

**THE EFFECT OF MACROECONOMIC VARIABLES ON THE FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

BY

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DECLARATION

This research project is my original work and has not been presented for academic purposes or the award of any degree in any university or institution of higher learning.

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This research project is submitted for examination with my authority as the appointed university supervisor.

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DEDICATION

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LIST OF ABBREVIATIONS

CBK	:	Central Bank of Kenya
GDP	:	Gross Domestic Product
MSc	:	Master of Science
NIM	:	Net Interest Margin
ROA	:	Return on Assets
ROE	:	Return on Equity
ROI	:	Return on Investment

ABSTRACT

The purpose of this study was to determine the effect of macroeconomic variables on the financial performance of commercial banks in Kenya. Previously, studies have been done on the effect of macroeconomic variables on financial performance of commercial banks, microfinance institutions and aviation sector among other industries, but there is no consensus and the results and findings indicate divergent views among different researchers. The measure of financial performance used was return on assets (ROA) measured against the macroeconomic variables like inflation rate, foreign exchange rate gross domestic product (GDP), and lending rate while controlling for effect of asset quality, management efficiency and capital adequacy. The research design used was the descriptive research design. The research study population comprised all the forty two commercial banks in Kenya that are licensed by the Central Bank of Kenya (CBK). A sample of twenty two commercial banks was drawn using stratified random sampling. Secondary data covering a period of five years from 2011 to 2015 was sourced from the study sample. The data was obtained from published annual reports and financial statements of the commercial banks, the Kenya National Bureau of Statistics periodic reports, and Central Bank of Kenya annual reports. The study used regression analysis in examining how macroeconomic variables affect the financial performance of commercial banks in Kenya. The data was analyzed using SPSS. The findings of the study indicate financial performance (measured using return on assets ratio) of commercial banks in Kenya has a strong positive correlation with changes in macroeconomic variables as inferred from the correlation coefficient of 0.768. The main recommendation by the researcher is that bank managers should keep lending rates as stable as possible. The findings are important to various stakeholders both in and out of the Kenyan banking industry including other researchers, bank managers, fund managers, potential investors and financial analysts and the Government.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Financial institutions globally facilitate the movement of funds from the surplus units in an economy to the deficit supply units (Eakins & Mishkin, 2012). Commercial banks form a part of these financial institutions. In Kenya commercial banks are the major players in the financial system (CBK, 2016). Banks undertake their financial intermediation role with the goal of maximizing their returns, also; through improved financial performance. As such they accumulate and deploy assets towards the achieving the desired financial performance.

Banks also operate in the industry and national environment. This environment is often turbulent and volatile as a result of interaction between and among various forces, among them macroeconomic variables. Governments often enact legislation desired to achieve certain socioeconomic goals; these legislative enactments and other government intermediations in the market influence the macroeconomic environment (Osamwonji & Chijuka, 2014). The agency theory (Jensen & Meckling, 1976) postulates that firm managers (agents) should be in a position to anticipate the macroeconomic environment changes and take adaptive measures for them to safeguard and maximize their firms' returns. This study sought to investigate how macroeconomic variables affect the financial performance of commercial banks in Kenya.

1.1.1 Macroeconomic Variables

Macroeconomic variables are the elements that typify the national economy and business environment. In an economy, these macroeconomic factors are not within the influence of one individual firm (Brueggeman & Fisher, 2011). However the government often influences the macroeconomic variables through enactment of legislation and or policies. These factors include the inflation rate, GDP, interest rate, foreign exchange rate, money supply, and so on (Simiyu & Ngile, 2015).

Macroeconomic variables influence the complexity and volatility of the business setting (San & Heng, 2013). Due to increasing globalization and technological advances, economic turbulence in other (international) economies might creep into the local business environment. The government has a precarious role in enhancing stability of the macroeconomic variables. Businesses, among them commercial banks, prefer a stable macroeconomic environment; a stable environment is more predictable, risk is also lower under such stable conditions.

1.1.2 Financial Performance

Financial performance denotes the percentage or degree of attainment of economic goals, objectives and or targets by a firm. Financial performance is specified as at a stated point in time and refers to performance in a given time period (Pandey, 2009). Financial performance is measured in various ways. Financial performance by commercial banks is best measured using ratios such as return on assets, return on equity, net interest margin, equity multiplier, and non-performing loans (Eakins & Mishkin, 2012). Return on assets

ratio is a ratio of net income to total assets; the return on equity is a ratio of net income and shareholders' equity; net interest margin is the difference between interest expenses paid out and interest income earned by a bank.

Firms seek to improve continuously their financial performance for various reasons, among them to maximize shareholder returns (Brueggeman & Fisher, 2011). Returns to shareholders are largely dependent and linked to the financial performance registered by commercial banks. Good financial performance is essential as resources available to a firm are scarce; better financial performance leads to surplus inflow of resources to the banks, these resources are then available to be deployed for further growth, undertake expansion purposes, or to just sustain the commercial banks as going concerns.

1.1.3 Relationship between Macroeconomic Variables and Financial Performance

Macroeconomic variables are anticipated to influence the business setting (Brueggeman & Fisher, 2011). These variables affect the nature and intensity of volatility of the operating environment. According Markowitz, 1952 the portfolio theory states that investors will make decisions on the risk-return tradeoff; such investors tend to prefer more returns to less returns, they also favor less risk to higher risk. High volatility of variables in the macroeconomic environment creates and fosters an unstable and highly volatile environment, risk thus becomes aggravated and in turn threatens returns. Good and healthy financial performance then becomes uncertain.

