liquidity ratios, debt ratios and profitability ratios (Bouba, 2011). It can be determined from various perspectives including: liquidity, profitability, and solvency (Mwangi & Angima, 2016). Performance measurement for a company can be done through accounting-based measures calculated from firm's financial statements like ROA, ROE and Gross profit margin (Mwangi & Murigu, 2015).

1.1.3 Effect of Selected Macro-economic Variables on Financial Performance

Both theory and empirical literatures hold that the thriving of a nation is directly associated with the economy, this includes variables such as, GDP, Inflation, Remittances, Money supply, Exchange rate and Interest rate. The financial performance of any sector' is influenced by variations in economic fundamentals and these fundamentals' affect future prospects. According to Gazi, Uddin and Mahmudul (2010), a rising index or consistent growth in financial performance is an indicator of a growing sector whereas fluctuations in financial performance indicate economic instability in a country.

McKinnon (1973) theory argues that macro-economic variables, for instance real interest rates, exchange rates and inflation should be monitored as they influence the diverse economic fundamentals and hence economic status. McKinnon posits that holding interest rates below market equilibrium leads to an increase in investment' demand but the real investment may remain unaffected. However, according to market efficiency theory the prices of all variables should not be influenced by other factors apart from demand and supply (Fama, 2000). According to Fama, a market is efficient if stock prices indicate all the details regarding it.

Zhou (1996) contradicted the perceived notion that there exist an association between interest rate, exchange rate, economic growth, inflation and financial performance. His study tried to demonstrate that there are other fundamental factors affecting performance most importantly the efficiency of the market that result in the market self-regulating due to availability of all fundamental market information and hence no one has the upper hand or the ability to beat the market. The hypothesis that financial performance move one-for-one with ex ante interest rates is rejected.

The theory of efficient market hypothesis by Fama (1970) argues that in an efficient market, security prices will always reflect all the available information. Bank managers as such therefore ought to react fast and accurately to actual and anticipated macroeconomic variable changes by adapting the said changes or planning for them well in advance. Such prudence assists to assure financial performance not only in the present but also in future. Macroeconomic variables affect firms' profitability (Gerlach, Peng & Shu, 2005). Changes in macroeconomic variables present opportunities as well as threats to the industry players concurrently; those prepared for the changes, shall realize gains from opportunities that arise thus fostering their financial performance, while those who are unprepared might suffer from the threats and might in turn impact their financial performance negatively.

1.1.4 Banking Sector in Kenya

The Kenya's banking sector comprises with forty four financial institutions where by 43 are commercial banks and 1 is a mortgage finance company. The sector has also 8 foreign owned financial institutions, nine microfinance banks, two credit reference bureau, thirteen money remittance providers and eighty seven foreign exchange bureaus. Out of

these forty four banking institutions, 30 were locally owned banks while 13 are foreign owned (CBK, 2015). Out of these 43 commercial banks, 11 are listed at the NSE. The Central Bank of Kenya's responsibility is on- site and off-site surveillance. These involve inspecting the institutions business records to determine whether they comply with the set regulations. The recent regulatory and supervisory by the CBK has seen some banks merge, others close their doors while others are placed in receivership which has made the banking sector to grow continuously in terms of efficiency, stability and inclusiveness. This is in the Governments effort to create a vibrant and competitive financial sector by 2030.

Banking sector play an essential role in the determining how the resources in the economy are distributed through financial intermediation. This is through channeling funds from depositors to those who need it urgently for investing or spending which contributes to the economic development. The industry is controlled by the banking Act, the CBK Act, companies Act and other principles that are issued by the CBK. This was put into play after the sector was liberalized in 1995 with the CBK as the regulator having the authority to formulate and oversee implementation (CBK, 2017).

Commercial banks in Kenya have registered growth in financial performance over the past decade (CBK, 2016). With respect to macroeconomic variables, the central bank's monetary policy committee is charged with setting the lending base rate periodically. The set base rate affects the lending interest rates in the economy, and indirectly the foreign exchange rate. The central bank also put two banks into receivership in 2015; the banks experienced liquidity challenges, among other reasons that triggered their closure (Adembesa, 2014). In addition, in Septermber 2016, the banking amendment Act (2016)

to cap interest rates was passed into law and this affected the rate at which banks borrow and lend money (CBK, 2017).

1.2 Research Problem

The economic performance of any country is dictated by the financial performance of the various sectors that make up an economy. The profitability of the banking sector is inevitable in order to encourage economic activities. Macroeconomic factors such rate of interest, rate of exchange, GDP, money supply and inflation affects the banking sector's financial performance in a number of ways. As Levine (1996) revealed, the financial intermediation efficiency also affects the economic growth. Economies with profitable banking sector exhibit high tolerance to negative shocks and lead to stable financial systems (Bashir, 2003). The bank needs to identify factors influencing its financial performance in order to come up with initiatives that increase its profitability through effective management of dominant determinants (Athanasoglou et al., 2005).

The Kenyan banking sector has faced a challenging macro-economic environment such as the capping of interest rate that was effected on August 2016 but the sector has remained resilient. Other macro-economic challenges that have affected the sector include; increasing levels of prices, unpredictability of interest rates and exchange rate variability. The Kenya Shilling has greatly depreciated against most traded world currencies over the last few years in addition to a widening current account deficit. These unfavorable macroeconomic developments may result to great problems in banking industry when the management deeds are far-off reflecting the recurring nature of the economy in its decisions. Mounting stress within the banking system can be experienced

due to extremely unexpected cyclical fluctuations. Nevertheless, the macroeconomic variables might well deliver good indicators but it's not always the case.

Several studies have documented the effect of various variables such as inflation, exchange rates, gross domestic product, money supply and interest on commercial banks' financial performance. Osamwonji and Chijuka (2014) investigated how macroeconomic variables affect the commercial banks' profitability. The study finds a significant positive association between the return on equity and GDP, a significant negative relationship between return on equity and interest rate, and an insignificant negative relation involving inflation rate. San and Heng (2013) found macroeconomic variables like gross domestic growth and inflation do not have an effect on profitability. Bank specific determinants however affect bank performance. Kanwal and Nadeem (2013) find macroeconomic variables to have a weak effect on commercial banks earnings.

In Kenya, Simiyu and Ngile (2015) undertook a research study to analyse how the profitability of listed Kenyan commercial banks is affected by macroeconomic variables. The census study finds an insignificant positive effect by GDP on profitability; also, the study finds a significant negative relationship between profitability and interest rate and a positive significant effect between profitability and exchange rate. Kiganda (2014) however concluded that bank performance in Kenya is not affected by macroeconomic factors. Ongeri (2014) finds that macroeconomic variables affect the profitability of the nonbanking financial institutions positively. Kungu (2013) concludes that the financial performance of private equity firms is influenced by macroeconomic factors but finds the exchange rate to have a weak negative relationship with return on investment. From the foregoing, it is notable that there is no consensus on the impact of macro-economic

variables on financial performance of the banking sector. In addition, the studies conducted have concentrated on individual firms leaving a gap on the overall sector. Thus the study sought to respond to the research question: What is the effect of interest rates, inflation rates, economic growth and exchange rates on financial performance of the banking sector in Kenya?

1.3 Research Objective

This study sought to determine the effect of interest rates, inflation rates, economic growth and exchange rates on financial performance of the Kenyan banking sector

1.4 Value of the Study

Potential investors as well as the existing ones in the banking industry will find this study useful in their investment undertakings. They shall be in a position to better appraise their investment targets and or portfolios; and so proceed to make appropriate decisions. Fund managers and financial analysts could also draw insights from the study for similar reasons as the investors as well as in making appropriate client advises or recommendations.

