

**EFFECT OF CENTRAL BANK OF KENYA REGULATIONS ON THE FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS LISTED AT THE NAIROBI
SECURITIES EXCHANGE IN KENYA.**

ARON NDOLO

15/05642

**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR
THE DEGREE OF MASTERS OF SCIENCE IN COMMERCE (FINANCE AND
INVESTMENT OPTION) OF KCA UNIVERSITY.**

NOVEMBER 2017

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

Student Name: _____ Reg. No. _____

Sign: _____ Date: _____

I do hereby confirm that I have examined the master's dissertation of

ARON NDOLO

And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

Sign: _____ Date: _____

Name _____

DEDICATION

I dedicate this dissertation to my family members. My Dad John Munywoki and mum Josephine Munywoki for their love on education which encouraged me up to this. To my brother Joseph Ngui and my sister Mirriam Nthambi for their moral support they provided to me during the research period. God bless you.

ACKNOWLEDGEMENT

I most sincerely thank God first, for enabling me to overcome some challenges which came across during the study. Secondly, I thank my supervisor Dr. Michael Njogo for his exceptional guidance and valuable suggestions, not forgetting my dear classmates; Oscar, Sibagaya, Salat, Kelvin, Irene and Alice for their motivation and always willing to help whenever challenges arises. You all contributed a lot towards the success of this study. I salute you all and my God bless you abundantly.

TABLE OF CONTENTS

DEDICATION.....	ii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES.....	viii
LIST OF ABBREVIATIONS	ix
DEFINATION OF TERMS	x
ABSTRACT.....	xi
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Central Bank of Kenya Revised Regulations.....	3
1.1.2 Financial Performance of Commercial Banks.....	5
1.2 Statement of the Problem.....	8
1.3 Objectives of the study.....	10
1.4 Research questions.....	10
1.5 Significance of the Study	11
1.6 Scope of the Study.....	12
1.7 Basic Assumptions.....	12
CHAPTER TWO	13
LITERATURE REVIEW	13

2.1: Introduction.....	13
2.2: Theoretical framework.....	13
2.2.1 Agency Theory.....	14
2.2.2 Stakeholder theory	15
2.2.3 Liquidity preference Theory	16
2.3 Empirical literature	17
2.3.1 Capital Adequacy Regulation and Financial Performance.	17
2.3.2 Liquidity Management Regulation and Financial Performance.	19
2.3.3 Credit Risk Management Regulation and Financial Performance.....	22
2.4 Conceptual Framework.....	25
2.5 Operationalization of Conceptual Framework.....	26
2.6 Research Hypotheses.	27
CHAPTER THREE	28
RESEARCH DESIGN AND METHODOLOGY	28
3.1 Introduction.....	28
3.2 Research Design.....	28
3.3: Target Population.....	28
3.5 Data collection	29
3.6 Diagnostic Test	29
3.6.1 Husman Test.	29
3.6.2 Multicollinearity Test.....	30

3.6.3 Autocorrelation Test	30
3.6.4 Heteroskedasticity Test.....	31
3.7 Data Analysis.....	31
CHAPTER FOUR.....	33
4.1 Introduction.....	33
4.2 Descriptive Statistics.....	33
4.3 Diagnostic Test	37
4.3.1 Multicollinearity Test.....	37
4.3.2 Autocorrelation Test	38
4.3.3 Heteroskedasticity Test.....	39
4.3.4 Hausman Test.....	39
4.4 Panel Data Regression Analysis Results.....	40
CHAPTER FIVE	43
CONCLUSION AND RECOMMEDATION	43
5.1 Introduction.....	43
5.2 Summary of Findings.....	43
5.2.1 Capital Adequacy Regulation and financial performance of banks.....	43
5.2.2 Credit risk management Regulation and financial performance of banks.....	43
5.2.3 Liquidity management Regulation and financial performance of banks	44
5.3 Conclusion	45
5.4 Recommendation	45

5.5 Limitations of the Study.....	45
5.6 Areas for Further Research	45
REFERENCES.....	Error! Bookmark not defined.
APPENDIX (i): List of Commercial Bank in Kenya.....	57
APPENDIX (ii): Commercial Banks listed at the NSE in Kenya	59
APPENDIX (iii): Panel Data	60

LIST OF TABLES

Table 2.1 Operationalization of Conceptual Framework	26
Table 4.1. Descriptive Statistics	33
Table 4.2. Multicollinearity Test	35
Table 4.3. Autocorrelation Test	35
Table 4.4. Heteroscedasticity Test	36
Table 4.5 Hausman Test	36
Table 4.9. Panel Data Regression Analysis Results	37

LIST OF FIGURES.

Figure 2.1 Conceptual Framework	26
Figure 4.1 Return on Equity	37
Figure 4.2 Capital Adequacy Regulation	37
Figure 4.3 Credity Risk Management	37
Figure 4.4 Liquidity Management	37

LIST OF ABBREVIATIONS

CBK:	Central Bank of Kenya
NSE:	Nairobi Securities Exchange
RBS:	Risk Based Supervision
KCB:	Kenya Commercial Bank
ROA:	Return on Assets
ROE:	Return on Equity
CMA:	Capital Market Authority
RBC:	Risk Based Capital
KBA:	Kenya Banks Association
NPLR:	Non Performing Loan Ratio
CAR:	Capital Adequacy Ratio
CAMELS:	Capital Adequacy, Asset Quality, Management, earnings, Liquidity and Sensitivity

DEFINATION OF TERMS

Nairobi Securities Exchange (NSE): is a principal trade in Kenya offering an automated platform for the listing and trading of multiple securities (NSE, 2015).

Capital Adequacy: is defined as the reflection of the inner strength of the organization (Bank) which would stand strong during the time of financial crisis (Shankar, 1997).

Liquidity Management: this is the description of an organization by the amount of cash or near cash assets an organization has, the more liquid asset, the higher the organizations liquidity (Berger & Bouwman 2008).

Credit Risk Management: this is the possibility of debtor defaulting in settling the pre-determined obligation on the agreed terms. Failure of the trading partner to repay debt leads to credit risk which affects the overall performance of the organization (Basel 1999)

Financial Performance: can be defined as how good is an organization (bank) performing towards achieving its goals (Rutagi 1997).

Commercial Banks: is defined as the financial institutions which offers services to general public such as accepting deposits and issuing loans to their customers (www.investopedia.com)

Bank Regulations: is a form of government commands that subjects banking sectors into certain requirement, restrictions and guidelines as formulated by their regulators (en.m.wikipedia.org).

Listed: Listed means that, a company (commercial bank) is recognized as public- owned company where people can buy or sell their shares of the company (NSE, 2015).

ABSTRACT

Bank regulations are of a growing concern in banking sectors due to rapid changes in business environment. The main aim of this research was to test the effect of Central bank of Kenya regulations on the financial performance of commercial banks listed at the Nairobi Securities Exchange (NSE). The research problem was that, despite review of bank regulations in 2013 by Central Bank of Kenya for the performance improvement, some bank such as Chase bank, Imperial Bank and CFC Stanbic bank encountered financial problem in the year 2015 and 2016 were in the same period National Bank surprised its investors by registering a loss of 1.2 billion in the year 2015 which was almost the same as the profit of 1.3 billion they made in the year 2014. On the other hand, other banks such as KCB, Co-operative bank of Kenya and NIC bank had shown positive performance since the review of regulation by CBK in the year 2013. STATA 9 software was used to analyse secondary data which was collected from the eleven (11) listed commercial banks in Kenya for a period between 2012-2016. In descriptive statistics mean and median were very close indicating that, data does not suffer from any outlier problem. Data was analysed using descriptive statistics and panel data regression analysis. The findings of the study indicated that, liquidity management regulation had insignificant positive relationship with the performance of the listed commercial banks in Kenya while credit risk management regulation had an insignificant negative relationship. Capital adequacy regulations had significant negative relationship with banks performance for studied period. The results for the study revealed that, there is need for CBK to enhance their commercial banks regulations in Kenya for better performance. Holistic and integrated regulatory policy approach should be adopted to strengthen market regulations in order to ensure the achievement Kenyan vision 2030 of Kenya being the financial centre in Eastern and Southern Africa.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Regulations are set of commands which every individual or an organization has to adhere with, failure to that, negative consequence will follow while guidelines are practices which have been proposed as the best in yielding high returns leading to improvement in future firm's performance (Doyle, 2005). Bank regulations is not something new in financial institution, according to (Barth et al., 2003), Bank regulations can be defined as a form of government or a state commands that subjects banking sectors into certain requirements, restrictions and guidelines as formulated by their Regulators such as Central Bank in order to ensure market transparency between banking industry and individuals or between banking institution and other corporation with whom they conduct business with. Banks' regulators keeps on revising Banks' regulations and guidelines in order to respond effective to the adverse changes in business environment, which if not properly dealt with, it may lead to financial problems (Richard, 2001).

Banking institutions in Kenya is governed by two Acts; Banking Act and Central Bank of Kenya Act. According to Sonal, Anjarwalla and Khanna (2013), banking institution in Kenya is governed under the Banking Act (Chapter 488, Laws of Kenya) and by Central Bank of Kenya Act (Chapter 491, Laws of Kenya. CBK Act.). Central Bank of Kenya (CBK) is the main financial institutions regulator in Kenya which came into operation since 1966 through the Act of Parliament, to carry out its functions free from any interference of the individuals, group of persons or politics. It is an independent body in its mandate (CBK, 2012).

Commercial banks is one of the major financial intermediary in financial market which acts as middleman between two parties in a financial transaction such as transferring funds from the parties with excess capital (lenders) to parties with less capital (borrowers). In financial market, there is a very rare case of funds flowing directly from the provider to end users without passing through the financial intermediary, so great banks regulations has to be in place for the protection of both parties (Cornett & Saunders, 1999). According to the study conducted by Fernandez and Gonzalez (2005) on how accounting and auditing systems can counteract risk-shifting of safety nets in banking, banks tries as much as they could to contain the risks exposed to which is only attainable through great banks regulations. The above was in contrary with Barth et al. (2001) who associated great banks regulations with high chances of inefficiency operation which may lead to banking crisis on his study of whether bank regulations and ownership affect performance and stability of the bank.

There are three (3) major financial institution in every country around the world which are; Central Bank, National Treasury and Commercial Banks. There exist a mutual relationship between those three as follows; central bank is the head of the finance system by having authority to create money as the main responsibility. National treasury on other hand manages all the government's money which has been created by the central bank through revenue collection and paying out government's obligations via commercial bank or central bank accounts. All commercial banks must deposit a certain percentage of their total deposits with Central Bank in order to control the money supply and also to be used for cheque clearing purposes between banks (Pessoa & Williams (2012).

Basel Committee is a global body responsible in setting standards for the prudential regulations for the banking institutions. It ensures effective and efficiency in both regulation and supervision practices for worldwide banks in order to achieve its main objective which is

to enhance financial stability in banks. According to Muiruri (2015), Kenya being not a member of Basel Committee, it does not necessarily mean Kenya does not require their regulation and supervision, Central Bank of Kenya picks some Basel committee standard and implements them. Central bank of Kenya ensures all licensed financial institution comply with rule and regulations governing them which are based on the international standards of Basel Committee (Richard, Devinney, Yip, & Johnson, 2009)

Banking industry in Kenya has been rapidly growing over the years due to innovation of services like; mobile and agency banking where customers are able to transact any time they want using their mobile phones without queuing long queues in the banking halls (Oloo 2011). According to KDIC (2015) annual report, banking industry in Kenya registered performance improvement in the financial year ended June 2015, where the Assets increased from Ksh 3.0 trillion in 2014 to Ksh 3.6 trillion in 2015. Also loans and advances increased from Ksh 1.8 trillion in 2014 to Ksh 2.2 trillion in 2015. Kenyan, new constitution has also played a role in expansion of banking sectors through delegation of powers from National Government to County level (devolution). This is because every county in Kenya receives funds from the national government and many County payments are done through banks account such as payment of employees, financing projects, payment of suppliers among others (Finch & Annette 2015). According to the report released by Cytonn, (2015), sheet aggregate for banks grew by 1.4% from 3.6 trillion shillings in June 2015 to 3.7 trillion shillings in September 2015.