The theory of efficient market hypothesis (Fama, 1970) postulates that, in a market security prices will reflect all the available information, always. 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 Commercial Banks in Kenya

According to the Central Bank of Kenya, there are forty two commercial banks in Kenya as at end of August 2016. Ten of the commercial banks are listed at the Nairobi securities exchange. Commercial banks in Kenya operate under the purview of the regulator and the provisions of the Companies Act and the Banking Act, and the prudential guidelines issued by the central bank of Kenya (CBK, 2016). Banks are also licensed by the central bank and are subject to maintain some minimum ratios in their operations; minimum capital is set at Kenya shillings one billion, there are also minimum liquidity ratios, core capital to loans or to total risk weighted assets ratios, and so on. These ratios are intended to allow the banks to be able to survive business shocks and risks.

Commercial banks in Kenya have registered growth in aggregate profits 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.

1.2 Research Problem

Macroeconomic variables affect the performance of commercial banks; it affects their profitability (Gerlach, Peng & Shu, 2005). Variations in macroeconomic variables affect the operating environment of commercial banks; it affects turbulence and volatility. Markets turbulence presents threats as well as opportunities to the industry players simultaneously. Agency theory (Jensen & Meckling, 1976) presupposes that agents (firm managers) ought to position their firms by adequately adapting to the macroeconomic changes and thereby safeguarding the owners' interests. In practice firm managers can or may fail to adequately react to the fluctuations in macroeconomic variables early enough or at all. This study sought to investigate how macroeconomic variables affect the financial performance of commercial banks in Kenya.

In Kenya the central bank through its monetary policy committee, sets base lending rate and as such influences the prevailing lending rates in the economy (CBK, 2016). Banks in Kenya have also showed growth in profitability over the previous few years, with the exception of a few that reported losses. The Kenyan government also influences

macroeconomic variables not only through economic and fiscal policies but also through market activities such as issuance of government debt securities, capping of interest rates in the economy. Banks are left with the only option of adapting to macroeconomic changes in order to protect and safeguard their future financial performance.

A number of research studies (local and foreign) have also embarked on in this research area. Osamwonji and Chijuka (2014) investigated how macroeconomic variables affect the profitability of commercial banks. The study finds a significant positive relationship 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. Gerlach, Peng and Shu (2005) in a study find macroeconomic changes to influence business cycles and changes and affects the profitability of banks in a significant manner.

Simiyu and Ngile (2015) undertook a research study to analyse 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 affected by macroeconomic factors but finds the exchange rate to have a weak negative relationship with return on investment.

The empirical studies reviewed indicate that studies have been done in the past on how macroeconomic variables affect the financial performance of firms by local as well as foreign researchers. However the results and findings indicate divergent views as to how the said variables affect the financial performance. Macroeconomic factors have no effect on financial performance by firms (Kiganda, 2014; San & Heng, 2013); however, Kungu (2013), Ongeri (2013), Simiyu & Ngile (2015) and Gerlach, Peng and Shu (2005) find macroeconomic variables affect financial performance by firms. The specific macroeconomic variables are also found to have differing effect on financial performance measures by different researchers. There is therefore a lack of consensus as to how macroeconomic variables affect the financial performance of firms, commercial banks included. This study sought to fill this gap by seeking to answer the research question: What is the effect of macroeconomic variables on financial performance of commercial banks in Kenya?

1.3 Research Objective

The objective of this study was to investigate the effect of macroeconomic variables on the financial performance of commercial banks in Kenya.

1.4 Value of the Study

The researcher believes that this study shall be of value to a number of parties and persons. Other researchers and scholars shall find the study insightful and the study findings therefrom could act as a reference area for future research studies. Other scholars might obtain impetus to build on this study, say in another context or industry, or by eliminating any limitation(s) that this study shall encounter.

This study shall also add to the existing literature on how macroeconomic variables affect firm performance. Such contribution might be in the form of supporting existing theories proposition or negating the same. Bank managers and directors shall also find the study quite invaluable. They may obtain useful input into their corporate decisions and strategies; macroeconomic variables influence the national and industry environment in many ways and intensity. An understanding of the effect of the said variables on firm performance is quite apt during decision making processes.

Potential investors as well as the existing ones in the banking industry could also 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 government and her policy making arms could also draw insights from the study. This study focuses on the effect of macroeconomic variables on financial performance of commercial banks. The banking industry in Kenya plays a great role in the economy, more so as tax payers. Government and her agencies could thus draft good macroeconomic policies with the effect on banking industry performance (and in effect, taxes paid by the banks) in their minds.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses and presents the literature relevant to this study. It is organized into various sections: Theoretical Review, Determinants of Financial Performance by banks, Empirical Review, Conceptual Framework, and summary.

2.2 Theoretical Review

This section presents the main theories relevant to this study. These theories are: Portfolio theory, Agency Theory, and Efficient Markets Hypothesis.

2.2.1 Portfolio Theory

The Portfolio Theory (Markowitz, 1952) posits that investors build investment portfolios on the sole basis of risk and return trade off(s). The theory takes the assumption that investors or individuals prefer more return to less return, and they also prefer less risk to higher risk. This results in investment portfolios being composed of individual assets whose overall effect on the portfolio is one that maximizes returns while ensuring the least risk exposure. This kind of portfolio is well diversified; thus there is no need to actively manage the individual assets singly but the overall portfolio performance should be managed.

Macroeconomic variables affect the general business environment within an economy (Brueggeman & Fisher, 2011). An environment of volatile macroeconomic variables such

as volatile exchange rates or inflationary pressures, imply that returns accruing to businesses and firms, commercial banks included, shall fluctuate. Uncertainty in returns thus creeps in, thus higher risk. Also, the financial performance by firms in such environments fluctuates. Bank management should thus be on the lookout for macroeconomic changes and adopt accordingly as quickly as possible (Pandey, 2009).