The study's findings will be used for future reference by researchers, students and scholars who seek to undertake studies on a similar or correlated field. The study will also benefit researchers and scholars in the identification of other fields of research by highlighting related topics that require further research and reviewing the empirical studies to determine study gaps. The study greatly contributes to the banking sector's financial performance.

The study will also be of important to the different policy making institutions like the the CBK and the NSE in Kenya as they may use its findings to generate effective policies to mitigate the effects of macro-economic variables on banking sector's performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter has five sections, the first section will cover the theories in the study, the second will cover the determinants of financial performance, the third section will cover empirical studies, the fourth section covers the conceptual framework and the last section will cover the summary of the theoretical and empirical reviews.

2.2 Theoretical Framework

Detailed knowledge of what has been done is provided by the theoretical review and it forms a framework for interpreting research results so as to overcome the shortcomings of earlier studies. Different theories will be described and discussed in the following section. The theories are;the arbitrage pricing theory, inter-temporal capital asset pricing model and purchasing power parity theory.

2.2.1 Arbitrage Pricing Theory

The APT theory was promulgated by Ross (1976). The theory holds that there is a positive correlation between level of risk assumed by the investor and expected return. The APT model is an extension of the CAPM and defines returns as a multi-linear function rather than of one variable, it applies multi-beta model. The movements' sensitivity in every variable is represented by the beta coefficient as it indicates each variable's sensitivity movements. Some of variables in the APT model are macro-economic factors while others are market indices (Sadiye, 2014). The APT is therefore more inclusive compared to CAPM. APT is built on three major assumptions; investors

are rational and thus prefer more wealth to less wealth with certainty, capital markets are perfectly competitive and that no arbitrage opportunities exist among well diversified portfolios (Ouma & Muriu, 2014). APT contends that different variables influence the return of any individual firm, however, the effects tend to net off in a well-diversified portfolio. The concept of diversification is critical in smoothening aggregate return and therefore a critical influence in allocation of investment in the insurance sector (Suheyli, 2015).

In determining expected return of a capital asset, the APT model factors in the multiple risk factors associated with each of these variables (Ouma & Muriu, 2014). The APT model accounts for total risk arising from combination of unsystematic and systematic risk. Systematic risk constitute external factors which include macro-economic factors also termed as market risk and therefore cannot be eliminated through diversification (Saeed & Akhter, 2012). The APT model relates the various types of risk associated with the expected security to fluctuations in interest rates, inflation and productivity (Ouma & Muriu, 2014). This theory is relevant to this study as it recognizes macro-economic variables such as economic growth, exchange rate, interest rate and inflation as risk factors that cannot be diversified and that are likely to influence returns from investments and in effect financial performance of such firms.

2.2.2 Inter-temporal Capital Asset Pricing Model

The Inter-temporal Capital Asset Pricing Model (ICAPM) was advanced by Merton (1973) using utility maximization to obtain the exact expected security returns' multifactor predictions. The ICAPM is an improvement of the earlier CAPM, one period model and does not hold Inter-temporal (Bak, 2012). The Merton's (1973) model argues

that the expected excess return of an asset is computed by a multi-beta version of the CAPM with the value of betas being equal to one plus the number of state variables. The Inter-temporal model is determined by the consumer investor behavior and captures effects that are absent in the static model (Bellalah & Wu, 2009).

The ICAPM presupposes that continuous period work that an inter-temporal optimizer act differently in a dynamic set as opposed to a constant opportunity set. That the investment opportunity given by investors in the real world constantly changing (Bak, 2012). An Inter-temporal model for the capital market is derived from the portfolio selection of various investors who seek to maximize the lifetime expected utility consumption and who can continuously trade (Erdugan, 2012). According to ICAPM term structure is influenced by many factors and thus kind of constituted, which is consistent with rational expectations and maximizing behavior hypothesis. This model is relevant to this study as it recognizes the dynamic nature of the investment environment where the returns keep on changing depending on changes in the macro-economic environment. Interest rates, economic growth, exchange rate and inflation are some of the macro-economic variables that keep on changing and that are likely to affect the returns from an investment and in effect influencing financial performance of the affected firms.

2.2.3 Purchasing Power Parity Theory

Swedish economist Cassel (1918) was the originator of this theory defining the theoretical nominal exchange rate as a report between national and foreign prices, nevertheless the market value of the exchange rate could deviate from the former value (over or under deviations) of the national currency. Cassel (1918) selected various hypotheses that needed to be fulfilled before validating the theory. These hypotheses

included the working of the international arbitrage mechanism, presence of perfect competition in both home and foreign countries and capital movements free from barriers such as taxes or any other restrictions. Consequently, non- tradable goods will trade at a lower price than those in more developed countries.

According to the PPP, selling identical goods at the same price by all countries will be when there is the price level of a certain country increases resulting into the decline of exchange rate compared to other nations. This theory suggests that, when the Law of One Price holds an exchange rate change is usually offset by relative price indices/inflation. PPP functions in par with the one price law which holds that states that identical goods will be sold at similar prices in competitive markets. The PPP version relates to a specific product and its generalization. The relative PPP does not relate to absolute price levels but relates to variations in exchange rates and prices (Hau, 2002).

The assumptions for PPP to hold include; no information gaps, goods are identical and tradable, no transportation costs, no tariffs, no taxes, no trade restrictions, and relative inflation rates influence exchange rates. It is because of the violation of one price law and these restrictive assumptions that the monetary models of determining exchange rates were adopted. This is because of the consideration that exchange rates refer to asset prices that always adjust to balance between financial assets and international trade. Exchange rates are normally determined by future expectations because they are asset prices (Hosfstrand, 2006). Relying on the theory, it is possible to draw a correlation between exchange rate movements and financial performance of firms, which will most certainly be followed by fluctuating performance in the industry.

2.3 Determinants of Financial Performance

Factors that influence financial performance can either be external or internal to the firms that define the level of output. The internal factors are different for each firm and determine its financial performance. They arise from managerial decisions and the board. External ones include; exchange rate volatility, interest rates, inflation, economic growth, money supply among others. The internal factors include corporate governance, firm size, financial leverage, liquidity, management efficiency, capital, market power among others (Athanasoglou, Brissimis & Delis, 2005).

2.3.1 Interest Rates

Interest rate indirectly affects financial performance of banks through impacting economy. According to Khan and Sattar (2014) interest rate affects financial performance either positively or negatively depending on its movement. A decrease in interest rate to the depositors and an increase in spread discourage savings. Increase in interest rate to the depositor adversely affects the investment. Banking sector is the most sensitive to changes in interest rate as compared to other sectors because the largest proportion of banks' revenue comes from the differences in the interest rate that banks charge and pays to depositors.

Apart from macroeconomic variables bank specific and industry specific factors affects financial performance. Bank-specific variables are internal factors which can be controlled by the management such as those that originate from bank account (Owoputi, Kayode & Adeyefa, 2014). These factors are described by the CAMEL (capital adequacy, asset quality, management, earnings, and liquidity) model which indicates the

attributes for the bank financial analysis. The industry-specific factors are beyond the management but within the banking sector.

2.3.2 Inflation

Inflation negatively affects economic growth by decreasing the GDP. Whether inflation affects financial performance positively or negatively depends on the ability of a bank to anticipate it. When a country anticipates inflation, banks adjust the rate of interest to ensure that revenues generated are higher than the cost of operation. Banks that do not anticipate an inflation fails to make proper adjustment and as a result the cost of operations increases at a higher rate than revenue generated. Boyd, Levine and Smith, (2001) reported a negative relationship between inflation and bank profitability. However Ameer (2015) asserts that most studies have found a positive impact of inflation on financial performance.