1.1.1 Central Bank of Kenya Revised Regulations.

In Kenya, Banks are licensed and regulated by central bank which oversees them in order to ensure they comply with regulations in their operation. Guideline and regulations under Central bank of Kenya Act (Chapter 491, Laws of Kenya) were revised in 2012 and became

effective on January, 2013. Every financial institution is expected to comply with those regulations as summarized by CBK circular into; mandated to foster liquidity, solvency and proper financial systems functioning. The main objectives of central bank regulation and guidelines is to minimize the level of risk which creditors are exposed to, to safeguard commercial banks from bad activities such as (money laundering, financing terrorist groups among others), protect banking confidentiality as well as to reduce systemic risk. There are four main regulations and guidelines among others governing banking sectors according to Central Bank of Kenya: Prudential Guidelines, Risk Management Guidelines, Non-Operating Holding Companies Guideline and Guideline on Incidental Business Activities. Prudential guidelines and Risk Management were reviewed by CBK in the year 2012 and came in to operation from January, 2013 (CBK, 2013).

Reviewed prudential guidelines: address the following issues according to Sonal et al. (2013); licensing requirements, corporate governance, capital adequacy requirements, liquidity management, stress testing, foreign exchange exposure limits, prohibited business, anti-money laundering, consumer protection, enforcement of banking laws and regulations, agent banking, and representative offices. Proper implementation of those guidelines is expected to result into smooth banking operation in the country thus contributing a lot to the achievement of vision 2030 goals of Kenya being financial Centre in Eastern and Southern Africa (Kenya vision 2030). Major objectives of financial sector reforms are to ensure stability of the banking systems as well as to control deposits, lending and interest rates (CBK, 2013).

Risk management: differs from one organization to the other because of the size of organization and organizational structure. The new Risk Management guidelines seeks to address the following; market risk, credit risk, liquidity risk, operational risk, ICT risk,

reputational risk and compliance risk. Central Bank of Kenya provides licensed financial institutions with Risk Based Supervision (RBS), which is an approach used by CBK to ensure well and organized supervision over licensed institutions. Under RBS, central bank assesses the risk exposed to each firm and suggests effective procedures to identify, measure, monitor and control of the risk (CBK, 2013).

1.1.2 Financial Performance of Commercial Banks.

Financial performance can be defined as how good is the organization performing at the end of financial year results (Rutagi, 1997). Information about banks performance is not only useful to the shareholders and management but also to other stakeholders such as suppliers, customers, creditor among others as they need to make decision on whether to continue investing on that organization or look for alternative (Casu et al, 2006).

Good financial performance is associated with increase in profitability and growth. In banking sectors and other financial institutions, there are two important objectives; profit maximization and wealth maximization. In profit maximization, management uses all means available to them which can lead to increase in firms profitability, while in wealth maximization management considers only decision which will increase the value of the shareholders.

Performance measurement for commercial banks can be done by calculating ratios such as Return on Assets (ROA) and Return on Equity (ROE) as suggested by Murthy and Sree, (2003) and Alexandru et al., (2008). ROA indicates total profit from the bank assets after deduction of all expenses and taxes. Higher ROA ratio indicates better performance and effective use of the assets while low ratio shows ineffective use of assets (Ross, Westerfield, Jaffe and 2005).

This study used ROE as performance measurement since ROE is more important compared to other ratio, because it shows the rate of return to the shareholders who are the owners of the business. ROE ratio is a good measure of performance efficiency because it discloses how much an organization has generated from the amount of money invested by the shareholders. The higher the ROE the better the performance and vice versa, Hassan (1999) and Samad (1999).

1.1.3 Listed Commercial Banks in Kenya.

Listed means that, a company (commercial bank) is recognized as public- owned company where people can buy or sell their shares of the company. Nairobi Securities Exchange (NSE) is a principal trade in Kenya offering an automated platform for the listing and trading of multiple securities. NSE started in early 1930s as Nairobi stock Exchange (NSE), where the business was taking place on gentlemen's agreement without well known trading building. It was then registered in 1950s under the societies Act (1954). The business continued to improve until the year 2011 when the name was changed to Nairobi Securities Exchange limited which operates under the Capital Market Act, chapter 485A laws of Kenya. The name was changed to reflect 2010-2014 strategic plans to offer full service securities exchange which supports trading, debt, derivatives, clearing and settlement of equities and other instruments (NSE, 2015).

At the end of financial year 2015, Kenya had a total of 44 licensed commercial banks, where Eleven (11) of them are Listed at the NSE, (KDIC, 2015). Those listed commercial banks are; Housing Finance Company of Kenya ltd, Standard Chartered Bank of Kenya ltd, NIC Bank ltd, National Bank of Kenya ltd, Kenya Commercial Bank ltd, I & M Bank ltd, Diamond Trust Bank of Kenya ltd, Co-operative Bank of Kenya ltd, Barclays Bank Kenya ltd, CFC Stanbic Bank ltd and Equity Bank ltd (NSE, 2015 annual report).

The shareholding information of all commercial banks in Kenya are as follows, according to CBK, (2013); Foreign owned banks are Bank of India, Citibank N.A. Kenya, Habib Bank A.G. Zurich and Habib Bank Ltd. Foreign owned but locally incorporated banks (partly owned by locals) are; Bank of Baroda ltd, Barclays Bank of Kenya ltd, Diamond Trust Bank Kenya ltd, Sidian Bank ltd, Standard Chartered Bank ltd, Ecobank ltd, Gulf Africa Bank ltd and First Community Bank. Foreign owned but locally incorporated banks are; Bank of Africa ltd and UBA Kenya Bank ltd. Commercial Banks with Government participation are; Consolidated Bank of Kenya ltd, Development Bank of Kenya ltd, Housing Finance ltd, Kenya Commercial Bank ltd, National Bank of Kenya ltd and CFC Stanbic Bank ltd. Locally owned commercial banks are; African Banking Corporation ltd, Jamii Bora Bank ltd, Commercial Bank of Africa ltd, Co-operative Bank of Kenya, Credit Bank of Kenya ltd, Charterhouse Bank ltd, Chase Bank ltd, Spire Bank ltd, Equity Bank ltd, Family Bank ltd, Fidelity Commercial Bank ltd, Fina Bank ltd, Giro Commercial Bank ltd, Guardian Bank ltd, Imperial Bank ltd, Investment & mortgages Bank ltd, Middle East Bank ltd, NIC Bank ltd, Oriental Commercial Bank ltd, Paramount Universal Bank ltd, Prime Bank ltd, Trans-national Bank ltd and Victoria Commercial Bank ltd. In the year 2016 Equatorial commercial bank was rebranded to Spire Bank ltd. Dubai Bank is a privately held bank whose owners are not publicly known.

1.2 Statement of the Problem

Globally, some different studies have been done in this area of banking regulations and its effect on financial performance. Those studies include; (Sheng 1991), study on relationship between performance and regulation of banks in Washington which found out that, regulations has positive effect on performance. This result was supported by Howels and Bain (2004) study. However, Barth et al (2001) stated that, increase in financial restriction leads to increase in financial crisis. Vianney (2013) studied on the relationship between regulations and financial performance of Rwanda commercial Banks and concluded that, capital adequacy ratio, liquidity ratio and management efficiency ratio has no evidence to explain financial performance of commercial banks in Rwanda.

Ochieng (2014) did a study on the effect of Central Bank of Kenya prudential guidelines and regulations on financial performance of commercial banks in Kenya using six (6) variables ; Gross Domestic product, Average Annual Inflation rate, Management efficiency, corporate governance , capital requirement and liquidity management. He found a strong and positive relationship between CBK prudential Guidelines and banks performance. Waweru (2007) studied on financial regulatory structure reform in Kenya: The perception of financial intermediaries in Kenya regarding the case for a single financial regulator, and he found that, Kenya's financial regulatory structure is not adequate to meet challenges facing banks in Kenya.

After the review of CBK regulation on commercial banks in the year 2013, we have witnessed three large commercial banks which are; Dubai bank, Imperial bank and Chase bank being placed in liquidation (Dubai Bank) and under receivership (imperial and Chase Bank) by CBK In the year 2015 and 2016 because of capital deficiencies, fraud and unsafe financial condition respectively. In the same period, National Bank of Kenya records a loss of

Sh.1.2 billion in the end of financial year 2015 which was almost equivalent the profit they made in the end of financial year 2014 of Sh.1.3 billion (National Bank, 2016). CFC Stanbic bank also had a decline of profit after tax to Ksh.4.697 billion in 2015 from Ksh.5.478 billion in 2014 (CFC annual report, 2015). This clearly shown that, some banks in Kenya are facing financial performance problem despite the review of CBK regulations in the year 2013 which was aimed at addressing the issue of performance improvement and financial stability of commercial banks in Kenya (CBK, 2013). However, Other Commercial banks such as; KCB, Equity bank and Co-operative Bank of Kenya have shown positive performance since review of regulation by CBK (CBK, annual report, 2015). Thus, in order to deepen understanding why some banks are showing positive performance while other negative, this study aimed at exploring the efficacy of CBK regulations on bank performance.

There is an evidence of conflict in establishment of the relationship between bank regulations and financial performance from the previous study where different authors such as; (Sheng 1991), (Howels and Bain 2004) and Ochieng (2014) found positive relationship between banks and regulations while Vianney (2013) , Barth et al (2001) and Waweru (2007) found negative relationship. This study carried out thorough analyze on the effect of CBK regulation on financial performance of commercial banks listed in NSE in order to resolve the existing conflict hence the research gap to address.

1.3 Objectives of the study

1.3.1 General Objective

The general objective was to establish the effect of Central Bank of Kenya regulations on the financial performance of Listed commercial banks in Kenya.

1.3.2 Specific Objectives

- i. To examine the effect of capital adequacy regulation on the financial performance of listed commercial banks in Kenya
- ii. To determine the effect of liquidity Management regulation on the financial performance of listed commercial banks in Kenya.
- iii. To find out the effect of credit risk management regulation on the financial performance of listed commercial banks in Kenya.

1.4 Research questions

- i. How does capital adequacy regulation affect the financial performance of listed commercial banks in Kenya?
- ii. What is the effect of liquidity management regulation on the financial performance of listed commercial banks in Kenya?
- iii. What is the effect of credit risk management regulation on the financial performance of listed commercial banks in Kenya?

1.5 Significance of the Study

Findings of this study contributes more knowledge expansion concerning banks regulations and performance of commercial banks in Kenya, after investigating the following three regulations, liquidity management, capital adequacy and credit risk management. The following among others will benefit more from the study:

Information is provided not only to the commercial banks management team only but also to financial institutions in general which offers almost similar services as banks. Management will use that information to know how regulations affects the operations of the organization hence be able to identify the areas which are doing well or poorly then take appropriate action. Management of other financial institutions will find this research important hence use it as benchmark in performance improvement.

Central Bank of Kenya being a financial institution supervisor will be able to know how commercial banks are performing after the implementation of the new regulations and guidelines. That is, are they improving growth and the stability of the banks which is the main objective of formulation of those regulations or not. Other regulatory agency such as Capital Markets Authority (CMA) and Kenya Banker Association (KBA) will also asses the performance after new regulations implementation.

A lot of government attention in banking sector is on the vision 2030 achievement of Kenya being Centre of Finance in eastern and southern Africa. So, Government of Kenya will benefit more from this study as it will know if the commercial banks in Kenya are performing towards that end.

Investors will also use this information to know how is there investments in banks being protected by the new regulations issued by the CBK, like in the case of capital requirement

which can compensate them if the bank encounters performance problems. From that information, investors will be able to make right decision on whether to continue investing or leave that investment portfolio to another one.

This study will help academicians who want to know more about the effect of bank regulations on the financial performance. Also, the information contained in this study will be used by other researches who want to add more knowledge in this area.

1.6 Scope of the Study.

From the new regulations issued by CBK in the year 2013 this study will concentrate on three (3) new regulation ; liquidity management regulation, capital adequacy regulation and credit risk management regulation in order to investigate whether they result to strong or weak relationship with performance of listed commercial banks in Kenya. These three (3) regulations fit well in CAMELS framework as it is used by CBK for performance evaluation. CAMELS stand for Capital adequacy, Asset Quality, Management, Earnings, Liquidity and Sensitivity (Githinji, 2010). This study will cover duration between 2012-2016 which is equivalent to 5 years in order to determine the effect of reviewed CBK regulations on financial performance of listed commercial banks in Kenya.

1.7 Basic Assumptions

The information used in this study was obtained from published journals, newspapers, textbooks, and from the internet. I found this information necessary and relevant to my area of study since it has undergone through several verification thus recommended to contain original information.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction

This chapter reviews past studies related to the study problem by examining theories that have been advanced in relation to the study problem and the empirical literatures related to study variables (capital adequacy, liquidity management and credit risk management). It is in this chapter which develops the conceptual framework and operationalization of conceptual framework that guides the approach of the research by showing both dependent and independent variables that complements the model of study. Research hypothesis is included at the end of this chapter.