2.2.2 Agency Theory

Agency Theory (Jensen & Meckling, 1976) stems from the separation of ownership management in corporations. Owners are taken as being the principals while the managers assume the role of agents. The principals have the objective of maximizing their wealth; the agents should undertake and run the activities of the corporations in the best interest(s) of this shareholder wealth maximization objective. The theory is however cognizant of the possibility that the agents may inadvertently or willfully purpose to pursue other interests that might be outside and nonaligned with those of the principals. This shall have a negative impact on the association between the two said parties.

Macroeconomic variables form and influence to a great extent the business environment (Pandey, 2009). The stability or volatility of the macroeconomic variables therefore could sustain or threaten the attainment of organizational goals. Among the main organizational goals is good financial performance. The firm managers (agents) may fail to anticipate changes in the macroeconomic environment early enough to adopt these same in their operations; this threatens performance of their firms, or even their mere existence. This research study investigated the relationship between macroeconomic variables and the financial performance of commercial banks in Kenya.

2.2.3 Efficient Markets Theory

The efficient markets theory is another theory relevant to this study. The theory is primarily based on the assumption that security prices always fully reflect all the information in the market (Fama, 1970). The theory is based on the assumption that in a market there are many participants who have homogenous expectations and reactions to information. Information is also premised to trickle into the markets randomly and any new information is available to all the participants at little or no costs. Any mispricing in the markets is quickly eliminated by arbitrage actions, also.

The existence of market anomalies negate the expectation of the efficient markets hypothesis (Pandey, 2009). Various market players, among them commercial banks, have different strengths and operational weaknesses; they therefore might react differently to the same information, as their individual situations might dictate. Changes, both anticipated and actual, in macroeconomic variables often form part of the information that trickles into the economy and markets. Commercial banks ought to quickly adopt this macroeconomic information into their operations by say adjusting their pricing levels or crafting new strategies all together.

2.3 Determinants of Financial Performance of Commercial Banks

Macroeconomic variables do affect financial performance of commercial banks (Gerlach, Peng & Shu, 2005). However, there are other factors that are theoretically known to affect the financial performance of commercial banks. These are presented below:

2.3.1 Bank Specific Factors

Bank specific factors that are characteristic and unique to individual banks. These factors may include assets quality, capital adequacy, management efficiency, earnings management, liquidity management, and sensitivity to market risk, and affect financial performance of banks in different ways. Capital adequacy indicates a particular bank's capability to effectively and efficiently run its operations and respond to competitive forces adequately (Koch & MacDonald, 2006). The central bank of Kenya requires banks to maintain certain minimum capital levels and to make loans and advances as a factor of the capital held (CBK, 2016). Owners of a bank thus need to be able to determine the optimal capital requirements on the basis of rate of return on assets, and business conditions (Eakins & Mishkin, 2012).

Asset quality is also another internal factor that affects financial performance of banks. It indicates the ratio of the outstanding nonperforming loans and advances to the total loans and advances made by a bank. Since commercial banks are expected by law and prudential guidelines to make provisions in the calculation of their profits, higher nonperforming loans hinders financial performance by banks with such exposures (Eakins & Mishkin, 2012). Prudent lending practices and internal controls are thus key to realizing good asset quality; proactive and prompt recovery efforts are also important towards this end. Poor asset quality has historically been attributed to dismal performances and even failure by commercial banks in Kenya (CBK, 2016).

Management efficiency also affects the overall profitability and financial performance by commercial banks. It is indicated in the ratio of the total costs to total income ratio. In Kenya the average commercial banking industry cost income ratio has been slightly above fifty percent on average (CBK, 2016). Management efficiency reflects how wasteful or prudent a bank's management undertakes its day-to-day operations and a low ratio is preferred and targeted by bank managements. Low cost income ratio also imparts earnings management positively; which in turn affect financial performance and sustainability of banking operations over the long term.

Liquidity management is also another factor that is theoretically expected to affect performance of banks not only in Kenya but also the world over. Banks facilitate financial transactions in the financial system, being the major players in the economy. Financial transactions involve movement of funds from one side of the economy to another depending on the underlying needs. Banks also handle different transactions, in terms of volume, nature, as well number; all these imply a need by different commercial banks to hold optimum liquidity levels at varying times so as to facilitate these transactions at the least cost implications. Poor liquidity management might mean unnecessary and avoidable costs are incurred (Eakins & Mishkin, 2012). The central bank of Kenya however often plays the last resort lender role, albeit at usurious terms.

A bank's ability to proactively and strategically manage the bank specific factors mentioned above does affect its financial performance in ways more than one, therefore. It also influences a bank's sensitivity to market risk. Exposure to market risk emanates

and is influenced by the happenings in the macroeconomic environment within the country and even to global happenings. These environments are often turbulent and volatile thus affecting business cycles and market risk; with a firm's sensitivity to these risks affecting its performance (Koch & MacDonald, 2006).

2.3.2 Other Factors

Determinants of the financial performance of commercial banks are not only the above discussed bank specific factors, there exists other factors that also affect the performance of banks. A number of these other factors are presented under this subsection.

A bank's size influences its financial performance. Size affect a banks operational capabilities as well as reach. Size could be interpreted from the perspective of total assets held, number of branches, number of geographical and markets reach, number of customers and borrowers, and so on (Eakins & Mishkin, 2012). Small banks often serve lucrative high margins market niches and thus generate higher return on assets. However large banks have economies of operations in their favour; the big banks employ fewer staff per unit asset, than smaller banks; large banks are thus able to sustainably withstand market shocks as well as safeguard or even grow their market shares (Koch & MacDonald, 2006).