2.3.3 Exchange Rates

Exchange rates have a notable effect on financial performance when the rates of exchange in currency has variations and affect right the import price including the production cost and Consumer Price Index (CPI). Discrepancies of rate of Exchange are transferred to domestic prices through networks of prices of imported consumption goods, exchange rate movement affects domestic prices directly. The second factor affecting the performance is intermediate imported goods prices influencing exchange rate movement which has effect on production cost of locally produced goods. The last is domestic goods priced in foreign currency. The magnitude of fluctuations are redirected in the CPI which rest on the portion of consumption imports basket (Nwankwo, 2006).

Demand increases for domestic goods when factors affecting prices causes rise in price level of imported goods and services hence reduction in completion is experienced. This shift equilibrium which results pressure mounting on domestic prices and nominal wages as demand increases. Additional rising pressure will be applied on domestic prices as a result of rising wages. Depreciation in the rate of exchange can merely safeguard the local industry as local production cost rises much less than the rate of depreciation as compared to prices of imported equivalent increases by the full amount of the depreciation. This scenario of currency depreciation leads to improved and conducive environment for indigenous industry production (Nwankwo, 2006).

2.3.4 Economic Growth

GDP is the most used measurement of economic growth. A growing economy exhibits positive GDP which raises demand for loans (Osoro & Ogeto, 2014). Any rise in economic output may raise expected cash flows and, hence, trigger a rise in price of shares, with the reverse impact during recession is justified (Kirui et al., 2014). Existing empirical evidence indicate that the financial systems of advanced nations are more efficient (Beck et al., 2003). Banking sector development is also positively related to economic stability and monetary and fiscal policies. Countries with higher income have more advanced banking sectors compared to countries with low income (Cull 1998).

Investors are mainly concerned with GDP reports since the overall economic health could be established through its measurement. The long run implication of healthy economic growth is higher corporate profits and improvement of banking performance while the short term implication is unpredictable market trends even during positive economic growth seasons (Beck et al., 2003).

2.3.5 Industry Specific Factors

The bank performance is also affected by industry specific factors. The relationship between the financial performance of banks and ownership exists due to spillover effects from the higher financial performance of institutions that are privately owned compare to the government owned firms whose aim is not always to maximize profits. The publicly owned banks are more vulnerable to solvency threatening losses due to lower profits as compared to privately owned banks (Owoputi, Kayode & Adeyefa, 2014).

Market structures provide a basis for analyzing the competitive behavior of firms in a given industry. The degree of market concentration negatively affects competition but it is positively associated with profits. Khan and Sattar (2014) posit that the higher the market concentration, the less the level of competition and higher the profit. Therefore, banks located in more concentrated markets generate higher profits due to non-competitive behavior as compared to banks in less concentrated markets. In the concentrated markets banks can impose higher interest spreads by setting lower deposit rates and higher lending rates.

2.4 Empirical Review

Many empirical studies both locally and globally conducted support the association between macro-economic variables and financial performance, but these studies have produced mixed results.

2.4.1 Global Studies

Kanwal and Nadeem (2013) also in a research study sought to establish the relationship that exists between macroeconomic variables (GDP, inflation rate, interest rate) and

profitability (measured by ROA, return on equity, and equity multiplier) of public commercial banks in Pakistan. The study covered a period 2001-2011 (ten years). Population comprised thirty-eight banks; a sample of twenty three listed banks was studied. Data was sourced from secondary sources and analyzed using correlation analysis, descriptive statistics as well as pooled ordinary least squares regression analysis. The researchers find a strong positive association between profitability and interest rate, an insignificant positive association between GDP and profitability and a weak negative connection between inflation rate and bank profitability. In summary the study concludes that there exists a weak association between macroeconomic variables and commercial banks earnings.

San and Heng (2013) the effect of macroeconomic conditions and bank specific characteristics affect the performance of Malaysian commercial banks. Period of study covered 2003 to 2009. Secondary data in this study was obtained and used by the study. 23 banks comprised the population; 20 banks were sampled (three banks had missing data, thus excluded). Data analysis was made via regression analysis and descriptive statistics. The study finds that ROA ratio is the best measure for profitability. Macroeconomic variables such as gross domestic growth and inflation are found not affecting profitability. Bank specific determinants however affect bank performance.

Zhang and Daly (2013) examined how macroeconomic and bank specific factors influence the performance of banks in China. The study period covered was 2004 to 2010. The study population comprised all the banks in China; a sample of 124 banks with complete data set was studied. Secondary data was collected and used by the study. Return on assets was used as a proxy for profitability. Data collected was analysed using

regression analysis. The research study indicates that banks with lower credit risk, and well capitalized are more profitable; banks with higher expense preference have undesirable effect on performance. Banks also grow along with growth in the economy; greater economic amalgamation increases bank profitability.

Owoputi, Kayode and Adeyefa (2014) studied the influence of variables (bank-specific, industry specific and macroeconomic) on Nigerian bank performance. The study obtained data from the central bank of Nigeria publications and financial statements of ten banks from 1998 to 2012. Three macroeconomic variables were analyzed in this study: interest rate, inflation rate, and GDP. After applying a random-effect model, the researchers found a notable and positive influence of bank size and capital adequacy on profitability. Liquidity ratio and credit risk have a negative correlation on banks financial performance. The study found that industry specific variables do not affect bank financial performance. Out of the three macroeconomic variables investigated in this study, the empirical results showed a significant and negative effect of interest rate and inflation rate on bank profitability while GDP growth has an insignificant relationship.

Osamwonji and Chijuka (2014) studied the influence of macroeconomic variables on commercial banks' profitability. This study was based on 1990 to 2013 secondary data obtained in Nigeria. The secondary data was obtained from central bank as well as firms annual reports and financials. Macroeconomic variables studied are GDP, inflation rate, and interest rate; the proxy for profitability being return on equity. Data analysis was by way of ordinary regression. The study finds a significant positive relationship between GDP and return on equity, a significant negative relationship between return on equity

and interest rate, and an insignificant negative relation involving inflation rate. This study however fails to indicate neither the population of the study nor the sample used.

2.4.2 Local Studies

Kungu (2013) in a research study to establish how financial performance (return on investment) of private equity firms in Kenya is affected by macroeconomic variables (GDP, rate of interest, inflation rate, rate of foreign exchange), used a descriptive and correlation research designs. The population covered 28 firms and utilized secondary data, which was analysed using multiple regression analysis. The study concludes that private equity firms' financial is influenced by macroeconomic factors. The exchange rate was noted to have a weak negative association with return on investment; while the other factors have positive effect(s).

Ongeri (2014) also in a research study investigated how macroeconomic variables affect the financial performance of Kenyan non-banking financial institutions. The study employed a descriptive research design and obtained secondary data on the one hundred 20 and twelve firms that formed the population. The census study covered the period 2004 to 2013. The study variables were GDP, exchange rate, interest rate, return on assets and inflation rate. Data analysis was undertaken using descriptive, regression and correlation analyses. The study finds a strong positive relationship between the return on assets and the exchange rate and weak positive relationship between GDP and rate of interest, and ROA; and concludes that there is a positive influence of macroeconomic variables on profitability of the said studied firms. The study however fails to indicate the effect of inflation rate on profitability, yet it was part of the intended analysis.

Kiganda (2014) also undertook a study to investigate how macroeconomic variables affect the performance of commercial bank profitability. The case study of Equity bank limited used a correlation research design and obtained secondary data covering the five-year period, 2008 to 2012. Data analysis was undertaken via ordinary least squares regression. The study finds macroeconomic variables (GDP, inflation rate and exchange rate) have insignificant effect on profitability and concludes that the factors do not affect bank performance in Kenya. The case study might have resulted in skewed findings; generalization of findings to the over forty banks in Kenya might not be hold.

Wanjiku (2014) established the effect of selected macroeconomic variables (interest rates, inflation rate, the dollar's exchange rate versus Kenya shillings and the growth rate of the GDP) on the returns of PFK. The study had 36 data points of observations and quarterly data for the period that ranged from 2005 to 2013 was analyzed. It was established that pension funds' industry return for the period were highly subjective to the selected macro-economic variables. A negative association was found between interest rates, exchange rate and inflation whereas the GDP was positively associated to industry returns.