2.2: Theoretical framework

The concept of bank regulations has been in existence for so many years all over the world. However, it was not developed as it is today due to some factors like increase in competition from other financial institutions, changes in customer demands among others. Bank regulations are of growing importance in financial institutions, particularly in management of bank's operation. There are number of theories that have been developed in describing the effect of bank regulations on financial performance of commercial banks, but this paper will only discuss the following three theories which are; Agency theory, stakeholder theory and liquidity theory.

2.2.1 Agency Theory

In commercial banks there is management team (managers) and the owners (shareholders) of the business. Owners' delegates power to the management whom they expect them to work towards achieving their main interest which is wealth maximization. Clarkson (1995) states that, wealthy creation for the owners of the organization is the main purpose for the business. Management team has more information concerning firm's performance as compared to their owners. Commercial banks management is responsible in managing all the banks operation thus having more information concerning the operation of the bank as compared to their shareholders. According to Roe (1994), Shareholders lack enough information on how to run the business as well as deep understanding of their business leading to having management team in their business. According to Howels and Bain (2004), bank regulations exist to manage asymmetric information which may be exposing the shareholders to certain risk not aware of but managers have all the information. Banks work with money which is very tempting to fraud and other illegal practices such as financing terrorism groups so, separation of ownership and control results to different behaviors in the management team such as agency problem where management leaves the interest of shareholders and start working towards achieving their own interest. Agency problem has been a problem in all financial institutions where if not controlled, it results to negative impact on the overall performance of the firm. Blair and Tony (1994), management has to be well monitored and institutional arrangement to be in place in order to make sure there is not abuse of the power by managers.

In large organization where there is dispersed ownership like in the case of commercial banks, shareholders has to incur cost in dealing with agency problem which is known as agency cost. There are two main costs which can be used to minimize shareholders-management conflict that is, monitoring cost and incentive cost. Monitoring cost is associated

with things like ensuring effective internal audit, external audit, internal controls, good supervision, and CCTV among others. Incentive cost is the cost incurred by shareholders through increase of employees' wealth by paying high remuneration and other benefits such as; shares appreciation rights, commissions, spouse allowances or children education. The problem with this agency cost is that, everyone wants to be rewarded, so managers may be tempted to give false information in order to get incentives even if that is not the real situation of the organization (Commercial bank). Shareholders can directly intervene the management with threats of firing or threat of takeover in orders to control agency problem (Sanda et al 2005).

2.2.2 Stakeholder theory

In operation of any business, shareholders and management are not only the important ones in the running of business. Miles (2012), Stakeholders theory considers wider group which affects the organizational objectives and policies as compared to agency theory which consider only two groups, shareholders and management. This theory recognizes two types of stakeholders, internal stakeholders and external stakeholders. Internal stakeholders comprises of employees, managers and owners while external stakeholders comprises of suppliers, government, creditors, customers, community and environment from which the business is operating in. Other stakeholders involvement in organizational decision making can help to reduce conflict hence smooth business operation (Turnbull, 1994). There are three important approaches in stakeholders' theory, descriptive, instrumental and normative approach. Descriptive approach is used to show characteristics and behavior on how firm is managed. Instrumental approach shows connection that exists between stakeholder's management group and the organizational goals. Normative approach identifies morals for good organizational operation and management (Donaldson and Preston (1995).

Banks regulation recognizes all the above stakeholders as they play an important role in banks performance. McDonald and Puxty (1979) states, company's no longer concentrates with shareholders only, this is because every business operates within a society which it has to be recognized. The issue of social and environment accounting has been for the last few years gaining an important in the modern business world. Starik and Rands (1995) suggested environment as key important stakeholder in the running of a business. Information about business operating environment is becoming important to both the business and information users as it provides information which helps to discharge accountability to the society. It also helps in demonstrating responsiveness of the firm to certain ethical issues in that community. some business which supports the issue of community environment are becoming 'greener' in their business operation (Gray, Collison and Bebbington 1997).

2.2.3 Liquidity preference Theory

Liquidity preference theory simply refers to desire of having cash in your pockets. Liquidity is any form of an asset which can be easily converted in to cash, money is considered as the most liquid in all assets. Commercial banks deal with mostly liquid assets which can be demanded anytime by the investors. Interest rate is a reward for not holding liquid asset for specified period which it is calculated by the demand and supply of money. According to Keynes, demand for money is categorized in three motives; firstly, transaction motive which is desire to have cash for basic transaction such as for transport, wages or raw material payment. Secondly, precautionary motive which is holding cash to cater for any unexpected expenses if happens such as; accident or illness. Thirdly, speculative motive which is to hold cash and anticipate future changes in order to exercise your rights in stock buying. If stock price is expected to rise then interest rate is expected to fall so, investors will buy and wait

until price rises. Supply of money of money is the total amount of money circulating in a country (Keynes 1936).

Different investors have different taste in liquidity where some may prefer illiquid assets. The more illiquid an asset is the more the interest rate. Liquidity in banks can be affected by several factors such as political instability in a country, like in the case of what happened in Kenya in 2007 and 2008 post-election violence, every investor from the affected area rushed to the bank with the desire to have his cash in the pocket. Argument by Keynes was criticized by other authors such as Rothbard (1962), argued that, interest rate is influenced by other factors not liquidity preference only as Keynes suggested. Keynesian theory of interest considers short-run interest with no explanation on long run interest, He added.

2.3 Empirical literature

This section reviews empirical literature on effect of bank regulations (capital adequacy, liquidity management and credit risk management) on financial performance of commercial banks.

2.3.1 Capital Adequacy Regulation and Financial Performance.

Bridges, Gregory and Spaltro (2014) did a study on capital adequacy on banks' lending, a case study of Bank of England. They found that, any change in capital adequacy results to change in both capital and lending that is, increase in capital requirement causes an increase in banks capital ratios and reduction on loan growth. The study also found that, after change in capital requirement loan growth mostly returns to normal within 3 years. He concluded that, banks response to change in capital adequacy differs depending business cycle, bank size and direction of the change in capital requirement. The above argument was supported by other authors such as (Francis and Osborne, 2009) who did research on bank regulation,

capital and credit supply: measuring the impact of prudential standards in UK. They suggested that, the higher the capital requirement the lower the bank's optimal loan growth and vice versa, were that effect depends on the level of excess capitalization.

Alkadamani (2015) investigated on capital adequacy, Bank behavior and crisis: Evidence from emergent economies. His study analyzed data from 46 commercial banks between 2004 and 2014 from four Middle East countries. The study reported that, there is existence of strong relationship on the effect of regulations on level of capital. He concluded that, banks which are closer to the minimum regulatory capital adequacy improves there capital adequacy by capital increase while reducing risk taking activities. Bank should keep enough capital adequacy because during economic crisis banks tends to increase their risk taking activities, He added.

(Olalekan 2013) conducted a study on capital adequacy and banks' profitability: empirical evidence from Nigeria. The purpose of the study was to assess the effect of capital adequacy of both domestic and foreign banks in Nigeria and their profitability. The findings revealed that, capital adequacy relates positively to profitability of banks in Nigeria because it is a confidence booster to the depositors, public and regulatory authority in Nigeria. He concluded by suggesting capital adequacy as the most important factor in determining profit ability for banks in Nigeria. In this issue of strong relationship between capital adequacy and bank's profitability, it was supported by the following other authors. (Sangmi and Nazir 2010) researched on financial performance of commercial banks in India and reported that, suggested that, capital adequacy ratio (CAR) has direct effect on the bank's profitability in India because they have managed their capital adequacy ratio well by keeping it above the minimum standard of 10% as it is fixed by RBI (Reserve Bank of India). Nzioki (2011). Investigated on impact of capital adequacy on financial performance of commercial banks

quoted in NSE. He found that, capital adequacy influences performance Kenyan bank positively. In his conclusion he suggested that, the greater the bank capital adequacy the lower the probability of financial distress and liquidity creation. (Aymen, 2013) who found that, in Tunisia capital play an important role in ensuring smooth banking operation as well as realization of investment thus making high profit.

In 1990s, United States experienced credit crunch which was followed by number of studies determine the cause. Berger and Udell (1995) investigated if risk-based capital adequacy implemented in 1980s was the main cause for the credit crunch. They found that, risk- based capital (RBC) contributed a lot to credit crunch because in early 1990s before occurrence of credit crunch, RBC ratios on lending did not show any consistent positive growth. However, The above issue on credit crunch was argued against by (Wagstar, 1999) who had different conclusion by stating that, credit crunch was caused by other several factors not only (RBC) like in case for countries such as; Germany, Japan and Canada.

From the above studies, there is an evidence of a weak relationship between capital adequacy and the financial performance of an institution since researchers such as Bridges, Gregory and Spaltro (2014) and (Francis and Osborne, 2009) found no relationship existence between the two.

2.3.2 Liquidity Management Regulation and Financial Performance.

Liquidity management can have different impact on financial performance according to different researchers. Vossen (2010) did his study on Bank liquidity management in New York. He reported that, liquidity risk exposes banks to financial difficulties which lead to depositor runs, fleeing of investors and tougher financing. Establishment of bank regulations helps banking institutions in New York to avoid this situation. He summarized his findings

by stating that, Banks in New York attempts to contain liquidity risk by ensuring balance between cash inflow and cash outflow as well as holding liquidity cushions for strategic Purpose.

Lamberg and Valming (2009) researched on impact of liquidity management on profitability: a study of adaptation of liquidity strategies in Sweden. The purpose of the study was to know if any change in liquidity strategies is related to profitability which can be measured by Return on Assets (ROA). They found that, firms which had tightened there liquidity management strategies had good financial benefits of their commitment. This shows that, there is an evidence of strong relationship between liquidity management and firm's performance. They concluded there study by encouraging companies to ensure good focus on liquidity management in order to achieve good financial performance. These findings were supported by other researchers such as (Dang 2011) who did a study on CAMEL rating system in banking supervision and concluded that, there is strong relationship between adequate liquidity level with banks' performance in terms of profitability. (Demirgunes, 2016) did on effect of liquidity on financial performance for Turkish retail industry and found existence of strong relationship between liquidity and financial performance for Turkish retail industry. Deloof (2003) concludes that, liquidity enables firm to achieve short term goals without any additional cost, thus good performance. However, the above findings were opposite to the arguments of other researchers. Adam and Buckle (2003) found that, the higher the firms liquidity the higher the chances of managers acting towards the direction which will achieve their own desired goal thus leading to decline in firm's profitability. (Said and Tumin 2011) conducted a study on Performance and financial ratios of commercial banks in Malaysia and China. They concluded by stating that, no relationship between banks performance with the level of bank liquidity because high bank liquidity exposes bank to theft.

Dimitrios (2009) studied on Banks and Liquidity to determine the effect of decline on mortgage interest rate by European Central Bank. He found that, customers who had already applied for mortgage before decline of interest rates were not happy as they will continue to repay using old interest rates. New customers were satisfied with the move of European central bank to cut down the rates. He also reported that, banks needs new customers in order to improve in its capital and increase liquid assets.

Faris (2014) researched on the efficiency of liquidity management in two Islamic banks; Islamic International Arab Bank and Jordan Islamic Bank and found that, the issue of liquidity management efficiency is not as it is supposed to be in those two Islamic banks thus the reason for not well financially performing. Also the results indicated liquidity problem in long term. He concluded that, there is risky of equity capital and reserves because Return on Asset (ROA) was not efficient during the period of the study.

Ibe (2013) conducted a study to examine the impact of liquidity, management on the profitability of banks in Nigeria. The study concentrated on three banks in Nigeria and found crucial problem with Nigerian banks where the selected variables performed poorly in terms of profitability. This revealed that, banks in Nigeria have poor liquidity management. He concluded by stating that, each bank in Nigeria should determine optimal liquidity position which will enable achievement of good financial performance.

Molefe and Muzindutsi (2015) did a study on effect of capital and liquidity management on profitability of major South African Banks. The study covered five leading banks in South Africa for a period between 2004 to 2014. The study showed capital adequacy is the most effective tool for soundness of financial institutions in South Africa. There was weak relationship between liquidity and profitability for those five leading banks in South Africa.

They conclude that, South Africa banks should revise the liquidity management guideline to determine optimal liquidity level in order to improve financial performance.

There is a negative relationship between liquidity management regulation and the financial performance as it was supported some author from the above studies reviewed. According to Molefe and Muzindutsi (2015) there was weak relationship between liquidity and profitability for those five leading banks in South Africa. (Said and Tumin 2011) no relationship between banks performance with the level of bank liquidity because high bank liquidity exposes bank to theft.

2.3.3 Credit Risk Management Regulation and Financial Performance.

Gizaw, Kebede and Selvaraj (2015) carried out a study on impact of credit risk on profitability performance of commercial banks in Ethiopia. The study used secondary data collected from 8 samples commercial banks which has been in existence for a period between 2003-2004 (12 years). The results of the study revealed that, credit risk management in Ethiopian banks has been improving during the study period as it was evidenced by decline in the ratio of non-performing loans. This study was concluded that, there is significant positive relationship between credit risk management and banks profitability in Ethiopia hence encouraging managers to employ modern credit risk management techniques for better performance improvement.