Financial innovation is also another factor known to influence performance by commercial banks. Financial innovation encompass products and processes innovations or even institutional innovation that result in new ways of serving the clients, new products, or even new markets altogether. It results in cost effective ways of doing

business. A bank's ability to innovate thus largely reflects in its market share held and growth over time; cost savings also result from innovations, especially with the ever-technological advancements. Financial innovation leads to better financial performance by banks (Nyathira, 2012).

Corporate governance is also another factor that affects firm performance (Raissa, 2014). Corporate governance is mirrored in the mechanisms that a bank puts in place to not only safeguard the corporate assets as well as ensure the continued existence as a going concern (Pandey, 2009). If proper corporate governance principles have been put in place then the owners' interests are protected and pursued at all times; also, it ensures the interest of the owners' to be aligned with the managers' (even at a cost to the firm), thereby affecting financial performance (Jensen and Meckling, 1976).

2.4 Empirical Review

This section reviews foreign and local studies that have been previously done by various researchers and are related or are relevant to the research study.

2.4.1 Foreign Studies

Osamwonji and Chijuka (2014) investigated the effect of macroeconomic variables on profitability of commercial banks. 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. This study however fails to indicate neither the population of the study nor the sample used.

Zhang and Daly (2013) examined how macroeconomic and bank specific factors affect the performance of banks in China. The study period covered was 2004 to 2010. The population of the study 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 exert negative effect on performance. Banks also grow along with growth in the economy; greater economic amalgamation increases bank profitability.

San and Heng (2013) investigated how 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 return on assets 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.

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 return on assets, 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 analysed using correlation analysis, descriptive statistics as well as pooled ordinary least squares regression analysis. The researchers find a strong positive relationship between profitability and interest rate, an insignificant positive relationship 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 relationship between macroeconomic variables and commercial banks earnings.

Gerlach, Peng and Shu (2005) undertook a study to investigate how macroeconomic development affects the profitability of banks. The study was undertaken in Hong Kong and covered the period 1994 to 2002. Population studied consisted of twenty-nine retail banks in Hong Kong; the study was a census study. Secondary data was obtained and analysed using regression analysis. The study finds macroeconomic changes to influence business cycles and changes and affects bank profitability in a significant manner. The study used net interest margin and nonperforming loans (ratio of these loans to total loans and advances) as the proxy for bank profitability.

2.4.2 Local Studies

Simiyu and Ngile (2015) undertook a research study to analyse how macroeconomic variables affect of on the profitability of listed commercial banks in Kenya. 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.

Kiganda (2014) also undertook a study to investigate how macroeconomic variables affect the performance of commercial bank profitability in Kenya. 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.

Ongeri (2014) also in a research study investigated how macroeconomic variables affect the financial performance of non-banking financial institutions in Kenya. The study employed a descriptive research design and obtained secondary data on the one hundred

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 interest rate, and return on assets; and concludes that there is a positive effect 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.

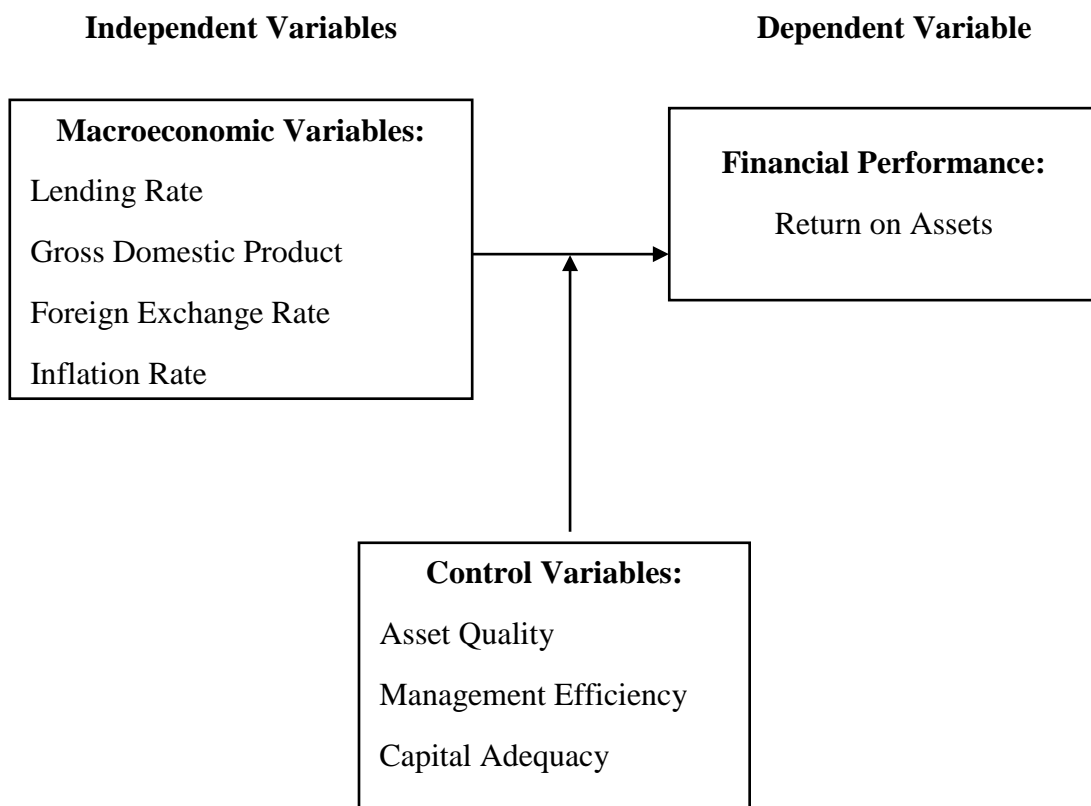
Kungu (2013) in a research study to establish how financial performance (return on investment) of private equity firms in Kenya is affected by macroeconomic variables (GDP, interest rate, inflation rate, foreign exchange rate), used a descriptive and correlation research designs. The population covered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

Nyathira (2012) in a research study that investigated the effect of financial innovation on the financial performance of commercial banks in Kenya, used a causal research design. The population of the study comprised all the forty-three commercial banks then in Kenya. The census study collected secondary data from financial reports and government statistics. Regression analysis was undertaken in data analysis. The study finds that

financial innovation leads to improvement in financial performance by banks in Kenya as well as the overall banking industry. This study is relevant from the perspective of determinants of financial performance of commercial banks.