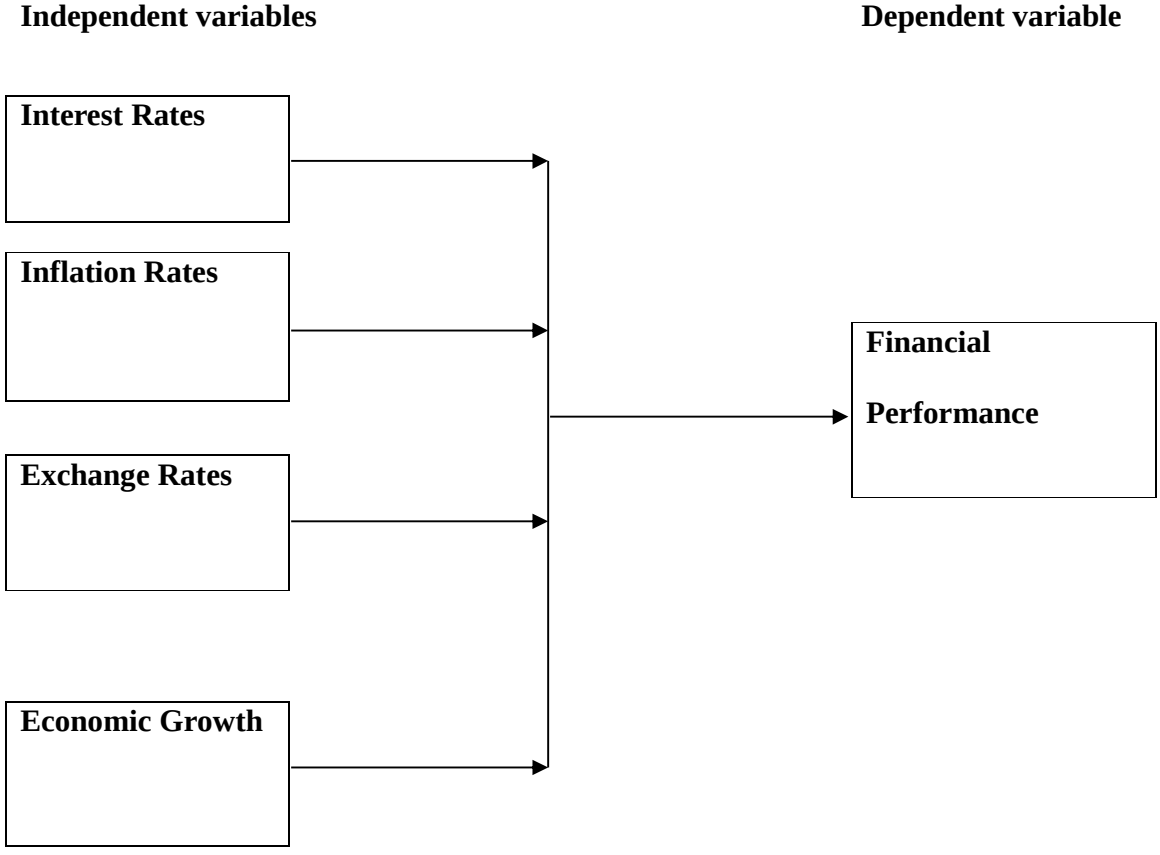
Simiyu and Ngile (2015) undertook a research study to analyze how macroeconomic variables affects profitability of listed Kenyan commercial banks. The census study used a population of ten commercial banks and obtained secondary data covering the period 2001 to 2012. Data obtained was analysed using fixed effects panel data analysis. The macroeconomic variables studied were GDP, exchange rate, and interest rate; profitability was measured using return on assets. In this study, the researchers find an insignificant positive effect by GDP on profitability; also, the study finds a significant

negative relationship between interest rate and profitability and a positive significant effect between exchange rate and profitability.

2.5 Conceptual Framework

This presents how the identified factors relate with each other. The factors depicted are inflation rate, interest rates, economic growth, exchange rates and financial performance. The independent variables are interest rates as measured by average quarterly lending rates, inflation as measured by quarterly CPI, economic growth as measured by quarterly GDP and exchange rate as measured by quarterly exchange rate between KSH/USD. Financial performance is the dependent variable which the study seeks to explain and it will be measured by return on assets on a quarterly basis.

Figure 2.1: The Conceptual Model



Source: Researcher (2017)

2.6 Summary of the Literature Review

Many theoretical frameworks have sought to explain the concept of macro-economic variables and the performance of the stock market. In this theoretical review, the theories discussed are: efficient market hypothesis, modern portfolio theory and behavioral finance theory. Some important determining factors of financial performance have been discussed as well. In both locally and globally, many empirical studies have been carried out both on financial performance and macro-economic variables. The discussion of these studies' results is also in this chapter. It is evident, so far, that there lacks a consensus on the impact of macro-economic variables on financial performance. In addition, the studies conducted have concentrated on individual firms leaving a gap on the overall sector. Thus, the study seeks to respond to the research question: What is the effect of interest rates, inflation rates, economic growth and exchange rates on financial performance of the Kenyan banking sector?

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter gives a description of research methods applied to objectively determine the influence of inflation rates, economic growth, exchange rates and interest rates on financial performance. It also gives a discussion on the data collection methods and instruments applied and data analysis.

3.2 Research Design

Research design is explained as a blue print of the procedures employed by a researcher in establishing the association between dependent and independent variables (Khan, 2008). For this study, descriptive cross sectional design was used. A descriptive study entails a description of all the population elements and it gives room for estimation of a part of a population with these attributes. In order to determine if the variables are independent or dependent, relationships among various variables is examined. Cross-sectional study methods are done once and they represent summary at a given timeframe (Cooper & Schindler, 2008).

3.3 Data Collection

Data was exclusively collected from a secondary source. It is always a regulatory requirement for all banks to report their values annually to the Central Bank of Kenya. Quarterly data for ten years (January 2008 to December 2017) was collected and analyzed. Data for the independent variables; interest rates and exchange rates (KSH/USD) was obtained from the CBK while data on inflation and economic growth

was collected from the KNBS. Data for the independent variable; financial performance referenced by return on assets will be obtained from CBK.

3.4 Data Analysis

For easy analysis, the collected data was sorted, classified, coded and then entered in tables. Analysis was done by use of both the descriptive and the inferential statistics. The data was then inputted into the SPSS and examined by use of descriptive, correlation and regression analyses. In descriptive statistics, standard deviation, scatter plot and mean were used. In inferential statistics, the study adopted the multivariate regression analysis in determining the association between the dependent variable (financial performance) and independent variables: inflation rates, exchange rates, economic growth and interest rates.

3.4.1 Diagnostic Tests

Linearity show that two variables X and Y are connected by the equation Y= C+ bX in which c is a constant number. The linearity test was acquired through the scatterplot testing or F-statistic in ANOVA. Stationarity test is a process where the statistical properties such as mean, variance and autocorrelation structure do not change with time. Stationarity was obtained from the run sequence plot. Normality is a test for the assumption that the residual of the response variable are normally distributed around the mean. This was determined by Shapiro-walk test and the Kolmogorov-Smirnov test. Autocorrelation is the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals. It was tested using Durbin-Watson statistic (Khan, 2008).

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This was tested by the determinant of the correlation matrices, which varies from zero to one. Orthogonal independent variable is an indication that the determinant is one while it is zero if there is a complete linear dependence between them and as it approaches to zero then the multicollinearity becomes more intense. Variance Inflation Factors (VIF) and tolerance levels were also carried out to show the degree of multicollinearity (Burns & Burns, 2008).