Alshatti (2015) conducted a study on effect of credit risk management on Jordanian commercial banks performance. The study covered a period between (2005-2013) for sample of thirteen Jordanian commercial banks. He found that, non -performing loan ratio which is a credit risk management indicator has positive effect on banks profitability. Also results revealed that, capital adequacy ratio, credit facilities and leverage ratio has no effect on

Jordanian commercial banks. He concluded that, Banks should conduct serious information evaluation before approving loans to the customers in order to have effective and sound credit risk management system.

Jonathan (2012) researched on credit risk management in banking industry: Case study for Atwiman Kwanwoma Rural Bank. He sampled 600 bank customers who had borrowed loan, where 330 were men and 270 were female. The study revealed that, men are more defaulters than women where self-employed people have high number of loan defaulters than those who receives salary.

Manzura and Juanjuan (2009) examined the effect of credit risk management and profitability in commercial banks in Sweden. Reported that, high capital adequacy has a positive impact on credit risk management and banks' profitability in Sweden. The study concentrated on four commercial banks in Sweden. The results revealed that, out of the two credit risk management indicators used in the study, non- performing loan ratio (NPLR) has more significant effect than capital adequacy ratio (CAR) on profitability for all four sampled banks in Sweden. They used Basel II application which strengthened the negative effect of NPLR on ROE. The conclusion of this study suggested that, the higher the capital adequacy ratio the higher the bank's profitability. (Zou and Fan 2014) did same study to that of (Manzura and Juanjuan 2009) but in Europe commercial banks and found a positive relationship between credit risk management and profitability of Europe commercial banks. The study concluded that, both NPLR revealed a significant effect on both ROE and ROA while CAR shown insignificant effect on both ROE and ROA.

Wang (2013) studied on credit risk management in Rural Commercial Banks in China. The study found that, Rural Commercial Banks (RCBs) in China need to gather enough information concerning the potential costumer in order to prevent credit risk exposure to the

bank. The gathered enough information will assist in assessing if any possibility of the loan borrower to default that loan and make wise decision. He concluded by stating that, for RCBs to maintain good credit risk management, it should much concentrate on business operating environment which may has unique risk before adopting any credit risk management strategy.

Fernandez and Gonzalez (2005) did study on banking supervision, regulation and efficiency from the European Union. The study found that, banks try as much as they could to control credit risk which is only attained through greater banks restrictions. However, this argument was contrary with (Barth et al. 2001) who in there study associates tight banks' regulatory with high chances of inefficiency operation leading to banking crisis. This view by (Barth et al. 2001) was supported by (pasiouras, Gaganis and Zopounidis 2006) after reporting that, the less banks restrictions are, the higher the credit rating and vice versa. Davenport (1913) stated that, credit is what bank gives as loan to the borrowers but not customers deposits where an interest is charged on borrower for using bank credit.

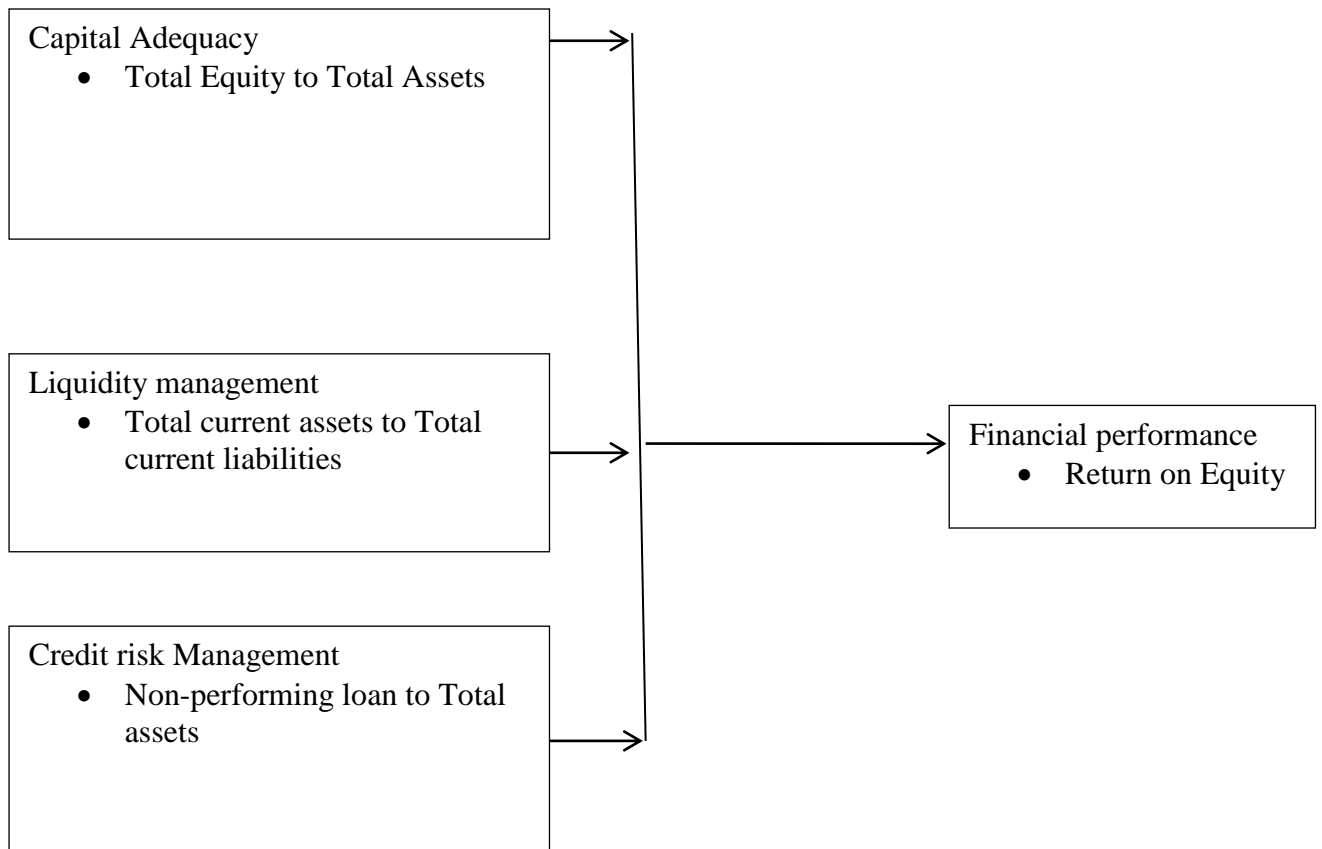
From the researches reviewed above, there is strong and positive relationship as almost all the authors in the above studies has associated credit risk management regulations with positive performance of the institution (commercial bank). Two studies by (Barth et al. 2001) and (pasiouras, Gaganis and Zopounidis 2006) went contrary to associate tight regulation on credit risk management with the negative performance.

2.4 Conceptual Framework

Below is a schematic diagram which shows the interrelationship among the key variables to be used in guiding the study as illustrated in Fig. 2.1.

Independent variables.

Dependent variable



2.5 Operationalization of Conceptual Framework

The table below shows how different variable indicators will be measured which assist in data analysis.

Table2.1 Operationalization of Variables

Variable Type	Variable	Measurement	Measurement Scale	Data Collection Method
Independent	Capital Adequacy	<ul style="list-style-type: none">• Total Equity to Total Assets	Ratio	Secondary Data
Independent	Liquidity Management	<ul style="list-style-type: none">• Total current assets to Total current liabilities	Ratio	Secondary Data
Independent	Credit Risk Management	<ul style="list-style-type: none">• Non-performing loan to Total assets	Ratio	Secondary Data
Dependent	Financial Performance	<ul style="list-style-type: none">• Return on Equity	Ratio	Secondary Data

2.6 Research Hypotheses.

The main objective of this study was to investigate the effect CBK regulations on the financial performance of the listed commercial banks in Kenya. In order to address the above main objective, it is divided into three specific objectives which are; to examine the effect of capital adequacy regulation on the financial performance of the listed commercial banks in Kenya, to determine the impact of liquidity management regulation on the financial performance of the listed commercial banks in Kenya and lastly to find out the effect of credit risk management regulation on the financial performance of commercial banks in Kenya.

The following three (3) null research hypotheses are formulated from the above research objectives.

H_1^0 : Capital Adequacy regulation has no significant effect on the financial performance of listed commercial banks in Kenya

H_2^0 : Liquidity management regulation has no significant effect on the financial performance of listed commercial banks in Kenya.

H_3^0 : Credit risk management regulation has no significant effect on the financial performance of listed commercial banks in Kenya.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes the research design and methodology which was used in testing relationship between banks' regulations and financial performance. Elements to be discussed include; research design, target population, sample size and sampling procedure, data collection, diagnostic test and data analysis.

3.2 Research Design

Descriptive research design was used to establish the relationship between study variable that is, if change in regulation requirement results to a change in financial performance of a bank. The reason for using descriptive research design is because it ensures depth investigation of certain behavior or complete description of the existing situation thus few errors in data collection (Burns and Grove, 2003).

3.3: Target Population.

The target population was Eleven (11) listed commercial banks at NSE because they are recognized as public- owned company (Bank) where people can buy or sell their shares of the company (NSE, 2015). Those banks are; Equity Bank ltd, Housing Finance Company of Kenya ltd, NIC Bank ltd, National Bank of Kenya ltd, Diamond Trust Bank of Kenya ltd, Co-operative Bank of Kenya ltd, CFC Stanbic Bank ltd, Barclays Bank Kenya ltd, Kenya Commercial Bank ltd, I & M Bank ltd and Standard Chartered Bank of Kenya ltd. They are also attached in appendix (i).

3.4 Sample Size and Sampling Procedure.

A census sampling method of eleven (11) commercial banks in Kenya was adopted in this study, where data was gathered from all the eleven listed commercial banks in at the Nairobi Securities Exchange (NSE).

3.5 Data collection

This study used secondary data for the only listed commercial banks in Nairobi Securities Exchange (NSE). According to (Kiecolt & Nathan 1985) secondary data is the use of information which is readily available from the previous study findings and can be accessed from different publications or sites. The use of Secondary data is faster and also cost effective since it uses someone's information to achieve present objective.

Data was obtained from bank's annual audited reports, Nairobi Securities Exchange websites as well as internet and website of the listed banks, for the period between 2012 and 2016 which is equivalent to 5 years. The reason for choosing 2012 to 2016 period is because, revised banks' regulations was formulated by Central Bank of Kenya in the year 2012 and became effective as from January 2013 (CBK, 2013). This study started in the year 2016.

3.6 Diagnostic Tests

3.6.1 Hausman Test

Two methods was used in developing panel data; fixed effect model which allows for heterogeneity or individuality among all samples to have own intercept value. Random effect model which allows all samples to have common mean value for the intercept. Hausman test was performed to test which model is suitable to accept between random effect model and fixed effect model. Null hypothesis will be random effect model is appropriate while

alternative hypothesis will be fixed effect is appropriate model. If the P. value is less the 5% I shall reject null hypothesis and accept alternative hypothesis (William, 2008). Fixed effect model was appropriate in this study because the probability was less than 5% hence the right model.

3.6.2 Multicollinearity test

This test was performed to detect multicollinearity problem where if not controlled it may results to unstable parameter estimator which makes it very difficult to assess and interpret the effect of independent variables (capital adequacy, liquidity management and credit risk management) on the dependent variable (financial performance). Variance inflation factor (VIF) will be used in STATA software to detect multicollinearity problem in the model from the study variables. Variables whose VIF values are greater than 10 it indicates the presence of multicollinearity problem which needs to be corrected. In many cases this problem arises as a result of using too many independent variables to measure the same dependent variable. If this problem exists then, it can be corrected by dropping the variable with high VIF in order to convert the other variables from non-significant to significant (William, 2008).

3.6.3 Autocorrelation test

In order a model to produce desirable results, it should not have serial correlation or autocorrelation. In panel data the above tested by use of Wooldridge method. If the probability value is greater than 5% it indicates absence of data correlation between residual of the estimated equations and the dependent variable. The model is suffering from serial correlation or autocorrelation is not desirable. (Durbin, 1970).