2.5 Conceptual Framework

Figure 2.1: Conceptual Framework



Source: Researcher (2016).

2.6 Summary of Literature Review

This chapter has presented and discussed the relevant literature that shall guide the proposed research study. The chapter begins with an introduction then theoretical review is made. Three main theories relevant to the study have been discussed. Also other determinants of bank financial performance, as well as the empirical studies (both local and foreign), have been discussed. The conceptual framework has also been presented and the chapter ends with this summary.

The empirical studies reviewed indicate how macroeconomic variables affect the financial performance of firms has been studied previously by local as well as foreign researchers. However, the results and findings indicate divergent views as to the effect of the said variables on financial performance. Macroeconomic factors have no effect on financial performance by firms (Kiganda, 2014; San & Heng, 2013); however, Kungu (2013), Ongeru (2013), Simiyu & Ngile (2015) and Gerlach, Peng & Shu (2005) find macroeconomic variables affect financial performance by firms. The specific macroeconomic variables are also found to have differing effect on financial performance measures by different researchers. There is therefore lacks unanimity as to how macroeconomic variables affect the financial performance of firms, commercial banks included. There is need for further research, thus. This research study sought to fill this gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses in detail the research methodology that was followed when conducting the research study. It has detailed the research design that was used, population and sampling, data collection as well as the data analysis methods and tests of significance that was undertaken.

3.2 Research Design

The research study used a descriptive research design. Kothari (2004) states that in descriptive research studies, objects, items, variables under study are studied with intention to describe them the way they are or exist. This study sought to investigate the effect of macroeconomic variables on financial performance of commercial banks in Kenya; a descriptive research design was thus apt.

3.3 Population of the Study

According to Kothari (2004) a population is the complete listing of all the items under research study; it encompasses all the items under study. The population of this research study comprised of all the commercial banks in Kenya (see appendix I). The central bank of Kenya indicates that there are presently (August 2016) forty-two commercial banks in the country (CBK, 2016).

3.4 Sampling Design

A sample is a smaller representation of the population (Kothari, 2004). A sample is drawn from the population using the sampling design or method; which could be simple and based on convenience or complex and based on say random numbers. This study utilized the stratified random sampling technique to draw a study sample. Stratified random sampling was used where the population of study was capable of being classified into categories or subclasses or sections (Kothari, 2004). The central bank of Kenya categorizes commercial banks into Large, Medium, as well as Small banks (CBK, 2016). These categories comprised strata upon which six large, eight small and eight medium banks were randomly drawn to obtain a study sample of twenty-two commercial banks.

3.5 Data Collection

This study primarily relied on secondary data. The data was sourced using a data collection form (see Appendix II). Among the sources of the data were published annual and financial statements of commercial banks, Kenya National Bureau of Statistics periodic reports, and Central Bank of Kenya annual reports. The data covered a five-year period, 2011 to 2015.

3.6 Validity and Reliability

Validity and reliability are a measure of the data collection instrument characteristics as well as adequacy to be confidently used in the data collection exercise. Reliability relates to a data collection instrument being able to deliver consistent results time and again. Validity relates to various dimensions; a key dimension being the content capability of

the data collection instrument to adequately cover or capture the data being collected (Kothari, 2004). The researcher solely gleaned data from the various sources using the data collection form; thereby assuring consistency. Secondary data was solely utilized in the study; thus same results could be obtained by different users of the data collection instrument. The data collection form was structured in a simple but adequate way, thereby assuring content validity. The form was able to capture adequately the sought data.

3.7 Data Analysis

The data collected was checked for errors, edited and then presented in tables. Descriptive statistics such as the mean, standard deviation, were calculated and used to present the data in a summarized manner. To establish how macroeconomic variables affect the financial performance of commercial banks in Kenya, this study undertook regression analysis. The specific analytical model being as presented and described in the succeeding subsection.

3.7.1 Analytical Model

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \varepsilon$$

Where:

Y = financial performance, measured by return on assets ratio (net Income/Total assets);

β_0 = the intercept, the value the dependent variable (financial performance) assumes in the absence of the model's independent variables;

β_i = **beta coefficients**, for the respective independent variable; that is, the amount by which the dependent variable changes following a unit change in the respective independent variable;

ε = **error term**;

X_1 = **Gross Domestic Product**, measured by the percentage change in the annual gross domestic product (GDP) in Kenya;

X_2 = **Inflation Rate**, measured by the annual percent change in the consumer price index;

X_3 = **Foreign Exchange Rate**, measured by the annual percent change in the average foreign exchange rate (Kenya shilling against the United States dollar);

X_4 = **Lending Rate**, measured by the percent change in annual lending rate;

X_5 = **Asset Quality**, measured by the ratio of nonperforming loans to total loans and advances;

X_6 = **Management Efficiency**, measured by the ratio of total costs to total income;

X_7 = **Capital Adequacy**, measured by the ratio of total loans and advances to total

3.7.2 Test of Significance

T test was undertaken to test the level of significance of the model variables at 95 percent level of significance. A significance level is a critical possibility related with an arithmetical assumption test that indicates how likely it is that a conclusion supportive of a difference between an observed value and some arithmetical expectation holds (Zikmund et al., 2010). F test was also undertaken to establish the strength of any association that the analytical model depicted.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis, research results and discussion.