3.4.2 Analytical Model

The four determinants in the model are; inflation rates, exchange rates, economic growth and interest rates. The study used USD since it is the major currency in trade globally. The USD is highly favored due to its stability against other world currencies. In determining the relative significance of each of the explanatory variables with respect to banking sector's financial performance in Kenya, a multivariate regression model was applied.

The study employed the following multivariate regression model;

$$\mathbf{Y = ß_0 + ß_1X_1 + ß_2X_2 + ß_3X_3 + ß_4X_4 + \acute{\varepsilon}}$$

In which**:**

Y was quarterly change in financial performance of the banking sector as measured by ROA

$ß_0$ was the regression constant (parameter of the function)

$ß_1$, $ß_2$, $ß_3$ and $ß_4$ are the coefficients of independent variables,

X_1 was the average quarterly inflation rates as measured by CPI

X_2 was the average quarterly interest rates as measured by bank rates

X_3 was the average quarterly exchange rate as measured by natural logarithm of (KSH/USD)

X_4 was the average quarterly economic growth as measured by GDP growth rate

ε was the error term

3.4.3 Tests of Significance

In the testing of the statistical significance, the F- test and the t – test were applied at 95% confidence level. The F statistic was used to determine a statistical significance of regression equation whereas the t statistic was applied in testing statistical significance of individual parameters.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

The chapter presents the analysis, findings and interpretation of the secondary data obtained from KNBS and CBK. The study was seeking to determine the impact of the chosen macro-economic variables on financial performance of the Kenyan banking sector. The selected macro-economic variables were GDP growth rate, rate of inflation, exchange rates and interest rates. Regression analysis was applied in testing the correlation between the variables under study in relation to the objectives of the study. ANOVA was used to test the goodness of fit of the analytical model. The findings were presented in tables and figures.

4.2 Diagnostic Tests

The statistical methods applied assumed that variables were normally distributed. Multivariate statistics were adopted with the supposition that the combination of variables follows a multivariate normal distribution. Since there was direct test for multivariate normality, the study tested each variable individually and assumed that they are multivariate normal if they are individually normal. Normality test were undertaken and the results were as presented below.

Table 4.1: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Exchange rates	.094	40	.200*	.973	40	.479
Inflation rates	.089	40	.200*	.963	40	.241

Interest rates	.102	40	.200*	.949	40	.082
ROA	.097	40	.200*	.978	40	.483
Growth rate	.235	40	.000	.874	40	.001

This is a lower bound of the true significance.*
Lilliefors Significance Correction[a]

From table 2 above, exchange rates were normally distributed. The p value of the Shapiro-Wilk Test was 0.479 which is greater than 0.05. From the normal Q-Q Plot of exchange rates it was noted that exchange rates was normally distributed and close to the expected values. The study also noted that inflation rate was normally distributed. The p value of the Shapiro-Wilk Test was 0.241 which is greater than 0.05. From the normal Q-Q Plot of inflation rate, it was noted that inflation rate was normally distributed and close to the expected values. Interest rate was normally distributed. The p value of the Shapiro-Wilk Test was .082 which is greater than 0.05. From the normal Q-Q Plot of interest rates it was noted that the interest rate was normally distributed and close to the expected values. The study also noted that return on assets was normally distributed. The p value of the Shapiro-Wilk Test was 0.483 which is greater than 0.05. From the normal Q-Q Plot of ROA, it was noted that ROA was normally distributed and close to the expected values. The GDP growth rate was not normally distributed. The p value of the Shapiro-Wilk test was 0.001 which is less than 0.05. From the normal Q-Q Plot of GDP growth rate, it was noted that the GDP growth rate was not normally distributed and was not close to the expected values.

The assumption of the regression model adopted was that the error term was independent and normally distributed, with a mean zero and a constant variance. To test for the independence of the variables, Durbin-Watson statistical analysis was undertaken. This

analysis was used to test for the presence of auto correlation among the residuals. Residual was the deviation between the observed value and the predicted value of the variables. Table 4.2 below shows the results of Durbin-Watson analysis.

Table 4.2: Durbin-Watson Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.656[a]	.430	.365	.5647	1.780

a. Predictors: (Constant), GDP growth rate, rate of inflation , rate of Interest, rate of exchange

b. Dependent Variable: Financial performance

From table 4.2 above, the Durbin-Watson value was 1.780 meaning the residuals' values were uncorrelated since it falls within the acceptable range of 1.50 and 2.50. This means the size of the residual for one variable has no impact on the size of the residual for the next variable

4.3. Descriptive Analysis

This chapter discusses the trend of the banking sector financial performance, GDP growth rate, inflation rate, exchange rates and interest rates covering the period from 2008 to 2017.

Table 4.3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation

Financial performance	40	2.5	4.7	3.305	.7089
Interest rate	40	13.7	20.2	15.813	1.9453
Exchange rate	40	1.8	2.0	1.930	.0608
Inflation rate	40	1.9	2.3	2.120	.1043
GDP growth rate	40	.3	12.5	6.215	3.4879
Valid N (listwise)	40				

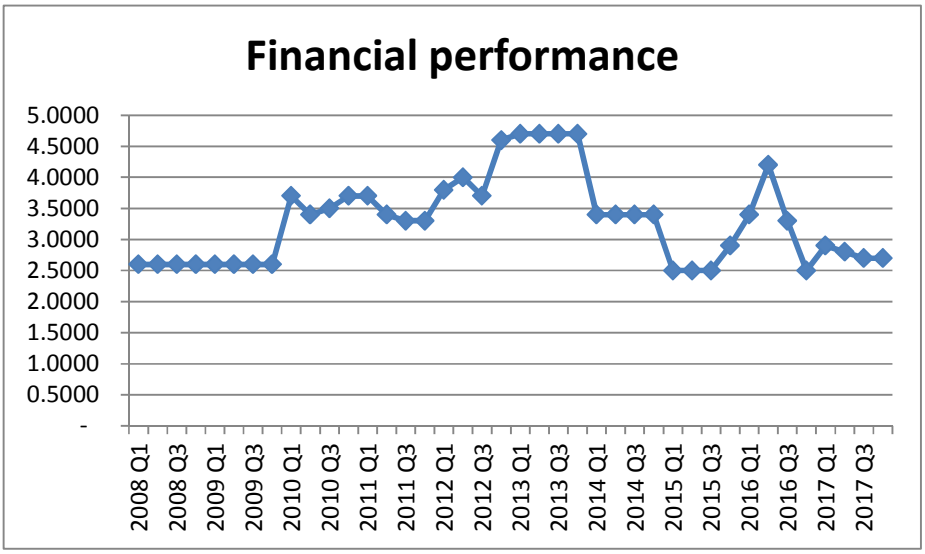
Source: Research Findings (2018)

The study found out that financial performance recorded an average of 3.305 over the study period. Over the same period, interest rates recorded an average of 15.813 while GDP growth rate recorded an average of 6.215. Further, inflation rates and exchange rates recorded an average of 2.120 and 1.930 respectively. The standard deviation indicated that financial performance, interest rates, economic growth, exchange rates and inflation rates varied over the study period. The greatest variation was recorded by GDP growth rate (3.4879) followed by interest rates (1.9453).