3.6.4 Heteroscedasticity Test

If errors in all the data observations has a constant variance it indicates the presence of homoscedasticity. On the other hand heteroscedasticity is referred as the absence of homoscedasticity. The main cause of heteroscedasticity in the model is the presence of omitted variables because the effect of omitted variable is not included in explanatory variable but may be absorbed by error term thus giving wrong results (Saastamoinen, A. 2015). Panel data was used in this study and likelihood-ratio test for heteroscedasticity was tested. Null hypothesis was no heteroscedasticity in data if the probability is greater than 0.05

3.7 Data Analysis.

This study used panel data which ensures enough data is available to the researcher because it contains both time series and cross-sectional dimensions thus, minimal biasness in parameter estimators (Baltagi, 2005). Data was collected for a period of five (5) years from eleven (11) listed commercial banks in Kenya at NSE, Totaling up to 55 samples which is sufficient for both time series and cross sectional dimension. Multiple regression was used to analyze data collected from the eleven (11) sample population which helps researcher to gain more knowledge on the relationship between several independent variables (predictor) and dependent variable (Garson, 2014), thus being a good method of data analysis in this study which has three (3) predictors (capital adequacy, liquidity management and credit risk management) and one dependent variable (financial performance).

Regression results was generated by use of STATA software which gives more detailed results. The main aim of regression analysis in this study is to summarize data thus, being able to explain the relationship between the study variables. After regression, results will be presented in form of; tables and charts for ease understanding. The following regression

equation was developed to explain the effect of CBK regulations requirements on financial performance of listed commercial banks in Kenya.

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \dots + \beta_n X_{it} + \varepsilon$$

The econometrics model was extracted from the above equation as follows:

$$Y_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 LM_{it} + \beta_3 CRM_{it} + \varepsilon_{it}$$

Y_{it} = ROE = Financial Performance

β_0 = level of financial performance in the absence of the bank

$\beta_1, \beta_2, \beta_3$ = Regression coefficients

CA_{it} = Capital Adequacy Regulation

LM_{it} = Liquidity Management Regulation

CRM_{it} = Credit risk management Regulation

ε_{it} = Error

i = Name of Bank (1...11)

t = Time (2012—2016)

Different methods will be used in determining the value of both independent variables and dependent variable as shown below.

ROE = Net Income to Shareholder's Equity

CA = CAR (capital adequacy ratio) = Total Equity to Total Assets

LM = Liquidity ratio = Total Current Assets to Total Current Liabilities

CRM = Asset Quality = Non-Performing loan to Total Assets.

CHAPTER FOUR

DATA ANALYSIS, ESTIMATIONS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter presents the results of the analysis and findings of the study with reference to the study objectives. In particular the study discusses descriptive statistics, the empirical model results and interpretations. The study used STATA 9 software to carry out the analysis.

4.2 Descriptive Statistics

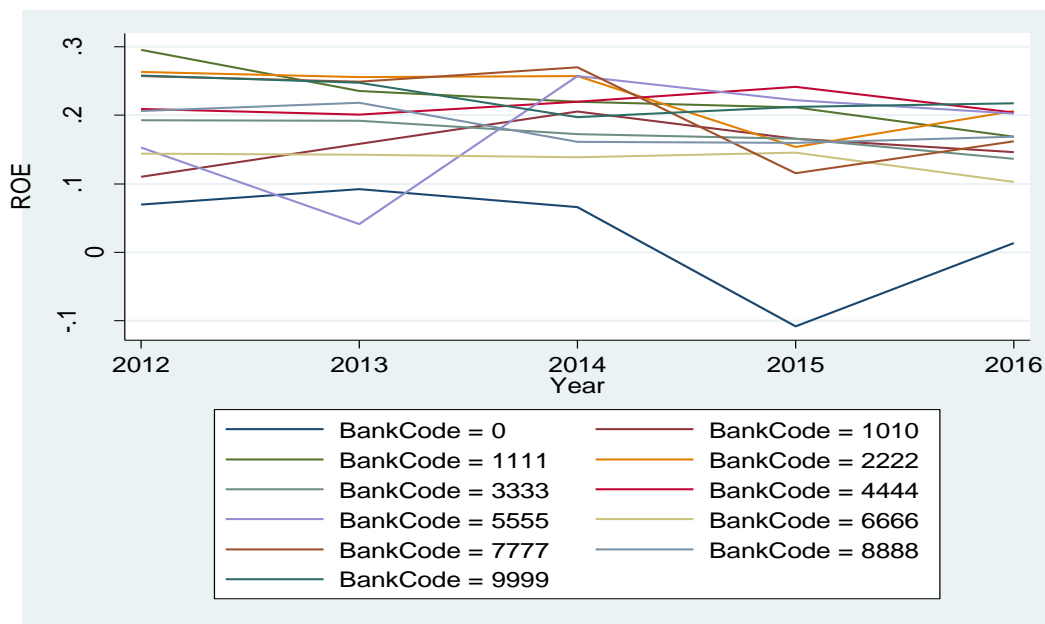
Table 4.1 Descriptive statistics

	ROE	CA	LM	CRM
Mean	0.1777236	0.2305	0.3764182	0.0348364
Median	0.19300	0.20470	0.35380	0.027500
Maximum	0.2954	0.9952	0.737	0.2325
Minimum	-0.1084	0.1187	0.2105	0.0029
Std. dev	0.0719574	0.149769	0.0973828	0.0340873
Skewness	-1.3876	4.432125	1.6915	3.7026
Kurtosis	6.209484	22.26853	6.311782	21.64881
Observation	55	55	55	55

From table above, the mean and median are very close and this implies that data does not suffer outlier problem. An outlier is an observation point that is distant from other observations. Naive interpretation of statistics derived from data sets that include outliers may be misleading. An outlier may be due to variability in the measurement or it may indicate experimental error; the latter are sometimes excluded from the dataset. It is also clear that the standard deviation values are small, which implies that data values of the variables

are also clustered around the mean hence the data set is normal. The standard deviation gives an idea of how close the entire set of data is to the average value. Data sets with a small standard deviation is tightly grouped and precise data. Data sets with large standard deviations have data spread out over a wide range of values.

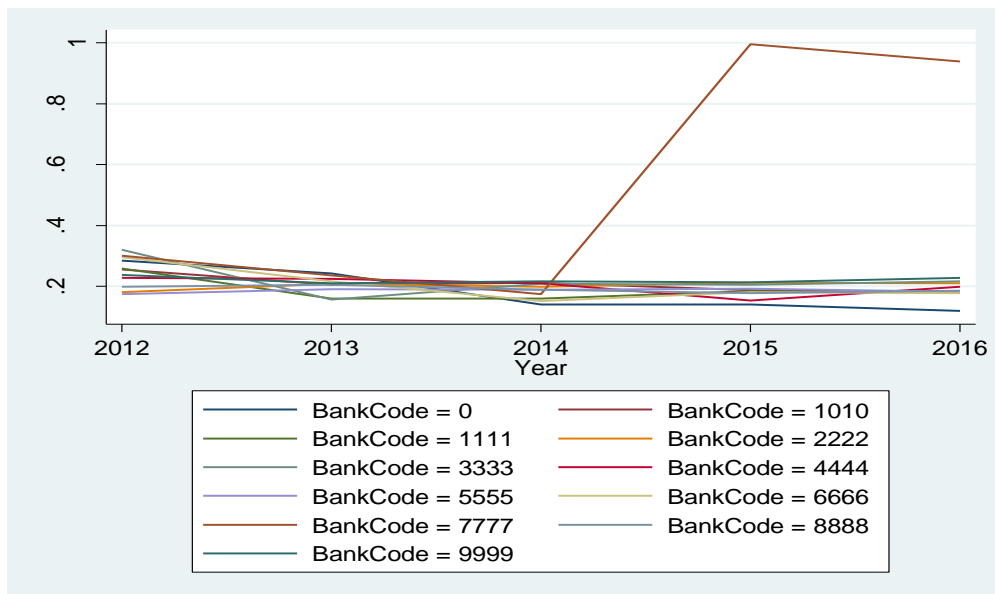
Figure 4.1 ROE



Source: Author

From the above descriptive statistics results on table 4.1, this study found that, the mean performance on ROE for the eleven listed commercial banks in Kenya at NSE stood at **17.7%** for the period studied of 5 years (2012-2016). Fluctuation of the banks performance in that study period was also witnessed by the standard deviation of 7.19%.

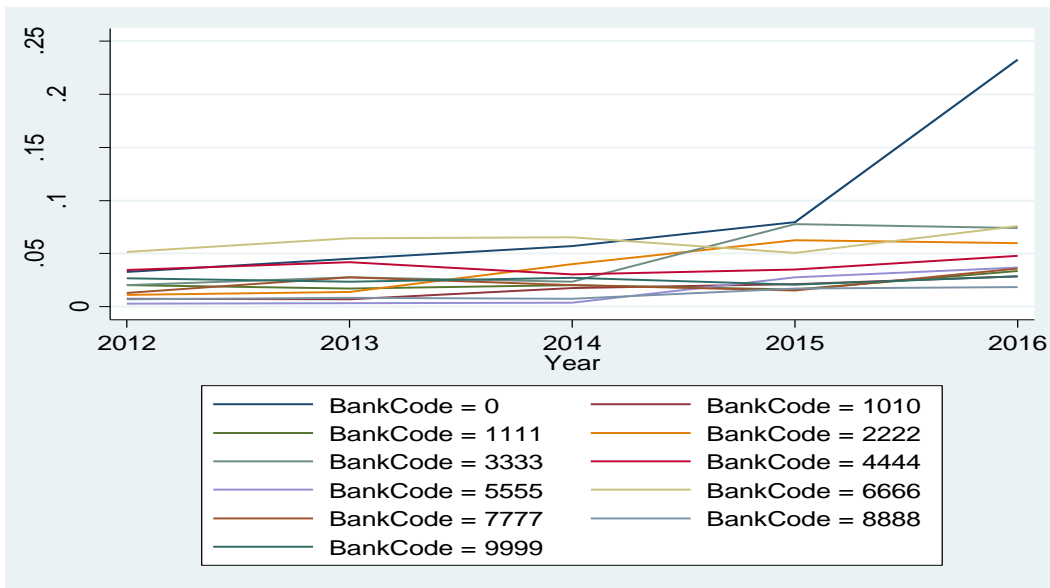
Figure 4.2 Capital Adequacy



Source: Author

The main aim of this study was to establish the effect of Central bank of Kenya regulations on the financial performance of the listed commercial banks using three independent variables; capital adequacy, liquidity management and credit risk management. From descriptive statistics table 4.1 revealed the following; the mean capital adequacy ratio for the studied period was at 23.05% with a fluctuation of 14.9%.

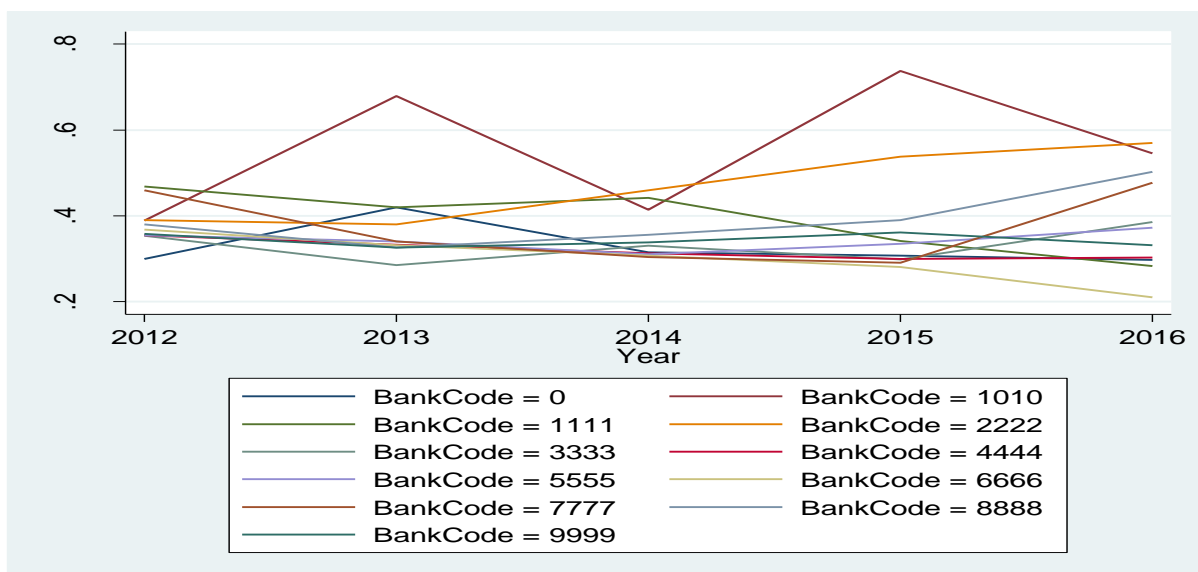
Figure 4.3 Credit Risk Management



Source: Author

Credit risk management had a mean of 3.4% which was the lowest of the three variables, the fluctuation stood at 3.4%.