4.2 Response Rate

This section details the study response rate. The study targeted a sample of twenty-two commercial banks in Kenya. The research study achieved an 81.82 percent response rate; four of the sampled firms had incomplete data sets. This response rate was adequate for analysis.

4.3 Data Validity

Under section 3.6 data validity and reliability was to be achieved by having the researcher solely glean the relevant data from the various sources using the data collection form. Secondary data was also to be solely utilized in the study using a simple structured data collection form. The researcher solely collected the secondary relevant data using the data collection form annexed under appendix II.

4.4 Descriptive Statistics

This section presents and discusses the descriptive statistics. Each study variable mean, standard deviation, coefficient of variation, kurtosis and skewness are covered. The table 4.1 below provides a summary of the descriptive statistics.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Deviation	Statistic	Statistic
					Statistic		
Lending Rate	90	-9.4%	44.5%	6.381%	20.2277%	1.186	-.235
GDP	90	-24.6%	23.9%	0.628%	16.1058%	-.180	-.844
Foreign Exchange	90	-4.8%	12.1%	4.583%	6.4940%	-.066	-1.448
Inflation Rate	90	5.7%	14.0%	8.508%	3.0178%	1.016	-.493
Management Efficiency	90	32.8%	87.4%	59.546%	12.8857%	-.063	-.771
Capital Adequacy	90	34.3%	71.7%	57.998%	7.8033%	-.834	.572
Return on Assets	90	-1.6%	6.4%	2.397%	1.4618%	-.112	.467
Asset Quality	90	0.9%	30.5%	9.665%	7.9218%	1.050	.007
Valid N (listwise)	90						

Source: research findings

The lending rate variable has a minimum value of -9.4% and a maximum of 44.5% and a mean of 6.381% and a standard deviation about the mean of 20.23%. The variable has a skewness and kurtosis of 1.186 and -0.235 respectively. The skewness of this variable is positive but low within the mean; kurtosis is negative but low also. This indicates few or no outliers in the lending rate variable. The return on assets variable has a minimum value of -1.6% and a maximum of 6.4% with a mean of 2.397% and a 1.4618% standard deviation. Skewness and kurtosis are -0.112 and 0.467 respectively. This indicates that the variable data are slightly skewed to the left and since the kurtosis is low, there are very few outliers also.

The GDP variable has a minimum value of -24.6% and a maximum of 23.9% with a mean of 0.628% and a 16.1058% standard deviation. Skewness and kurtosis are -0.18 and -0.844 respectively. This indicates that the variable data are slightly skewed to the left and since the kurtosis is low, there are very few outliers also. The foreign exchange variable has a minimum value of -4.8% and a maximum of 12.1% with a mean of 4.583% and a 6.494% standard deviation. Skewness and kurtosis are -0.066 and -1.448 respectively. This indicates that the variable data are almost normally distributed and since the kurtosis is low, there are very few outliers also.

The inflation rate variable has a minimum value of 5.7% and a maximum of 14.0% with a mean of 8.508% and a 3.0178% standard deviation. Skewness and kurtosis are 1.016 and -0.493 respectively. This indicates that the variable data are slightly skewed to the right and since the kurtosis is low, there are very few outliers also. The assets quality variable

has a minimum value of 0.9% and a maximum of 30.5% with a mean of 9.665% and a 7.9218% standard deviation. Skewness and kurtosis are 1.050 and 0.007 respectively. This indicates that the variable data are skewed to the right and since the kurtosis is very low, there are no outliers.

The management efficiency variable has a minimum value of 32.8% and a maximum of 87.4% with a mean of 59.546% and a 12.8857% standard deviation. Skewness and kurtosis are -0.063 and -0.771 respectively. This indicates that the variable data are near normally distributed and since the kurtosis is low, there are very few outliers also. The capital adequacy variable has a minimum value of 34.3% and a maximum of 71.7% with a mean of 57.998% and a 7.8033% standard deviation. Skewness and kurtosis are -0.834 and 0.572 respectively. This indicates that the variable data are skewed to the left and since the kurtosis is low, there are very few outliers also.

4.5 Correlation Analysis

This section details the correlation between the dependent variable (financial performance) and each independent variable of the research study. The correlation analysis was undertaken with asset quality, management efficiency, and capital adequacy as control variables. The table 4.2 below gives the summary.

4.5.1 Correlations

Table 4.2: Correlations

Control Variables			Return on Assets	Lending Rate	GDP	Foreign Exchange	Inflation Rate
Management Efficiency & Capital Adequacy & Asset Quality	Return on Assets	Correlation	1	-0.08	0.008	-0.21	0.03
		Significance (2-tailed)	.	0.461	0.943	0.051	0.782
		df	0	85	85	85	85
	Lending Rate	Correlation	-0.08	1	0.24	0.814	0.833
		Significance (2-tailed)	0.461	.	0.025	0	0
		df	85	0	85	85	85
	GDP	Correlation	0.008	0.24	1	0.495	-0.216
		Significance (2-tailed)	0.943	0.025	.	0	0.044
		df	85	85	0	85	85
	Foreign Exchange	Correlation	-0.21	0.814	0.495	1	0.374
		Significance (2-tailed)	0.051	0	0	.	0
		df	85	85	85	0	85
	Inflation Rate	Correlation	0.03	0.833	-0.216	0.374	1
		Significance (2-tailed)	0.782	0	0.044	0	.
		df	85	85	85	85	0

Source: Research findings

Return on assets (dependent variable) has a negative 0.08 correlation coefficient against the lending rate and a significance of 0.461. This indicates a weak and somewhat significant negative correlation between lending rate and return on assets. A slight

increase in the lending rate leads to a small decrease in return on assets, while controlling for the effects of management efficiency, capital adequacy, and asset quality. Return on assets also has a negative 0.21 correlation coefficient against the foreign exchange rate and a significance of 0.051. This indicates a weak insignificant negative correlation between the foreign exchange rate and the return on assets. A slight increase in the foreign exchange rate leads to a decrease in return on assets.