4.3.1 Financial Performance

In this section, the study sought to determine the quarterly commercial banking sector's financial performance for the period 2008-2017, measured using ROA. The table below presents analysis results

Figure 4.2: Financial Performance

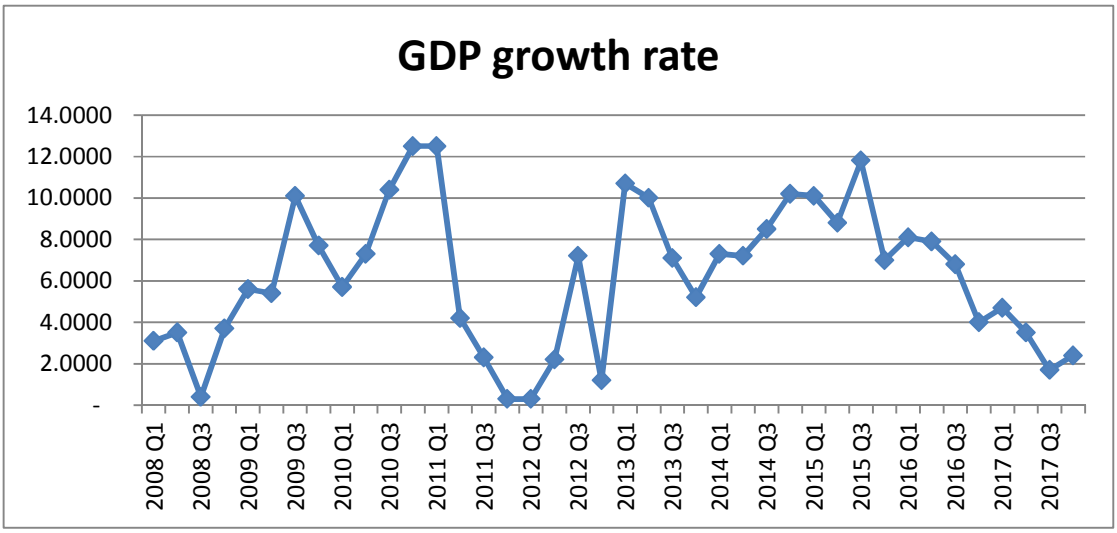


Source: Central Bank of Kenya (2018)

4.3.2 GDP Growth Rate

Kenya's economic growth as measured using GDP growth rate has had fluctuations over the study period (2008-2017). The trend of GDP growth rate is as shown in Figure 4.3.

Figure 4.3: GDP Growth Rate

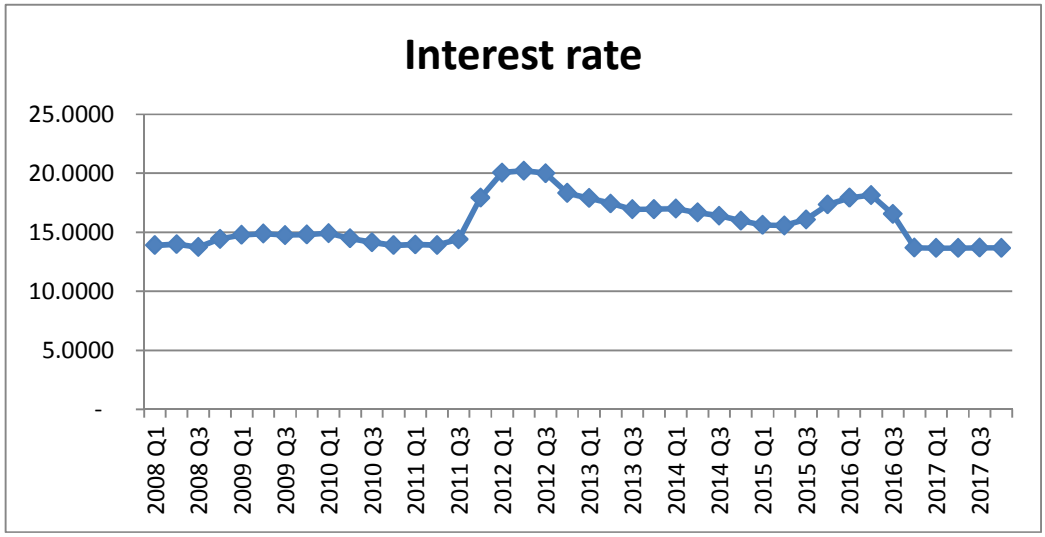


Source: Kenya National Bureau of Statistics (2018)

4.3.3 Interest Rates

Kenya's interest rates registered high fluctuations over the study period (2008-2017). The trend during the study period is as shown in Figure 4.4.

Figure 4.4: Interest Rates

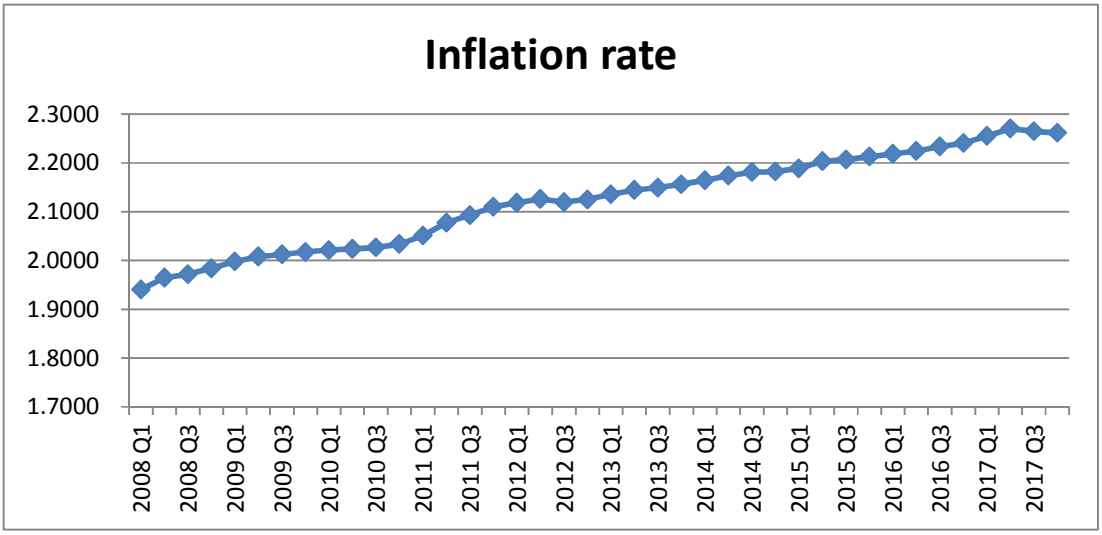


Source: Central Bank of Kenya (2018)

4.3.4 Inflation Rate

There were significant variations in Kenya's inflation rates over the study period (2008 – 2017) but on average the inflation has been on an upward trend as indicated in the trend shown in figure 4.5.

Figure 4.5: Inflation Rate

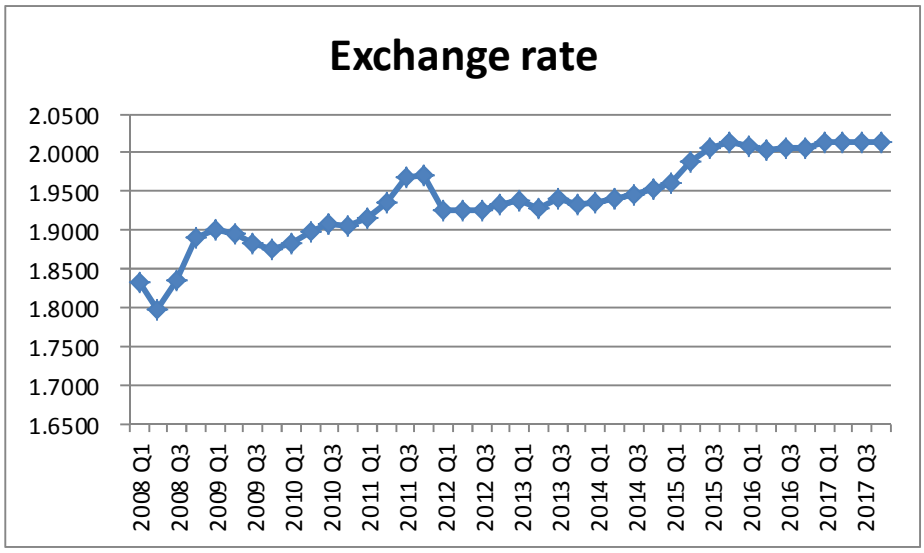


Source: Kenya National Bureau of Statistics (2018)

4.3.5 Exchange Rate

The study found out that the average quarterly exchange rate between USD and Ksh. has been on a steady rise over the study period (2008-2017). The trend of Kenya's exchange rate during the study period is as shown in Figure 4.6.