Figure 4.4 Liquidity management



Source: Author

Liquidity management had the highest mean of the three independent variables which was registered at 37.6% with a standard deviation of 9.7%.

The main aim of this study was to establish the effect of Central bank of Kenya regulations on the financial performance of the listed commercial banks using three independent variables; capital adequacy, liquidity management and credit risk management. From descriptive statistics table 4.1 revealed the following; the mean capital adequacy ratio for the studied period was at 23.05% with a fluctuation of 14.9%. Liquidity management had the highest mean of the three independent variables which was registered at 37.6% with a standard deviation of 9.7%. Credit risk management had a mean of 3.4% which was the lowest of the three variables, the fluctuation stood at 3.4%.

The measure of skewness for most of the variables is close zero and this indicates that the distribution of the data set is normal.

4.3 Diagnostic Tests

4.3.1 Multicollinearity test

From the test, it is evident values are less than 10; hence we fail to reject the hypothesis of data to contain multicollinearity. The absence of multicollinearity gave the researcher an assurance that the coefficients of the independent variables were not adversely affected and the t- statistics computed were reliable.

Table 4.2 Multicollinearity Test

Collinearity Diagnostics					
Variable	VIF	SQRT VIF	Tolerance	R-	Squared
capitaladequacy	1.02	1.01	0.9823	0.0177	
CreditRiskManagement		1.06	1.03	0.9442	0.0558
liquiditymanagement		1.04	1.02	0.9594	0.0406
Mean VIF	1.04				
Eigenvalues & Cond Index					
	Eigenval	Cond Index			
1	3.2993	1.0000			
2	0.4785	2.6259			
3	0.1955	4.1077			
4	0.0267	11.1084			
Condition Number	11.1084				
Eigenvalues & Cond Index computed from scaled raw sscp (w/ intercept)					
Det(correlation matrix)	0.9426				

4.3.2 Autocorrelation test

Upon testing autocorrelation using wooldridge, a null hypothesis was accepted of no autocorrelation at first-order autocorrelation. This is because the probability (15%) is greater than 5%. Thus, indicating that no possible data correlation between residual of the estimated equations and the dependent variable.

Table 4.3 Autocorrelation test

```

. xtserial ROE capitaladequacy CreditRiskManagement liquiditymanagement

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
      F( 1,      10) =      2.394
      Prob > F =      0.1528

```

4.3.3 Heteroscedasticity Test

It is clear that, no heteroscedasticity in the data, so we accept null hypothesis of no heteroscedasticity in the data. This is evidenced by the likelihood test probability (1.0000) being greater than (0.05)

Table 4.4 Heteroscedasticity Test

```
. lrtest hetero . , df(10)

Likelihood-ratio test                LR chi2(10) =      0.00
(Assumption: . nested in hetero)    Prob > chi2 =     1.0000
```

4.3.4 Hausman Test

From the hausman test we cannot accept null hypothesis rather we accept alternative hypothesis of fixed affect model being appropriate because the probability is less than 5% thus being the right model

Table 4.5 Hausman Test

```
. hausman fixed .
```

	— Coefficients —		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
capitalade~y	-.1379535	-.1104843	-.0274692	.0125641
CreditRisk~t	-.4342595	-.6293087	.1950492	.0624419
liquiditym~t	.0535135	.0558247	-.0023112	.0346321

```

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

Test: Ho: difference in coefficients not systematic

      chi2(3) = (b-B)' [(V_b-V_B)^(-1)] (b-B)
              =      37.70
      Prob>chi2 =      0.0000
```

4.4 Panel Data Regression Analysis Results

$$Y_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 LM_{it} + \beta_3 CRM_{it} + \varepsilon_{it}$$

Table 4.6 Panel Data Regression Analysis Results

```
. xtreg ROE capitaladequacy CreditRiskManagement liquiditymanagement, fe

Fixed-effects (within) regression              Number of obs   =       55
Group variable: BankCode                      Number of groups =       11

R-sq:  within = 0.1752                       Obs per group:  min =       5
        between = 0.0964                       avg =           5.0
        overall = 0.1259                       max =           5

F(3,41) = 2.90
corr(u_i, Xb) = 0.0138                       Prob > F        = 0.0462
```