GDP and inflation both have positive significant correlations with return on assets. GDP has a 0.008 correlation coefficient with return on assets with a high significance of 0.943 while inflation rate has a correlation of +0.03 with return on assets and a significance of 0.782. Given from section 4.4 above the return on assets statistic ranges between a minimum of -1.6% and 6.4%, these GDP and inflation rate changes significantly correlate with the dependent variable (return on assets).

4.5.2 Test for Multicollinearity

The problem of multicollinearity arises when the independent variables are highly correlated (Kothari, 2004). The independent variables GDP and lending rate have a correlation coefficient of 0.24; thus positively correlated, but in weak sense. Foreign exchange rate and inflation have a correlation coefficient of 0.374; indicative of a weak positive correlation between the two variables. GDP and foreign exchange have a 0.495 correlation coefficients; thus also positively correlated. However, the lending rate variables appears to have a high correlation though insignificant, with foreign exchange (0.814) and inflation (0.833). The researcher notes therefore that there is a problem of

multicollinearity between lending rate and foreign exchange rate & inflation, but not among all the independent variables.

4.6 Regression Analysis and Hypotheses Testing

This section discusses the model summary results, the analysis of variance (ANOVA), correlation analysis and the model coefficients.

4.6.1 Model Summary

Table 4.3: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768 ^a	0.589	0.554	0.98%

a. Predictors: (Constant), Asset Quality, Foreign Exchange, Capital Adequacy, Inflation Rate, Management Efficiency, GDP, Lending Rate

Source: Research Findings

R square is a measure that denotes how analysed data are near to a best line of fit. It is also referred as coefficient of determination (Kothari, 2004). The study model indicates an R, R square and adjusted R square figures of 0.768, 0.589 and 0.554 respectively. Therefore 58.90% of the variations of the research data around the average is described by the model. R coefficient assists to depict the correlation of the study variables. A 0.768 R coefficient shows that there is a strong positive relationship between financial performance by commercial banks in Kenya and macroeconomic variables, while controlling for effect of asset quality, management efficiency, and capital adequacy.

4.6.2 Analysis of Variance

This section discusses the analysis of variance (ANOVA). The table 4.4 below indicates the summary of the analysis of variance.

Table 4.4: Analysis of Variance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.068	7	16.01	16.806	.000 ^b
	Residual	78.114	82	0.953		
	Total	190.181	89			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Asset Quality, Foreign Exchange, Capital Adequacy, Inflation Rate, Management Efficiency, GDP, Lending Rate

Source: Research Findings

From the analysis of variance findings in the table 4.4 above, the F statistic is 16.806. The significance of the study model is 0.00. The analysis was undertaken at 95% level of significance. The 0.00 significance level is therefore within the 0.025 2-tail confidence interval, thus the study model is significant.

4.6.3 Model Coefficients

Under this section, the regression analysis model coefficients are presented and discussed. The table 4.5 below provides the summary.

Table 4.5: Model coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5.175	10.888		0.475	0.636	-16.484	26.834
	Lending Rate	0	0.267	-0.007	-0.002	0.999	-0.531	0.53
	GDP	0.018	0.051	0.197	0.352	0.725	-0.083	0.119
	Foreign Exchange	-0.069	0.412	-0.308	-0.168	0.867	-0.89	0.751
	Inflation Rate	0.089	1.238	0.183	0.072	0.943	-2.375	2.553
	Management Efficiency	-0.064	0.009	-0.56	-7.169	0	-0.081	-0.046
	Capital Adequacy	0.018	0.015	0.098	1.244	0.217	-0.011	0.048
	Asset Quality	-0.052	0.014	-0.283	-3.746	0	-0.08	-0.024

Source: Research Findings

From the summary table 4.6 above, the below study model was obtained:

$$Y = 5.175 + 0.018X_1 + 0.089X_2 - 0.069X_3 + 0X_4 - 0.052X_5 - 0.064X_6 + 0.18X_7$$

Based on the obtained model above, with of absence of the independent and control variables, financial performance by commercial banks in Kenya shall be at a level of 5.175. A unit change in GDP level results in an insignificant (0.018) change in financial performance of commercial banks in Kenya, a unit increase/decrease in inflation rate leads to a 0.089 increase/decrease in financial performance of the said firms, a unit increase/decrease in foreign exchange rate leads to a 0.069 decrease/increase in financial performance of commercial banks, while a unit increase/decrease in lending rate leads to a 0.00 decrease/increase in financial performance. Also relative to their effect on

financial performance, all the study variables have significant effect on financial performance except for control variables.

4.7 Discussion of Research Findings

The study therefore finds that financial performance by commercial banks in Kenya has a strong positive correlation with changes in macroeconomic variables, this is inferred from the correlation coefficient of 0.768. Regression analysis results indicate that macroeconomic variables changes also have significant effect on financial performance among commercial banks in Kenya. These research findings supports the positions held by Portfolio theory (Markowitz, 1952); portfolio theory anticipates changes in macroeconomic variables and environment to influence risk and hence returns by firms. Management and bank directors should thus proactively anticipate changes in the macroeconomic environment and adopt them in their pricing structures as supposed by efficient markets hypothesis (Fama, 1970). Surprisingly the lending rate coefficient in the model is at zero. This could need further research.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the research study findings summary, conclusions and recommendations. Limitations and suggestion for further future research are also covered.