Figure 4.6: Exchange Rate



Source: Central Bank of Kenya (2018)

4.4 Correlation Analysis

The researcher carried out Pearson product-moment correlation analysis to test whether the study variables were correlated. A p-value of 0.05 or less was used to indicate significant correlations. The results of the study are as shown in Table 4.4.

It was discovered that there was a positive and statistically significant correlation (r = .595, p = .000) between interest rate and the financial performance of the Kenya banking sector. The study also found out that there was a positive but insignificant correlation between GDP growth rate, inflation rates and financial performance of the banking sector as evidenced by (r = .140, p = .388) and (r = .006, p = .973) respectively while exchange rate had an insignificant negative correlation with ROA. However, the study never recorded any significant correlation among the independent variables. This implies that there was not Multicollinearity among the independent variables and therefore they can be used as determinants of financial performance in regression analysis.

Table 4.4: Correlation Analysis

		ROA	Interest rate	Exchange rate	Inflation rate	GDP growth rate
ROA	Pearson Correlation	1	.595**	-.152	.006	.140
	Sig. (2-tailed)		.000	.348	.973	.388
	N	40	40	40	40	40
Interest rate	Pearson Correlation	.595**	1	.055	.130	-.010
	Sig. (2-tailed)	.000		.735	.423	.952
	N	40	40	40	40	40
Exchange rate	Pearson Correlation	-.152	.055	1	.753**	.097
	Sig. (2-tailed)	.348	.735		.000	.551
	N	40	40	40	40	40
Inflation rate	Pearson Correlation	.006	.130	.753**	1	-.005
	Sig. (2-tailed)	.973	.423	.000		.975
	N	40	40	40	40	40
GDP growth rate	Pearson Correlation	.140	-.010	.097	-.005	1
	Sig. (2-tailed)	.388	.952	.551	.975	
	N	40	40	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research Findings (2018)

4.5 Regression Analysis

Kenyan banking sector's financial performance was regressed against four predictor variables; economic growth, interest rates, exchange rate and inflation rate. The regression analysis was undertaken at 5% significance level. The study obtained the model summary statistics as revealed in table 4.5 below.

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.656[a]	.430	.365	.5647	1.780

a. Predictors: (Constant), GDP growth rate, rate of inflation, rate of Interest, rate of exchange

b. Dependent Variable: Financial performance

Source: Research Findings (2018)

The study sought to establish the influence of selected macro-economic variables on financial performance. The results revealed that there was an overall strong and positive relationship (R= 0.656) between the selected macroeconomic variables and the financial performance. The result of the study further indicates that the value of the adjusted R-squared was 0.430. This implies that the selected macroeconomic variables (economic growth, interest rates, exchange rate and inflation rate) can account for 43% of the changes in the financial performance. A durbin-watson statistic of 1.780 indicated that the variable residuals were not serially correlated since the value was more than 1.5.

4.5.2 Analysis of Variance

The study was seeking to confirm goodness of fit of the regression model through the ANOVA statistics. Study outcomes are given in Table 4.6 below.

Table 4.6: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.437	4	2.109	6.613	.000[b]
	Residual	11.162	35	.319		
	Total	19.599	39			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), GDP rate of growth, rate of inflation, rate of interest, rate of exchange

Source: Research Findings (2018)

Based on the above ANOVA statistics, it was determined that the regression model had a significance level of 0.0% which indicates that the model was ideal for predicting the effect of selected macro-economic variables and financial performance because the value of significance (p-value) was less than 5%. This means that the model is fit for the data.

4.5.2 Coefficients of Determination

Coefficients of determination were used as indicators of the direction of the relationship between selected macro-economic variables and financial performance of the banking sector. The p-value under sig. column was applied to indicate the significance of the relationship between the dependent and the independent variables. At 95% confidence

level, a p-value of less than 0.05 was interpreted as a measure of statistical significance. As such, a p-value above 0.05 shows a statistically insignificant relationship between the dependent and the independent variables. Table 4.7 gives the results

Table 4.7: Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.713	2.992		1.575	.124
	Interest rate	.215	.047	.591	4.583	.000
	Exchange rate	-4.026	2.292	-.345	-1.756	.088
	Inflation rate	1.287	1.339	.189	.961	.343
	GDP growth rate	.037	.026	.181	1.399	.171

a. Dependent Variable: Financial performance

Source: Research Findings (2018)

Based on results above, it is evident that only interest rate produced positive and statistically significant values for this study (high t-values (4.583), $p < 0.000$). Exchange rate produced negative and statistically insignificant values for this study as evidenced by (t= -1.756, p= 0.088). Inflation rate and GDP growth rate produced positive statistically insignificant values for this study as evidenced by (t= -2.397, p= 0.018) and (t= -3.667, p= 0.000) respectively.

The following regression equation was estimated:

$Y = 4.713 + 0.215X_1$

Where,

Y = Financial performance of the banking sector

X_1= Interest rate

On the estimated regression model above, the constant = 4.713 shows that if selected macroeconomic variables (economic growth, rates of exchange, rates of interest, and rate of inflation) were rated zero, the financial performance of the banking sector would be 4.713. A unit increase in interest rate would cause increase in financial performance by 0.215. A unit increase in exchange rates, rate of GDP growth and inflation rate would not cause a notable influence on banking sector's financial performance.

4.6 Discussion of Research Findings

The study sought to determine the influence of the chosen macroeconomics variables on the financial performance of the banking sector. The study used secondary data covering the period from 2008 to 2017 for analysis. Data was then edited and cleaned for completeness. Regression analysis was applied in testing the connection between the variables under study in relation to the objective. Anova analysis was used in confirming the regression findings.

The study established that there is a strong connection between selected macroeconomics variables and banking sector's financial performance. Interest rates produced positive and statistically significant values. This implies that the higher the interest rate gets, the more the financial performance of the banking sector. It was further discovered that exchange rates, rate of GDP growth and rate of inflation have no significant impact on financial performance on the Kenyan banking sector.

The findings are in agreement with Kiganda (2014) who undertook a study to investigate how macroeconomic variables influence the performance of Kenyan commercial bank profitability. The case study of Equity bank limited used a correlation research design and obtained secondary data covering the five-year period, 2008 to 2012. Data analysis was undertaken via ordinary least squares regression. The study finds macroeconomic variables (GDP, inflation rate and exchange rate) have insignificant effect on profitability and concludes that the factors do not affect bank performance in Kenya.

The study also concurs with Kanwal and Nadeem (2013) who in a research study sought to establish the relationship that exists between macroeconomic variables (GDP, inflation rate, interest rate) and profitability (measured by ROA, return on equity, as well as equity multiplier) of public commercial banks in Pakistan. This study covered a period 2001-2011 (ten years). Population comprised thirty-eight banks; a sample of twenty three listed banks was studied. Data was sourced from secondary sources and analyzed using correlation analysis, descriptive statistics as well as pooled ordinary least squares regression analysis. The researchers find a strong positive association between profitability and interest rate, an insignificant positive association between GDP and profitability and a weak negative relationship between inflation rate and bank profitability. In summary the study concludes that there exists a weak association between macroeconomic variables and commercial banks earnings.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the study summary, discussions and conclusions. Major limitations of the study are also presented as well as the recommendations for both the research and for the policy and practice.