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
capitaladequacy	-.1379535	.0548993	-2.51	0.016	-.248825	-.0270821
CreditRiskManagement	-.4342595	.2464939	-1.76	0.086	-.9320641	.0635451
liquiditymanagement	.0535135	.0954867	0.56	0.578	-.1393259	.2463528
_cons	.2045065	.0384429	5.32	0.000	.1268695	.2821435
sigma_u	.0561615					
sigma_e	.04599168					
rho	.59857767	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(10, 41) = 5.76      Prob > F = 0.0000
```

$$Y = 0.2045065 - 0.1379535 CA - 0.4342595 CRM$$

Probability value (4.6%) is very small and less than 5% meaning that all coefficients of the model are not equal to zero. When probability value is significant it indicates that, the fitted model is good and nicely fitted. R squared is a statistical determinant on how the data is close to the fitted regression line which it ranges from 0% to 100%. The more the R squared moves away from 0% the better the model fits data (William, 2008). R squared is at 17.52% away from 0% which indicates better model. From the estimated results it is clear that, probability values of credit risk management (8.6%) and liquidity management (57.8%) are statistically insignificant to explain ROE because they have a probability which is more than 5%, meaning that, relationship between variables is highly caused by the two selected variables.

Capital Adequacy ratio is statistically significant to explain ROE because it has a probability value of 1.6% which is lower than 5%.

The results found that, liquidity management (0.0535) has greater positive impact on the financial performance of the listed commercial banks while, Credit risk management (-0.434) on the other hand had greater negative effect on the financial performance of banks followed by capital adequacy ratio (-0.1379). The regression coefficients are positive for the constant and liquidity management while negative for capital adequacy and credit risk management. This result indicates the presence of positive relationship between return on equity with liquidity management and negative relationship with capital adequacy ratio and credit risk management.

Liquidity management was omitted from the model as it is characterized by a positive coefficient (0.0535135) which shows that an increase by one unit in liquidity management ratio will lead to a corresponding increase in return on equity by 0.0535135 units. These findings are in agreement with that of Njeule (2013) whose study also revealed that there was great positive variation on the financial performance of commercial banks due to changes in Capital Adequacy, Liquidity Management, Risk Classification of Assets and Provisioning, Foreign Exchange Risk Exposure and Corporate Governance. This was an indication that CBK regulations had great positive effects on the financial performance of commercial banks.

Capital adequacy with the coefficient (-0.1379535) show that an increase in the capital adequacy ratio by one unit will lead to decrease in return on equity by 0.1379535 units. The findings was in agreement with that of Muiruri (2015), whose findings indicated that there was a negative correlation between capital adequacy requirements and financial performance of the commercial banks in Kenya.

Credit risk management had a negative coefficient (-0.4342595) which shows that an increase in the credit risk management by one unit, lead to a decrease in the ROE by 0.4342595 units. The above findings was supported by Ochieng (2014) who found negative relationship between asset quality with bank performance after conducting his study on effect of prudential guidelines and regulations on financial performance of commercial banks. So more effort has to be done in order to ensure the credit risk is lowered.

From the hypothesis formulated at the end of chapter two it was concluded that, null hypothesis(H_1^0) in capital adequacy was rejected and alternative hypothesis accepted because capital adequacy was significant to explain financial performance of commercial banks listed at NSE. In liquidity management null hypothesis (H_2^0) was accepted because liquidity management was positively insignificant to explain financial performance of the banks hence omitted from the nmodel. Credit risk management was also insignificant to explain performance thus null hypothesis was accepted (H_3^0).

CHAPTER FIVE

CONCLUSION AND RECOMMEDATION

5.1 Introduction

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study. The researcher had intended determine effect of Central Bank of Kenya regulations on the financial performance of listed commercial banks in Kenya.

5.2 Summary of Findings

5.2.1 Capital Adequacy Regulation and financial performance of banks

Capital adequacy with the coefficient (- 0.1379535) show that an increase in the capital adequacy ratio by one unit will lead to decrease in return on equity by 0.1379535 units. The study found out that, there is significant negative relationship between capital adequacy regulation and financial performance of commercial banks in Kenya. This finding was supported by other researchers such as (Francis and Osborne, 2009) they suggested that, the higher the capital requirement the lower the bank's optimal loan growth. Also Muiruri (2015), findings indicated that, there was a negative correlation between capital adequacy requirements and financial performance of the commercial banks in Kenya. This means that tightening of capital adequate regulations adversely affected the financial performance of commercial banks. This attributed to the reduction of funds available for operations of the commercial banks.

5.2.2 Credit risk management and financial performance of performance of banks

Credit risk management has a negative coefficient (-0.4342595) which shows that an increase in the credit risk management by one unit will lead to the decrease in the return on equity by

0.4342595 units. Therefore there is insignificant negative relationship between credit risk management and financial performance of commercial banks in Kenya. The above study findings was in the line with the following researchers, (Barth et al. 2001) who in there study associates tight banks' regulatory with high chances of inefficiency operation leading to banking crisis. This view by (Barth et al. 2001) was supported by (pasiouras, Gaganis and Zopounidis 2006) after reporting that, the less banks restrictions are, the higher the credit rating. Also Ochieng (2014) who found negative relationship between asset quality with bank performance. This means that tightening of credit risk management regulations adversely affected the financial performance of commercial banks. This can be attributed to the reduction of the number of loans underwritten due to strict due diligence in compliance with the credit risk management regulations.

5.2.3 Liquidity management Regulation and financial performance of banks

Liquidity management is characterized by a positive coefficient (0.0535135) which shows that an increase by one unit change in liquidity management ratio will lead to a corresponding increase in return on equity by 0.0535135 units. The study found insignificant positive relationship between liquidity management and financial performance of commercial banks in Kenya. This findings was supported by some researchers such as Lamberg and Valming (2009) researched on impact of liquidity management on profitability and found that, firms which had tightened there liquidity management strategies had good financial performance. Njeule (2013) whose study also revealed that there was great positive variation on the financial performance of commercial banks due to changes in Capital Adequacy, Liquidity Management, Risk Classification of Assets and Provisioning, Foreign Exchange Risk Exposure and Corporate Governance. This means that tightening of liquidity management regulations favorably affected the financial performance of commercial banks. This can be

attributed to the confidence by customers due to good liquidity standings hence increase in confidence by the investors to the whole of banking sectors.

5.3 Conclusion

The study concludes that, liquidity management had positive relationship with the performance of eleven (11) listed commercial banks in Kenya while both capital adequacy and credit risk management had negative relationship with banks performance in Kenya meaning that, both capital adequacy and credit risk management regulations in Kenyan banks is very low thus, the reason for exhibiting negative relationship with performance. The study further revealed that after the review of CBK regulation there was greater change in financial performance of commercial banks due to change in Capital Adequacy, Liquidity Management and Credit Risk Management from the year 2012 to 2016.

5.4 Recommendation

There is need for CBK to enhance their regulations on commercial banks in Kenya, as it was revealed that CBK regulations on banks enhance the financial performance of commercial banks in Kenya. However, a holistic and integrated regulatory policy approach should be adopted to strengthen market regulation in order to ensure the achievement Kenyan vision 2030 of being the financial centre in Eastern and Southern Africa.

5.5 Limitations of the Study

The study used secondary which was accessed from the websites of NSE and also banks official websites. Banks being very fragile in their operations, disclosing their information direct to everybody was a problem.

The researcher had to balance between job and also doing this study in order to meet the deadline which was issued by the school as well as not to enter in a conflict with employer.

This problem was dealt with through sacrificing Saturdays and Sundays in order to ensure I finish within the duration given by the school.

5.6 Areas for Further Research

This study did not include everything and a further study is recommended to include CBK regulatory requirement and their influence on the financial performance of institution. The researcher recommends that future research should be directed towards validating the results of this study by conducting a similar research in micro-finance in Kenya by collecting data from different sources

REFERENCES

- Adams, M and Buckles, M.(2003). The determinant of corporate financial performance in the Bermuda insurance market. *Applied financial economy* 13(2), 133-143
- Alexandru, C., Genu, G., Romanescu, M.L. (2008). The Assessments of Banking Performances-Indicators of Performance in Bank Area. *MPRA Paper no. 11600*.
- Alkadamani, K. (2015). Capital adequacy, bank behavior and crisis: evidence from emergent economies in italy. *European journal of sustainable development*, 4, 2, 329-338.
- Alshatti, A., S. (2015). The effects of credit risk management on financial performance of commercial banks in Jordan: *investment management and financial innovations, volume 12*
- Athanasoglou, P.P. et al. (2005). Bank specific, Industry and Macroeconomic Determinants of Bank Profitability. *Bank of Greece Working Paper 25*.
- Aymen, B., M. (2013). Impact of capital on financial performance of banks: case study of Tunisia. *Banks and banks systems, vol. 8*.
- Baltagi, B.H. (2005) *Econometric analysis of panel data* (third ed.) John Wiley & Sons
- Baltagi, BH. 2005. *A Hausman test based on the difference between fixed effects two-stage*
- Bank Regulation definition (en.m.wikipedia.org).
- Barth, J., Daniel E. N., Triphon P., and Glenn Y. (2003). *A Cross-country Analysis of the Bank Supervisory Framework and Bank Performance*. Financial Markets, Institutions & Instruments 12. Malden, MA: Blackwell Publishing Inc.
- Barth, J., G. Caprio and Levine, R. (2001). "Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability?" In: F. Mishkin, editor. *Prudential Supervision: What Works and What Doesn't*. Chicago, United States: National Bureau of Economic Research and University of Chicago Press.
- Barth, J., G. Caprio and Levine, R. (2001). "Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability?" In: F. Mishkin, editor. *Prudential Supervision: What Works and What Doesn't*. Chicago, United States: National Bureau of Economic Research and University of Chicago Press.
- Basel (1999). *Principles for the management of credit risk*. Basel committee on Banking Supervision,

- Berger, A. N., & Bouwman, C. H. (2008, October). *Financial Crises and Bank Liquidity Creation*. Retrieved March 2010, from Social Science Research Network: <http://ssrn.com/abstract=1231562>
- Berger, A., N. and G., F. Udell. (1995). Relationship Lending and Lines of Credit in Small Firm Finance. *The Journal of Business* 68:351.
- Blair, Tony. 1994. Socialism (Fabian Pamphlet 565). London: Fabian Society. 1995. *Let Us Face the Future* -- The 1945 Anniversary Lecture (Fabian Pamphlet 571). London: Fabian Society.
- Bound, John, David A. Jaeger and Regina M. Baker (1995). "Problems with Instrumental Variables Estimation when the Correlation between the Instruments and the Endogenous Explanatory Variable is Weak," *Journal of the American Statistical Association*, 90(430), 443-50.
- Bridges, J., D. Gregory, M. Nielsen, S. Pezzini, A. Radia and M. Spaltro (2014). The impact of capital requirements on bank lending: *working paper No. 486, Bank of England*.
- Burns, N., and Grove, K.(2003). *Understanding nursing research* (3rd ed.). Philadelphia: W.B.\ Saunders Company
- Casu, B. & C. Giradone (2006). Bank competition, concentration and efficiency in the single European market. *The Manchester School* 74(4): 441-468.
- Central Bank Kenya, (2015). *Bank supervision Annual report*. [Online] Available: <http://www.centralbank.go.ke>
- Central bank of Bangladesh 1982. {Online} available: <https://en.m.wikipedia.org>
- Central Bank of Kenya (2013), *Commercial banks Shareholding information*. [Online] Available: <http://www.centralbank.go.ke>
- Central bank of Kenya (2013). *Bank supervision and annual report*. [Online] Available: <http://www.centralbank.go.ke>.
- Central bank of Kenya governor May, 2016. " we were sleeping kenyan's. central bank Njoroge says after banks failure. [Online] Available: <http://www.centralbank.go.ke>.
- Central bank of Kenya governor Njuguna 2014, *financial sector contribution towards vision 2030 goals* [Online] Available: www.bis.org

- Central bank of Kenya(2015). *Bank supervision and annual report*. [Online] Available: <http://www.centralbank.go.ke>.
- Central Bank of Kenya, (2008). *Annual report* [Online] Available: <http://www.centralbank.go.ke>.
- Central Bank of Kenya, (2012). *Functions of central bank of Kenya*. [Online] Available: <http://www.centralbank.go.ke>.
- Central Bank of Kenya, (2013). *Guideline on Incidental Business Activities*. [Online] Available: <http://www.centralbank.go.ke>
- Central Bank of Kenya, (2013). *Non-Operating Holding Companies Guideline..* [Online] Available: <http://www.centralbank.go.ke>
- Central Bank of Kenya, (2013). *Prudential guidelines*. [Online] Available: <http://www.centralbank.go.ke>
- Central Bank of Kenya, (2013). *Risk management guideline*. [Online] Available: <http://www.centralbank.go.ke>.
- CFC Stanbic Bank (2015). *Annual report*. [Online] Available: <http://www.cfcstanbicbank.co.ke>
- CHANG, Y., PARK, J. Y. (2002). On the asymptotics of ADF tests for unit roots. *Econometric Reviews* 21 431–447
- Clarkson, M. (1995). ‘A stakeholder framework for analysis and evaluating corporate social performance’, *academy management review*, vol. 20, no. 1, pp. 92-117
- Commercial bank definition. (www.investopedia.com)
- Cornett, M.M & Saunders, A. (1999): *Fundamentals of Financial Institutions Management* International Edition, Irwin/McGraw-Hill
- Cytonn (2015). *Annual report on Kenya listed commercial banks*. [Online] Available: <https://cytonn.com>
- Dang, Uyen. (2011). *The CAMEL Rating System in Banking Supervision: a Case Study of* Arcada University of Applied Sciences, International Business.
- Davenport, H. J. (1913). *The Economics of Enterprise*. New York: Augustus M. Kelley.
Degree of Doctor of Philosophy thesis, Edinburgh Napier University.

- Deloof, M. (2003), Does working capital management affect profitability of Belgium firms?, *finance and accounting* 30(3-4), 573-588.
- Demirgunes K. (2016), the effect of liquidity on financial performance: evidence from Turkish Retail industry. *International journal of economics and finance* vol 8 no 4;2016 E-ISSN 1916-9728
- Dimitrios, P. (2009). *Banks and liquidity*: published in the Hellenic Government Gazette (FEK) B/924/5. City University of Seattle.
- Donaldson, T. and L.E, Preston.1995. the stakeholder theory of the corporation: concept, evidence and implication. *Academy of management review*, 20:1,65-91.