5.2 Summary of Findings

The objective of the research study was to investigate the effect of macroeconomic variables on the financial performance of commercial banks in Kenya. Towards this end, the study obtained and analyzed secondary data (covering period 2011 to 2015) relevant to the study.

Over the study period the lending rate variable has a low of -9.4% and a high of 44.5% and a mean of 6.381% and a standard deviation 20.23%, skewness and kurtosis of 1.186 and -0.235 respectively. The return on assets variable has a minimum value of -1.6% and a maximum of 6.4% with a mean of 2.397% and a 1.4618% standard deviation, skewness and kurtosis are -0.112 and 0.467 respectively. The GDP variable has a minimum value of -24.6% and a maximum of 23.9% with a mean of 0.628% and a 16.1058% standard deviation. The foreign exchange variable has a minimum value of -4.8% and a maximum of 12.1% with a mean of 4.583% and a 6.494% standard deviation. The inflation rate variable has a minimum value of 5.7% and a maximum of 14.0% with a mean of 8.508%

and a 3.0178% standard deviation. Skewness and kurtosis are 1.016 and -0.493 respectively.

The assets quality variable has a minimum value of 0.9% and a maximum of 30.5% with a mean of 9.665% and a 7.9218% standard deviation. Skewness and kurtosis are 1.050 and 0.007 respectively. The management efficiency variable has a minimum value of 32.8% and a maximum of 87.4% with a mean of 59.546% and a 12.8857% standard deviation. Skewness and kurtosis are -0.063 and -0.771 respectively. The capital adequacy variable has a minimum value of 34.3% and a maximum of 71.7% with a mean of 57.998% and a 7.8033% standard deviation.

From the analysis of variance and correlation analysis, 0.768 correlation coefficient is observed between financial performance by commercial banks in Kenya and macroeconomic variables, while controlling for effect of asset quality, management efficiency, and capital adequacy.

5.3 Conclusion

From the summary of findings above there is a strong positive between financial performance by commercial banks in Kenya and macroeconomic variables, while controlling for effect of asset quality, management efficiency, and capital adequacy. Also relative to their effect on financial performance, all the study variables have significant effect on financial performance except for control variables. Therefore the researcher

concludes that macroeconomic variables overall have a positive significant effect on the financial performance of commercial banks in Kenya.

5.4 Recommendations

On the basis of this research findings, the researcher recommends that bank management and other interested parties such as investors, should hold lending rates as constant (stable) as much as possible. Changes in this variable have zero impact on return on assets (financial performance). The researcher also recommends the effect of inflation, GDP and capital adequacy to be managed aptly as these affect the financial performance positively. The effect of foreign exchange rate changes, management efficiency changes, as well as asset quality movements need cautious management also; these were found to negatively and significantly affect financial performance.

5.5 Limitations of the Study

The researcher encountered a few limitations while undertaking the research study. First, time was a limiting factor. The research study was motivated by fulfilment of academic requirements within some stipulated time deadlines. This somewhat limited the scope of the research study. Second, the study period covered a five year study period. A longer time period of say ten years would unravel better the effect of macroeconomic variables on financial performance of banks especially that regimes do change after five years in Kenya. Another limitation is that the research findings could only be applied to commercial banks and not to other industries.

5.6 Suggestions for Further Research

The researcher suggests further research on the same area but done using primary data. This shall assist to provide a comparison between secondary data reliance and primary data based research. The researcher also recommends that the same study be replicated in another developing economy setup as Kenya's. This shall serve to enrich the existing literature on the effect of macroeconomic variables on firm performance.

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APPENDICES

APPENDIX I: POPULATION

	<u>Name</u>	<u>Classification</u>		<u>Name</u>	<u>Classification</u>
1	African Banking Corp. Bank Ltd	Small	22	Giro Commercial Bank Limited	small
2	Bank of Africa Kenya Limited	medium	23	Guaranty Trust Bank (Kenya) Ltd.	medium
3	Bank of Baroda (Kenya Limited)	medium	24	Guardian Bank Limited	small
4	Bank of India	medium	25	Gulf African Bank Ltd	small
5	Barclays Bank of Kenya Limited	Large	26	Habib Bank A G Zurich	small
6	CFC Stanbic Bank Kenya Limited	medium	27	Habib Bank Limited	small
7	Chase Bank Limited	medium	28	I&M Bank Limited	medium
8	Citibank N A	medium	29	Imperial Bank Limited	medium
9	Commercial Bank of Africa Limited	Large	30	Jamii Bora Bank	small
10	Consolidated Bank of Kenya Limited	Small	31	Kenya Commercial Bank Limited	large
11	Co-operative Bank of Kenya Limited	Large	32	K-Rep Bank Limited	small
12	Credit Bank Limited	Small	33	Middle East Bank Kenya Limited	small
13	Development Bank of Kenya Limited	Small	34	National Bank of Kenya Limited	medium
14	Diamond Trust Bank Limited	medium	35	NIC Bank Limited	medium
15	Dubai Bank Kenya Limited	small	36	Oriental Commercial Bank Limited	small
16	Eco Bank Limited	medium	37	Paramount Universal Bank Limited	small

17	Equatorial Commercial Bank Limited	small	38	Prime Bank Limited	medium
18	Equity Bank Limited	Large	39	Standard Chartered Limited	large
19	Family Bank Ltd	medium	40	Trans-National Bank Limited	small
20	Fidelity Commercial Bank Limited	small	41	UBA Kenya Bank Ltd	small
21	First Community Bank	small	42	Victoria Commercial Bank Limited	small

APPENDIX II: DATA COLLECTION FORM

SERIAL NUMBER

BANK NAME

<u>YEAR\</u> <u>VARIABLE</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
ROA					
X₁					
X₂					
X₃					
X₄					
X₅					
X₆					
X₇					