5.2 Summary of Findings

The study was seeking to determine the impact of selected macro-economic variables on financial performance of Kenyan banking sector. The selected macro-economic variables were GDP growth rate, exchange rate, inflation rate and interest rates. Regression analysis was applied in testing the correlation between the variables based the study objectives. The goodness of fit of the analytical model was tested using ANOVA. The findings were presented in tables and figures.

The researcher carried out diagnostic tests on the collected data with a null hypothesis that the secondary data was not normal. Both Kolmogorov-Smirnova and Shapiro-Wilk tests recorded p-values greater than 0.05 which implied that the research data was normally distributed and thus the null hypothesis was rejected. The data was therefore considered appropriate and was used to conduct parametric tests such as Pearson's correlation, regression analysis and analysis of variance. The study revealed that economic growth, rate of interest, rates of exchange as well as rates of inflation in Kenya had been fluctuating during the study period (2008-2017). The changes in

macroeconomic variables were largely attributed to political instability, global financial crisis and international prices of fuel.

The researcher carried out Pearson product-moment correlation analysis to test whether the study variables were correlated. The study found out that there was a positive and statistically significant correlation between interest rates and the banking sector financial performance. The study also found out that there was a negative and insignificant correlation between exchange rate and banking sector financial performance and a positive insignificant correlation between GDP growth rate and inflation on banking sector's financial performance. Nevertheless, the study never recorded any significant correlation among the independent variables (economic growth, rate of interest, rates of exchange as well as rates of inflation). This implies that there was not multi-collinearity among the independent variables and therefore they can be used as determinants of financial performance in regression analysis.

Regression analysis findings established that there was a strong relationship (R= 0.656) between selected macroeconomics variables and financial performance. The result further indicated that R-squared value is 0.430. This implies that independent variables investigated in the study (GDP growth rate, interest rates, exchange rates and inflation rate) could account for or explain only 43% of the dependent variable. The remaining 57% can be explained by other variables which were not the subject of this study.

According to literature review, there is notable lack of consensus on the effect of macro-economic variables on financial performance; Simiyu and Ngile (2015) undertook a research study to analyze how the profitability of listed commercial banks in Kenya is

affected by macroeconomic variables. The census study finds an insignificant positive effect by GDP on profitability; also, the study finds a significant negative relationship between profitability and interest rate and a positive significant effect between profitability and exchange rate. Kiganda (2014) however concluded that bank performance in Kenya is not affected by macroeconomic factors. Ongeri (2014) finds that macroeconomic variables affect the profitability of the nonbanking financial institutions positively. Kungu (2013) concludes that the financial performance of private equity firms is influenced by macroeconomic factors but finds the exchange rate to have a weak negative relationship with return on investment. This study found that of the four selected macro-economic variables, only rate of interest has a notable impact on financial performance of the banking sector.

5.3 Conclusion

The research sought to determine the impact of selected macroeconomic variables (inflation rate, economic growth rate, interest rates and exchange rates) on the financial performance of the Kenyan banking sector. The study concludes that there is a strong relationship between the selected macroeconomic variables and financial performance of the banking sector. It was also established that interest rate positively affects Kenyan banking sector's financial performance while the other selected macro-economic variables have no significant effect on banking sector's financial performance.

The researcher carried out Pearson product-moment correlation analysis to test whether the study variables were correlated. The study found out that there was a positive and statistically significant correlation between interest rates and the financial performance of the banking sector. The study also discovered that there was a negative but insignificant

correlation between exchange rates and financial performance of the banking sector and an insignificant positive correlation between inflation rate, GDP growth rate and financial performance. However, the study never recorded any significant correlation among the independent variables (interest rates, economic growth, exchange rates and inflation rates). This implies that there was not multi-collinearity among the independent variables and therefore they can be used as determinants of banking sector's financial performance in regression analysis.

The study concurs with Kanwal and Nadeem (2013) who in a research study sought to establish the relationship that exists between macroeconomic variables (GDP, inflation rate, interest rate) and profitability (measured by ROA, return on equity, and equity multiplier) of public commercial banks in Pakistan. This study covered a period 2001-2011 (ten years). Population comprised thirty-eight banks; a sample of twenty three listed banks was studied. Data was sourced from secondary sources and analyzed using correlation analysis, descriptive statistics as well as pooled ordinary least squares regression analysis. The researchers find a strong positive association between profitability and interest rate, an insignificant positive association between GDP and profitability and a weak negative relationship between rate of inflation and bank profitability.

The findings of the study disagree with Osamwonji and Chijuka (2014) who studied the impacts of macroeconomic variables on commercial banks' profitability. The study was based on 1990 to 2013 secondary data obtained in Nigeria. The secondary data was obtained from central bank as well as firms annual reports and financials. Macroeconomic variables studied are GDP, inflation rate, and interest rate; the proxy for

profitability being return on equity. Data analysis was by way of ordinary regression. The study finds a significant positive relationship between GDP and return on equity, a significant negative relationship between return on equity and interest rate, and an insignificant negative relation involving inflation rate.

5.4 Policy Recommendations

The study unveiled that interest rate has a significant positive effect on Kenyan banking sector's financial performance. This implies that an increase in rates of interest causes an increase in financial performance of the banking sector in Kenya. This can be explained by the reality that interest income is the main source of revenue for banks and so an increase in interest rates translates to an increase in financial performance. Policy makers such as the Central bank should maintain interest rates at a level that will maximize financial performance of the banking sector but at the same time take into account the negative effect of higher interest rates in the economy.

Commercial banking sector in Kenya should consider macro-economic variables such as rates, interest rates, exchange rates and GDP in their policy formulation to manage their effect on the financial performance. The Kenyan Government through the Central bank should come up with policies that create a conducive environment for commercial banks to operate in since an improved financial performance in the banking sector will translate to economic growth of the country.

5.5 Limitations of the Study

This study mainly relied on the data provided by KNBS and CBK. This implies that the accuracy of the data obtained depended on the information provided. The researcher didn't have any control over this accuracy. This is usually a general problem when dealing with secondary data. In order to handle this challenge, the researcher had to counter check the data from both KNBS and CBK for any differences.

The scope of this research was for 10 years 2008-2017. It has not been determined if the results would hold for a longer study period. Furthermore it is uncertain whether similar findings would result beyond 2017. A longer study period is more reliable as it will take into account major happenings not accounted for in this study.

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more and more data is added to the functional regression model, the hypothesized relationship between two or more variables may not hold.

5.6 Suggestions for Future Studies

The study sought to determine the influence of selected macroeconomic variables on the financial performance of the Kenyan banking sector. The selected macroeconomic variables were rate of interest, growth in the economy, rates of exchange and rates of inflation, which could only account for 43% of the total variance in Kenyan banking sector's financial performance. This implies that there are other key macro-economic

variables that impact the banking sector's financial performance. In future, researchers should seek to know the other determinants of financial performance in the banking sector as this will enable them to make more adequate conclusions in regard to the effect of macroeconomic variables on the banking sector's financial performance.

This study focused on selected macro-economic variables and banking sector's financial performance and relied on secondary data. A research study where data collection depends on primary data i.e. in depth questionnaires and interviews covering the banking sector is recommended so as to compliment this research.

The study concentrated on the last 10 years since it was the most recent data available. Future studies may use a range of many years e.g. from 2000 to date and this can help confirm or disapprove this study's findings. The study limited itself by focusing on the banking sector. The recommendations of this study are that further studies be carried out on other sectors in Kenya. Finally, due to the limitations of regression models, other models such as the Vector Error Correction Model (VECM) can be used to explain the various relationships between the variables

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APPENDICES

Appendix I: Data Collection Form

Year	Quarter	Financial Performance (ROA)	Inflation (CPI)	Interest rates (bank rate)	Exchange rate (KSH/USD)	Economic growth (GDP)