- Doyle, T.,Y.(2005). *difference between guidelines and rules*. Ty Doyle, partner at litigation boutique, J.D. Stanford
- Drost, E., A. (2007). Validity and reliability in social science research. *Educational research and perspectives*, Vol.38, No.1
- Faris, J., A.(2014). The efficiency of liquidity management of islamic banks: international *journal of business and social science*, vol. 5, No.5(1).
- Fernandez, A.,I., Gonzalez, F., 2005. How accounting and auditing systems can counteract risk-shifting of safety nets in banking: Some international evidence. *Journal of Financial Stability* 1, 466-500.
- Fernandez, A.I., Gonzalez, F., 2005. How accounting and auditing systems can counteract risk-shifting of safety nets in banking: Some international evidence. *Journal of Financial Stability* 1, 466-500.
- Finch , C. & Annette o. 2015. Participation in Kenya's local development funds: Reviewing the past to inform the future. Kenya Devolution, School of Government. *Working Paper series 3*.
- Francis, W. and M. Osborne (2009). Bank regulation, capital and credit supply: measuring the impact of prudential standards: UK. Financial services authority. *Occasional paper series 36*
- Garleanu, N. B., & Pedersen, L. H. (2007). *Liquidity and Risk Management*. Cambridge: National Bureau of Economic Research.

- Garson, G.D. (2014). *Multiple Regression* (2014 edition) school of public and international affairs. North Carolina State University
- Giddy, I., H. (1984). “*The Principles and Practice of Bank Supervision: Main Features and Evaluation and Possible Alternatives*”. Mimeo: IMF Central Banking Seminar, Washington, DC.
- Githinji, W., D. (2010), *Relationship between financial performance and CAMELS rating of commercial banks in Kenya*. Unpublished thesis for the degree of Masters of Business Administration- School of Business, University of Nairobi.
- Gizaw, M., Matewos K. and S. Salvaraj. (2015). Impact of credit risk on profitability performance of commercial banks in Ethiopia: *African journal of business management*, vol. 9(2), pp.59-66
- Government of Kenya (2008).*Kenya Vision 2030: First medium Term Plan (2008-2012)* Government Printer, Nairobi.
- Gray, R., D. Collison and J. Bebbington (1997). *The centre for social and environmental accounting research*, University of Dundee, DD1 4HN.
- Gudmundsson, R., Ngoka-Kisinguh, K., & Odongo, M. T. (2013). *The Role of Capital Requirements on Bank Competition and Stability: The Case of the Kenyan Banking Industry*. Kenya Bankers Association-KBA Centre for Research on Financial Markets and Policy Working Paper Series.
- Hassan, M., K.(1999). Islamic Banking in Theory and Practice: The Experience of Bangladesh. *Managerial Finance*, 25 (5), 60-113.
- Howells, P. and Bain, K. (2004).*Financial Markets and Institutions*; Pearson Educational Limited, Edinburgh Gate.
- Hulme, D & Mosley, P 1997, ‘*Finance for the poor or poorest? Financial Innovation, Poverty and Vulnerability*’, in Geoffrey, DW & Iffath AS (eds.) *Who needs credit? Poverty and finance in Bangladesh*, The University Press Ltd, Dhaka.
- Ibe, S., O. (2013). the impact of liquidity management on profitability of Banks in Nigeria, *journal of finance and bank management*. Pp,37-48 1(1) June 2013

- Iyade, A., I (2006). “*The Impact of Regulation and Supervision on the Activities of Banks in Nigeria (An Assessment of the Role of CBN and NDIC)*” PhD Thesis at the St. Clements University.
- James Durbin, ‘Testing for serial correlation in least squares regression when some of the regressors are lagged dependent variables’, *Econometrica* 38 (1970), 410–421.
- Jonathan, P. (2012). *Credit risk management in banking industry: case study for Atwiman Kwanwoma Rural Bank in Ghana*. unpublished thesis, Kwame Nkrumah university of science and technology.
- KCB Group (2016). *KCB forms holding firm to meet fresh guidelines*. {Online} available: www.businessdailyafrica.com
- Kenya bankers association (2012). *Growth of the bank sector in Kenya*. Nairobi government press
- Kenya treasury (2016), *Kenya treasury want minimum capital raised*. [Online] Available: www.theeastafrican.co.ke
- Kenya vision 2030, *international financial centre*. [Online] Available: www.vision2030.go.ke
- Keynes, J. M. (1936). *The general theory of employment, interest and money*. New York: Harcourt Brace and World.
- Kiecolt, K.J. & Nathan, L.E (1985). *Secondary analysis of survey data*. Newbury Park, CA:SAGE.
- Lamberg, S. and Valming, S. (2009). *Impact of liquidity management on profitability*. Unpublished thesis, Umea school of business.
- least squares and error components two-stage least squares* – Solution. *ECONOMETRIC THEORY* 21 (2):483-484,
- Ledgerwood, Joanna, 1999, “*Microfinance handbook: an institutional and financial perspective*” Washington DC, World Bank Publications
- Linyiru.B.M. (2006) *Survey of corporate governance practices in banks in Kenya*. Unpublished MBA project. School of Business, University of Nairobi
- Masibo, J. (2005), “ The relative power of CEO’s and Boards of Directors: associations with Corporate Performance” , *Strategic management Journal*, 12(2), pp.20

- McDonald, D. and Puxty, A. (1979): “An Inducement – Contribution Approach to Corporate Financial Reporting”, *Accounting, Organization and Society*, 4(1/2), 53-65
- Miles, S. (2012). Stakeholder: Essentially contested or just confused? *Journal of Business Ethics*, 108, 285-98. Donaldson, T. and Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20, 65-91.
- Molefe, B. and Mazindutsi P., F (2015), *effect of capital and liquidity management on profitability of Major South African Banks*. Proceeding of the 28th annual conference of the Southern African Institute of management scientist. ISBN: 978-0-620-71797-7.
- Mugenda, O.N and Mugenda, A.G. (1999). *Research Methods: A Quantitative and Qualitative Approach*. Nairobi: ACTS press.
- Muiruri, P., M. (2015). *Effects of central bank regulatory requirements of financial performance of commercial banks in kenya*: unpublished thesis, Jomo Kenyatta University of Agriculture and Technology
- Munda, G, (2013). “on the foundation of a well-being economics and policy” *UHE*,. *Working paper 2013_01*
- Murthy, Y. & Sree, R. (2003). *A Study on Financial Ratios of Major Commercial Banks*. Research Studies, College of Banking & Financial Studies, Sultanate of Oman.
- Naceur, S., & Kandil, M. (2009). The impact of capital requirements on banks’ cost of intermediation and performance: The case of Egypt. *Journal of Economics and Business*, 61, 70-89.
- Nairobi Security Exchange, (2015). [Online] Available: http://en.wikipedia.org/wiki/nairobi_security_exchange.
- Nairobi Security Exchange, (2016). *Annual report*. [Online] Available: www.nse.co.ke
- National Bank of Kenya (2016). *Bank ownership*. {Online} available: www.nation.co.ke
- National Bank of Kenya (2016). *Branches of National Bank in Kenya*. {Online} available: www.nationalbank.co.ke
- National Bank of Kenya (2016). *How blind ambition sunk National bank*. {Online} available: www.nation.co.ke

- National Bank of Kenya (2016). *National bank of Kenya reports sh. 1.2 billion pretax loss in 2015*. {Online} available: <https://www.standardmedia.co.ke>
- National Bank of Kenya. (2013). *Extended working hours*. {Online} available: www.nationalbank.co.ke
- Njeule, M., A. (2013). *The Effects of Central Bank of Kenya Prudential Regulations on the Financial Performance of Commercial banks in Kenya*. Unpublished MBA Thesis. University of Nairobi, Kenya.
- Nzioki, S., J. (2011). *The impact of capital adequacy on the financial performance of commercial banks quoted at the Nairobi Stock of Exchange*. Unpublished thesis for the degree of Masters of Business Administration- School of Business, University of Nairobi.
- Ogula, P. A. (2005). *Research methods*. Nairobi: Catholic University of Eastern Africa Publications.
- Olalekan, A. (2013). Capital adequacy and banks' profitability: An empirical evidence from Nigeria. *American international journal of contemporary research*, vol.3 No.10
- Oloo, O. (2011). *Banking Survey Report. The best banks this decade 2001-2010*, Think Business Limited, Kenya, Retrieved from www.bankingsurvey.co.ke
- Olweny, T., & Shipho, T. M. (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya. *Economics and Finance Review*, 1(5), 1-30.
- Omondi, J., O (2014). Effect of Central Bank of Kenya Prudential Guidelines and Regulations on the Financial Performance of the commercial banks in Kenya. Unpublished thesis for Degree of Masters of science in Finance from University of Nairobi.
- Pasiouras, F.,C. Gaganis and C. Zopounidis, C 2006. The impact of bank regulations, supervision, market structure, and bank characteristics on individual bank ratings: A cross-country analysis, *journal of finance*, vol 10 pp 403–438.
- Pessoa, Mario and Mike Williams, 2012, *Government Cash Management: Relationship between the Treasury and the Central Bank*, International Monetary Fund, Technical Notes and Manuals.
- Puri, M., J. Rocholl, and S. Steffen, 2011, "On the importance of prior relationships in bank loans to retail customers".

- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of management*.
- Richard, R.,J (2001), *the relationship between regulators and the regulated in banking*. Federal Reserve Bank of Chicago,
- Roe, M. (1994), *Strong managers, weak owners: The political roots of American corporate finance*, University Press, Princeton, NJ.
- Ross, S. A., Westerfield, R. W, Jaffe, J. (2005), “*Corporate Finance*”. McGraw-Hill Inc., 7th Ed.
- Rothbard, M. N.. *Man, Economy, and State with Power and Market*. Ludwig von Mises Institute, Auburn, second edition, [1962] 2009.
- Rutagi . R (1997), *Performance of parastatal Organizations in Uganda*.
- Saastamoinen, A. (2015). *Heteroscedasticity or Production Risk? A Synthetic View*. *Journal of Economic Surveys*,29 (3): 459-478.
- Said, R., & Tumin, M. (2011). Performance and financial ratios of commercial banks in Malaysia and China. *International Review of Business Research Papers*, 7(2), 157-169.
- Samad, A. (1999). Comparative Efficiency of the Islamic Bank Malaysia vis-à-vis Conventional Banks. IIUM . *Journal of Economics and Management*, 7 (1), 1-25.
- Sanda, A., Mukaila, A. and Garba, T. (2005): “*Corporate Governance Mechanisms and Firm Financial Performance in Nigeria*”, AERC Research Paper, No. 149
- Sangmi, M. and Nazir, T. (2010). Analyzing financial performance of commercial banks in India,: *Pak. Commer. Soc. Sci.* vol. 4(1), 40-55
- Saunders, M..K., Lewis, P. and Thornhill, A. (2000). *Research Methods for Business Students*, Second Edition, New York Prentice Hall.
- Shankar,K. (1997). Planning for Capital adequacy in public sector banks. *The Management Accountant*, 32(2), 100-104.
- Sheng, A. (1991). “*The Art of Bank Restructuring: Issues and Techniques*” Washington: Economic Development Institute publication.
- Sonal Sejpal & Mona Doshi, Anjarwalla & Khanna, *Banking Regulation: Kenya, Global Legal insights*, 1st Edition Special Issue, Kenya Gazette, Supplement No. 169 (Acts No. 41)

Acts, 2013 Nairobi, 2nd December, 2013 The Microfinance (Amendment) Act, 2013 page 1101

Starik, M., Rands, G. P. 1995. "Weaving an Integrated Web: Multilevel and Multisystem Perspectives of Ecologically Sustainable Organizations." *Academy of Management Review*, 20: 908 - 935..

Turnbull, S. (1995), 'Stakeholder democracy: redesigning the governance of the firms and bureaucracies', *journal of social economic*, vol 23, no 3, pp.321-360

Vianney, K., j. (2013). *Relationship between regulations and financial performance of Rwanda commercial banks*: unpublished thesis, University of Nairobi

Vossen, B., V., D (2010). *Bank liquidity management*: unpublished thesis, university at Albany, State university of New York.

Wagstar, J. (1999). The Basel Accord of 1998 and the international Credit Crunch of 1989-1992, *Journal of Financial Services Research*. Vol.15, pp. 123-143.

Wang .W (2013) *credit risk management in Rural Commercial Banks in China*. Unpublished thesis. School of business.

Waweru, M. (2007). *Financial regulatory structure reform in Kenya*: The perception of financial intermediaries in Kenya regarding the case for a single financial regulator.

William H. Greene (2008) *Econometric analysis* /. 6th ed., Upper Saddle River, N.J. : Prentice Hall,.

Zou, Y. A, Fan. L (2014) *impact of credit risk management on profitability of commercial banka: A case study of Europe*. Unpublished thesis, Umea School of Business and Economics. Degree project, 30hp

APPENDICES

Appendix: (i)

List of Commercial Banks in Kenya.

- (1) African Banking Corporation Ltd
- (2) Bank of Africa Kenya Ltd
- (3) Bank of Baroda Kenya Ltd
- (4) Bank of India
- (5) Barclays Bank Kenya Ltd
- (6) CFC Stanbic Bank Ltd
- (7) Charterhouse Bank Ltd (under statutory management)
- (8) Chase Bank Kenya Ltd
- (9) Citibank N.A.
- (10) Commercial Bank of Africa Ltd
- (11) Consolidated Bank of Kenya Ltd
- (12) Co-operative Bank of Kenya Ltd
- (13) Credit Bank Ltd
- (14) Development Bank of Kenya Ltd
- (15) Diamond Trust Bank of Kenya Ltd
- (16) Dubai Bank Kenya Ltd (under receivership)
- (17) Eco Bank Kenya Ltd
- (18) Spire Bank Ltd
- (19) Equity Bank Ltd
- (20) Family Bank Ltd
- (21) Fidelity Commercial Bank Ltd

- (22) Guaranty Trust Bank
- (23) First Community Bank Ltd
- (24) Giro Commercial Bank Ltd
- (25) Guardian Bank Ltd
- (26) Gulf Africa Bank Ltd
- (27) Habib Bank A.G. Zurich
- (28) Habib Bank Ltd
- (29) Imperial Bank Ltd (under receivership)
- (30) I & M Bank Ltd
- (31) Jamii Bora Bank Ltd
- (32) Kenya Commercial Bank Ltd
- (33) Sidian Bank Ltd
- (34) Middle East Bank Kenya Ltd
- (35) National Bank of Kenya Ltd
- (36) NIC Bank Ltd
- (37) Oriental Commercial Bank Ltd
- (38) Paramount Universal Bank Ltd
- (39) Prime Bank Ltd
- (40) Standard Chartered Bank of Kenya Ltd
- (41) Transnational Bank Ltd
- (42) UBA Kenya Bank Ltd
- (43) Victoria Commercial Bank Ltd
- (44) Housing Finance Company of Kenya Ltd

Appendix (ii)

Commercial Banks listed at the Nairobi security Exchange (NSE) in Kenya.

- (1) Equity Bank ltd
- (2) Housing Finance Company of Kenya ltd
- (3) NIC Bank ltd
- (4) National Bank of Kenya ltd
- (5) Diamond Trust Bank of Kenya ltd
- (6) Co-operative Bank of Kenya ltd
- (7) CFC Stanbic Bank ltd
- (8) Barclays Bank Kenya ltd
- (9) Kenya Commercial Bank ltd
- (10) I & M Bank ltd
- (11) Standard Chartered Bank of Kenya ltd

Appendix: (iii)

Panel Data

ROE	capital adequacy	Credit Risk Management	liquidity management	Bank Code	Year
0.0698	0.2842	0.0327	0.3	0	2012
0.0919	0.2414	0.045	0.42	0	2013
0.066	0.1393	0.0573	0.315	0	2014
-0.1084	0.1399	0.0795	0.307	0	2015
0.0134	0.1187	0.2325	0.297	0	2016
0.2636	0.1803	0.0112	0.39	2222	2012
0.2563	0.208	0.014	0.38	2222	2013
0.2572	0.1981	0.0399	0.46	2222	2014
0.1537	0.2115	0.0627	0.5374	2222	2015
0.2061	0.2091	0.06	0.5693	2222	2016
0.193	0.3204	0.0201	0.3538	3333	2012
0.192	0.1562	0.0277	0.2854	3333	2013
0.1728	0.2086	0.0236	0.3308	3333	2014
0.1659	0.2047	0.0776	0.298	3333	2015
0.1367	0.2162	0.0739	0.3852	3333	2016
0.2095	0.2272	0.0344	0.355	4444	2012
0.2011	0.2245	0.0419	0.333	4444	2013
0.22	0.2101	0.0306	0.313	4444	2014
0.2415	0.1536	0.0352	0.3	4444	2015
0.2042	0.1988	0.0477	0.303	4444	2016
0.1534	0.1734	0.0029	0.3546	5555	2012
0.0409	0.1902	0.0032	0.3402	5555	2013
0.2575	0.1885	0.0036	0.31	5555	2014
0.2219	0.192	0.0276	0.335	5555	2015
0.2026	0.1815	0.0368	0.3726	5555	2016
0.1444	0.2952	0.0515	0.368	6666	2012
0.1423	0.2158	0.0645	0.3312	6666	2013
0.1386	0.151	0.0654	0.3076	6666	2014
0.1457	0.1812	0.0506	0.2804	6666	2015
0.1024	0.1768	0.076	0.2105	6666	2016
0.2577	0.3009	0.0129	0.46	7777	2012
0.2494	0.2356	0.0275	0.34	7777	2013
0.2701	0.1733	0.0205	0.304	7777	2014
0.1158	0.9952	0.0153	0.291	7777	2015
0.1618	0.9386	0.0359	0.477	7777	2016
0.2062	0.1983	0.007	0.38	8888	2012
0.2185	0.2052	0.0085	0.326	8888	2013
0.161	0.1894	0.0075	0.356	8888	2014
0.1597	0.1768	0.0171	0.39	8888	2015

0.1688	0.185	0.0184	0.502	8888	2016
0.2581	0.2379	0.0267	0.358	9999	2012
0.2476	0.2105	0.0237	0.326	9999	2013
0.1971	0.2164	0.0271	0.338	9999	2014
0.2123	0.2125	0.0208	0.361	9999	2015
0.2173	0.2276	0.0288	0.332	9999	2016
0.1104	0.255	0.0073	0.389	1010	2012
0.1581	0.2053	0.0069	0.679	1010	2013
0.2056	0.2108	0.0176	0.414	1010	2014
0.1662	0.187	0.021	0.737	1010	2015
0.1463	0.1812	0.0284	0.546	1010	2016
0.2954	0.2576	0.0204	0.468	1111	2012
0.2354	0.1589	0.0172	0.42	1111	2013
0.2196	0.1595	0.0201	0.442	1111	2014
0.2115	0.184	0.016	0.341	1111	2015
0.1689	0.1786	0.0338	0.283	1111	2016

Bank Code	Bank
0	national bank
2222	STANCHART
3333	NIC
4444	KCB
5555	I & m
6666	HFB
7777	EQUITY
8888	DIAMOND
9999	CO-OP
1010	CFC
1111	Barclays

